

# LINEAR MOTOR/ROTARY MOTOR 直线电机/直驱旋转电机

TPA 玖钧传动 · 智造兴邦



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Address: Building 6, Linrun Zhigu, No.1 R&D Fifth Road, Songshan Lake, Dongguan City

深圳办事处: Shenzhen office:

地址: 深圳市龙华区龙华街道龙观东路57号时代大厦

Address: Times building, No.57, Long Guan East rd, Longhua district, Shenzhen

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TPA 网站  
TPA website

微信公众号  
Wechat public account



产品型录编号: TPA-BD-ZE-006

— 玖钧传动 · 智造兴邦 —

# TPA 玖钧传动 Motion Control



— 玖钧传动 · 智造兴邦 —

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# 公司简介

## COMPANY INTRO ▶

TPA玖钧传动创立于2016年10月,隶属玖钧集团,总部坐落在中国·昆山,现有苏州、深圳、宁波三大研发中心、制造基地;全国拥有十几处服务据点。产品畅销海内外主要有:中国(台湾)、日本、越南、印度、美国、欧洲。总生产面积达45000余平方米,在职员工500人+,拥有各类先进设备近400台+。

注册商标TPA,寓意:TPA玖钧传动在摸索中“Transfer”不断改变,工作中“Passion”充满激情,发展中“Active”积极进取,永远以昂扬的斗志奋发向前。

TPA玖钧传动——专注于高速高精传动产品,是一家集专业研发、生产、销售、售后、服务为一体的国家级专精特新“小巨人”企业、国家高新技术企业、江苏省级专精特新、省级技术研发中心、江苏省民营科技企业、昆山市专精特新、智能控制SCARAJ机器人工程技术研究中心。主要产品有:精密传动部件(精密滚珠丝杆副、精密直线导轨副)、精密直线模组(日规模组、欧规模组)、电动缸、钢基模组、内嵌式铝基模组、简易模组、直线电机、直驱旋转电机)、气浮运动控制平台系统、磁悬浮智能传输系统(磁驱环形线、磁悬浮传输系统)。

TPA玖钧传动产品主要服务于:汽车、激光、光伏、3C、锂电、医疗、集成电路、半导体、数控机床、储能、军工等11大产业及其他非标自动化设备;被广泛应用于取放、搬运、定位、分类、扫描、检测、点胶、焊锡等各类作业形式,模块化的产品满足客户多元化的应用场景。

TPA玖钧传动将秉承“永远为伙伴提供优质的服务,有责方远,利他共赢”的公司使命,优化产品,不断创新,始终坚持以高效的运作,优质的产品,精益求精的精神服务客户。

TPA玖钧传动以技术为核心、产品为基础、市场为导向、出色的服务团队、打造“TPA玖钧传动·智造兴邦”的行业新标杆。

TPA Motion Control was founded in October 2016 and is affiliated to JiuJun Group, Our headquarters is located in Kunshan, China. We have 3 R&D centers and manufacturing bases in Suzhou, Shenzhen and Ningbo, and have more than a dozen service locations across the world. Our products sell well at china and abroad mainly in: China (Taiwan), Taiwan(China), Japan, Vintem, India, USA, Europe. Our production area reaches more than 45,000 square meters, with 500+ employees and nearly 400+ sets of various advanced equipment.

Our registered trademark TPA means: TPA Robot "Transfer" continues to make progress in the process of exploration, "Passion" is full of passion in work, "Active" is proactive in development, and we always strives to move forward with high morale.

TPA Robot focuses on high-speed and high-precision transmission products. We are a national-level specialized and new "LITTLE GIANT" enterprise integrating professional R&D, production, sales, after-sales and service. Our main products include: precision transmission components (precision ball screws, precision linear guideways), linear modules (Ball screws driven linear modules, belt driven linear modules, rack & pinion linear modules, linear motors), air-floating motion control systems, magnetic drive intelligent transmission systems (magnetic drive ring lines, magnetic levitation transmission

TPA Robots products mainly serve industries such as automobiles, lasers, photovoltaics, 3C, lithium batteries, medical care, integrated circuits, semiconductors, CNC machine tools, energy storage, military industry and other non-standard automation equipment; they are widely used in pick and place, handling, positioning, classification, scanning, detection, dispensing, soldering and other types of operations, modular products meet customers' diverse application scenarios.

TPA Robot will adhere to the company mission of "always providing high-quality services to partners, being responsible, altruistic and win-win", optimizing products, constantly innovating, and always insisting on serving customers with efficient operations, high-quality products, and the spirit of excellence.

TPA Robot takes technology as the point, product as the foundation, market as the guide, and excellent service team to create a new industry benchmark of "TPA Robot · Intelligent Manufacturing to Prosper the Nation".



# >> 公司价值观 Corporate values

核心的竞争和公司的价值观是企业品牌价值的重要体现。  
The core competition and the company's values are the important embodiment of enterprise brand value.



**出色的营销团队, 专业的产品咨询, 悉心的客户服务, 完善的售后体系。**  
Excellent marketing team, professional product consultation, attentive customer service and perfect after-sales system.

**正直, 尊重个人。**任何讨论都以改善工作为前提。尊重差异, 保护多样式的个性。  
Integrity and respect for individuals. Any discussion is premised on improving the work. Respect differences and protect multi-style personalities.

**敬业, 客户至上。**为客户提供无可挑剔的服务。公司在做任何事情或任何决定时都必须同时考虑到客户的感受和利益。  
Dedicated, customer first. Provide impeccable service to customers. The company must consider the feelings and interests of customers at the same time when doing anything or making any decision.

**专业, 充满激情。**勤奋和敬业让我们出色, 投入让我们生动, 激情让我们卓越。  
Professional and full of passion. Diligence and dedication make us outstanding, devotion makes us vivid, and passion makes us outstanding.

**主动, 不断创新。**每个人都是推动公司前进的力量。我们崇尚个人主动创新。任何对公司有益的事情大家都会不遗余力的支持, 主动配合。我们相信每个人的努力都会对公司产生深远的影响。  
Initiative and continuous innovation. Everyone is a force to push the company forward. We advocate individual initiative innovation. Everyone will spare no effort to support and actively cooperate with anything that is beneficial to the company. We believe that everyone's efforts will have a profound impact on the company.

## 我们的优势 Our advantage

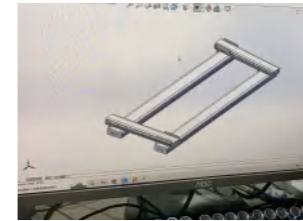


- 1 平台优势**  
Platform advantage  
专业的传动组件制造厂商, 有苏州、深圳、宁波三大生产制造基地和研发中心, 拥有45000余平方米生产制造车间, 自有加工设备近400台+, 销售的产品都具有全自主知识产权。  
Professional transmission component manufacturers, Suzhou, Shenzhen, Ningbo three major manufacturing bases and R & D center, with more than 45,000 square meters of production and manufacturing workshops, its own processing equipment
- 2 团队优势**  
Team advantage  
公司组织架构齐全, 团队核心成员均在行业耕耘十余年, 团队年轻化, 富有活力, 勇于担当, 可为客户提供准确的选型方案及其他相关咨询服务。  
The company has a complete organizational structure, and the core members of the team have worked in the industry for more than ten years. The team is young, energetic and courageous, and can provide customers with accurate selection
- 3 技术优势**  
Technological advantage  
公司拥有百余位行业内资深技术研发人员, 可为客户提供非标定制化需求, 多样灵活的方案。  
The company has more than 100 senior technical research and development personnel in the industry, can provide
- 4 产品优势**  
Product advantage  
核心配件自产, 自给率高, 立足于自动化设备传动领域, 产品类别齐全, 可满足客户在传动形式上多种需求。  
Professional transmission component manufacturers, Suzhou, Shenzhen, Ningbo three major manufacturing bases and R & D center, with more than 45,000 square meters of production and manufacturing workshops, its own processing equipment
- 5 品质优势**  
Quality advantage  
拥有先进的制造设备、专业的检测设备, 完整的生产工艺流程、专业的团队, 多道品质检验流程, 确保产品一致性。  
With advanced manufacturing equipment, professional testing equipment, complete production process, professional team, multi-channel quality inspection process to ensure product consistency.
- 6 服务优势**  
Service advantage  
我司拥有全球化销售网络, 办事处及专业的售后团队, 更快速响应客户售前、售中、售后服务需求。  
Our company has a global sales network, offices and professional after-sales team, more quickly respond to customer pre-
- 7 社会责任**  
Social responsibility  
为员工提供舒适、安全、健康的工作环境, 精密传动配件自产自销, 打破进口依赖, 摆脱“卡脖子”障碍, 专注高速高精传动产品, 为国家智能制造发展添砖加瓦。  
To provide employees with a comfortable, safe and healthy working environment, self-production and self-marketing of precision transmission parts, breaking the import dependence, getting rid of the "jam neck" barrier, focusing on high-speed
- 8 价格优势**  
Price advantage  
规模大、产能高、编制精、人员结构稳定;可帮助客户降低生产成本, 提高产品利润及市场竞争力。  
Large scale, high production capacity, fine establishment, stable personnel structure; It can help customers reduce

## TPA公司环境 Company Environment



## TPA模组生产流程 Production process



1. 按照客户需求设计定制图纸。  
Design customized drawings according to customer requirements.



2. 订单确认, 客户回传合同及图纸。  
Order confirmation, Customers return contracts and drawings.



3. 按照图纸CNC生产加工。  
CNC production and processing according to drawings



4. 检查导轨平面度。  
Check the flatness of the guide rail.



5. 检查导轨平行度。  
Check the parallelism of guide rails.



6. 安装读光栅读数头。  
Install the grating reading head.



7. 滑座组装。  
Slide seat assembly.



8. 通电测试。  
Power-on test.



9. 模组运行噪音检测。  
Running noise detection of module.

**TPA**  
玖钧传动  
Motion Control

**直驱电机滑台出厂检验报告**  
FACTORY INSPECTION REPORT OF DIRECT DRIVE MOTOR SLIDING TABLE

产品名称: \_\_\_\_\_ 型号: \_\_\_\_\_  
产品型号: \_\_\_\_\_ 订单号: \_\_\_\_\_

检验项目		检验标准	检验结果	检验人
1	外观检查	无划伤、无变形		
2	尺寸检查	符合图纸要求		
3	重量检查	符合规格要求		
4	材料检查	符合材料要求		
5	表面处理	符合工艺要求		
6	装配检查	符合装配要求		
7	功能测试	符合功能要求		
8	噪音测试	符合噪音要求		
9	其他			

玖钧传动·智能制造  
www.tparobot.cn

滑台出厂均附有相应检验报告, 确保产品符合使用要求, 方准予出厂。  
The sliding table is shipped with the corresponding inspection report to ensure that the products meet the use requirements, and the sliding table is allowed to leave the factory.

# 直线电机模组规格索引

## Linear motor module specification index

### TPA-LNP模组系列

#### TPA-LNP Linear Motor Module Series

规格 Specifications	持续推力 Sustained thrust (N)	峰值推力 Peak thrust (N)	最大负载 Maximum load	行程 Stroke (mm)
TPA-LNP3-100-20C2	70	150	15	60~3960
TPA-LNP3-100-20C3	105	225	25	60~3960
TPA-LNP3-100-20C4	136	301	35	60~3960
TPA-LNP3-120-35C2	122	265	20	60~3960
TPA-LNP3-120-35C3	180	395	40	60~3960
TPA-LNP3-120-35C4	238	532	60	60~3960
TPA-LNP3-140-55C2	191	418	50	60~3960
TPA-LNP3-140-55C3	286	627	80	60~3960
TPA-LNP3-140-55C4	373	835	100	60~3960
TPA-LNP3-170-75C2	260	570	70	60~3960
TPA-LNP3-170-75C3	390	855	100	60~3960
TPA-LNP3-170-75C4	506	1132	150	60~3960
TPA-LNP3-200-100C2	348	759	80	60~3960
TPA-LNP3-200-100C3	522	1138	120	60~3960
TPA-LNP3-200-100C4	679	1132	160	60~3960
TPA-LNP2-140-20C2	70	150	30	60~3960
TPA-LNP2-140-20C3	105	225	50	60~3960
TPA-LNP2-140-20C4	136	301	65	60~3960
TPA-LNP2-170-35C2	122	265	40	60~3960
TPA-LNP2-170-35C3	180	395	55	60~3960
TPA-LNP2-170-35C4	238	532	75	60~3960
TPA-LNP2-170-35C6	350	798	130	60~3960
TPA-LNP2-200-55C2	191	418	40	60~3960
TPA-LNP2-200-55C4	373	835	100	60~3960
TPA-LNP2-200-55C6	545	1253	180	60~3960
TPA-LNP-140-P11	103	289	30	60~5760
TPA-LNP-140-P12	205	579	60	60~5700
TPA-LNP-140-P13	308	868	100	60~5580
TPA-LNP-200-P21	181	512	60	60~5760
TPA-LNP-200-P22	362	1023	120	60~5640
TPA-LNP-200-P23	544	1535	180	60~5580
TPA-LNP-230-P31	292	823	100	60~5700
TPA-LNP-230-P32	583	1646	200	60~5700
TPA-LNP-230-P33	875	2469	300	60~5580

### TPA-P系列

#### TPA-P Series

规格 Specifications	额定推力 Rated thrust (N)	峰值推力 Peak thrust (N)	额定电流 Rated current (Arms)	峰值电流 Peak current (Arms)	动子质量 Moving mass (kg/m)
TPA-P11	103	289	2.1	6.3	0.7
TPA-P12	205	579	4.2	12.7	1.4
TPA-P13	308	868	6.3	19.0	2.1
TPA-P21	181	512	2.0	5.9	1.1
TPA-P22	362	1023	3.9	11.8	2.2
TPA-P23	544	1535	5.9	17.6	3.3
TPA-P31	292	823	2.0	6.0	1.9
TPA-P32	583	1646	4.0	12.0	3.8
TPA-P33	875	2469	13.4	40.2	5.7

### TPA-PQ系列

#### TPA-PQ Series

规格 Specifications	额定推力 Rated thrust (N)	峰值推力 Peak thrust (N)	额定电流 Rated current (Arms)	峰值电流 Peak current (Arms)	动子质量 Moving mass (kg/m)
TPA-PQ20-C2	70	150	2.7	9	0.4
TPA-PQ20-C3	105	225	2.7	9	0.6
TPA-PQ20-C4	136	301	5.2	18	0.8
TPA-PQ35-C2	122	265	2.7	9	0.9
TPA-PQ35-C3	180	395	2.7	9	1.2
TPA-PQ35-C4	238	532	5.2	18	1.9
TPA-PQ55-C2	191	418	2.65	9	1.4
TPA-PQ55-C3	286	627	2.65	9	2.1
TPA-PQ55-C4	373	835	5.16	18	2.8
TPA-PQ75-C2	260	570	2.65	9	1.75
TPA-PQ75-C3	390	855	2.7	9	2.6
TPA-PQ75-C4	506	1132	5.16	18	3.6

### TPA-UH系列

#### TPA-UH Series

规格 Specifications	额定推力@100°C (*1) (N) Rated thrust @100°C (*1)	峰值推力 (N) Peak force	额定电流@100°C (*1) (A rms) Rated current @100°C (*1)	峰值电流 Peak current (Arms)	动子质量 Moving mass (kg/m)
TPA-UH31-S1	40	240	2.02	12.12	0.22
TPA-UH32-S2	80	480	2.02	12.12	0.44
TPA-UH33-S3	120	720	2.02	12.12	0.66
TPA-UH41-S1	68	408	2.09	12.52	0.28
TPA-UH42-S2	136	816	2.09	12.52	0.56
TPA-UH43-S3	204	1224	2.09	12.52	0.84
TPA-UH44-S4	272	1632	2.09	12.52	1.12
TPA-UH45-S5	340	2040	4.17	25.03	1.40
TPA-UH46-S6	408	2448	4.17	25.03	1.68
TPA-UH51-S1	83	498	2.63	15.76	0.65
TPA-UH52-S2	166	996	2.63	15.76	1.30
TPA-UH53-S3	249	1494	2.63	15.76	1.95
TPA-UH54-S4	332	1992	5.25	31.52	2.70
TPA-UH55-S5	415	2490	5.25	31.52	3.25

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## 直驱旋转电机规格索引

### Rotary Motor specification index

#### TPA-M(外转子型)系列 TPA-M (Outer rotor type)Series

规格 Specifications	连续转矩 Continuous torque (N.m)	最大转矩 Maximum torque (N.m)	连续电流 Continuous current (A rms)	最大电流 Maximum current (Arms)	转矩常数 Torque constant (Nm/Arms)
TPA-M-112-065	3	9	2.5	7.5	1.2
TPA-M-112-085	3	9	2.5	7.5	1.2
TPA-M-112-095	8.5	26	2.5	7.5	3.4
TPA-M-140-050	6	16	2.8	7	2.4
TPA-M-140-080	10.5	28	2.5	7	4.2
TPA-M-170-050	4.5	14	1.4	4.2	3.4
TPA-M-170-095	23.8	71	2.5	7.5	9.5
TPA-M-170-110	23.8	71	2.5	7.5	9.5
TPA-M-170-125	41.8	125	2.5	7.5	16.7
TPA-M-170-130	41.8	125	2.5	7.5	16.7
TPA-M-170-155	59.5	179	2.5	7.5	23.8
TPA-M-190-100	20.0	60	3	9	6.7
TPA-M-220-062	10.2	30.6	3	9	3.4
TPA-M-224-042	14.1	42.2	2.2	6.6	6.4
TPA-M-224-062	35	105	2.2	6.6	15.7
TPA-M-263-065	45.0	135	7.10	21.3	6.3
TPA-M-263-095	45.0	135	7.10	21.3	6.3
TPA-M-263-112	95	190	7.10	14.20	13.4
TPA-M-263-113	95	190	7.10	14.20	13.4
TPA-M-263-138	150	300	7.10	14.20	21.9
TPA-M-263-188	250	500	7.10	14.20	35.2
TPA-M-280-145	95.0	190	7.1	14.2	13.4
TPA-M-280-170	95.0	190	7.1	14.2	13.4
TPA-M-280-231	250.0	500	7.1	14.2	35.2
TPA-M-325-065	30	90.0	1.1	3.4	27.3

## 直驱旋转电机规格索引

### Rotary Motor specification index

#### TPA-M(内转子型)系列 TPA-M (Inner rotor type)Series

规格 Specifications	连续转矩 Continuous torque (N.m)	最大转矩 Maximum torque (N.m)	连续电流 Continuous current (A rms)	最大电流 Maximum current (Arms)	转矩常数 Torque constant (Nm/Arms)
TPA-M-040-038	0.13	0.39	0.63	1.9	0.21
TPA-M-062-060	0.3	1.0	1.6	4.8	0.2
TPA-M-080-050	0.6	1.9	3.2	9.6	0.2
TPA-M-080-067	1	3	3.2	9.6	0.31
TPA-M-100-035	0.6	19	3.2	9.6	0.2
TPA-M-120-050	3.5	10.5	1.5	4.5	2.33
TPA-M-140-129	18.0	47	5	13	3.6
TPA-M-140-189	40.0	104	5	13	8
TPA-M-170-050	40.0	104	5	13	8
TPA-M-170-075	16.8	50	3.5	10.5	4.8
TPA-M-180-055	14.0	42	4.5	13.5	3.1
TPA-M-180-095	25.2	76	4.5	13.5	5.6
TPA-M-180-125	40.1	120	4.5	13.5	8
TPA-M-220-123	50.6	152	5.5	16.5	9.2
TPA-M-220-168	87.4	266	11.5	35	7.6
TPA-M-220-208	115.0	350	5.75	17.5	20
TPA-M-224-042	9.9	30	2.3	7	4.3
TPA-M-380-230	600	1406	32	75	18.75
TPA-M-390-245	280.0	1400	5	25	56
TPA-M-408-077	150.9	463.3	4.3	13.2	35.1
TPA-M-408-102	270.0	675.0	6.0	15	45.0
TPA-M-408-165	500.5	1501.6	8.6	25.8	58.2
TPA-M-660-180	1300.0	2500.0	32.0	64	41.0
TPA-M-660-230	1950.0	3600.0	32.0	64	41.0

LNP3

LNP2

LNP

TPA-P

TPA-PQ

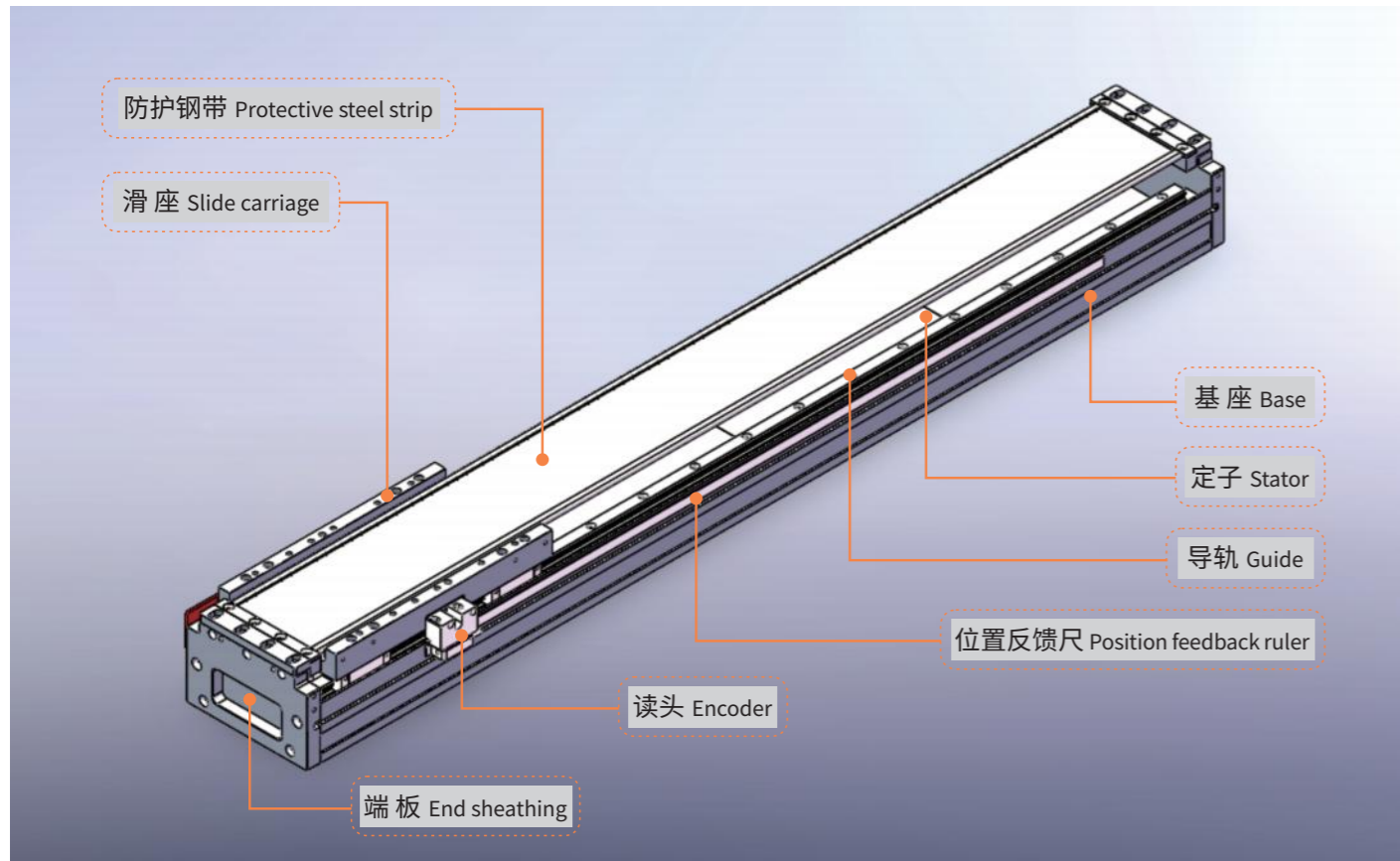
TPA-UH

DDR

参考资料  
Reference data

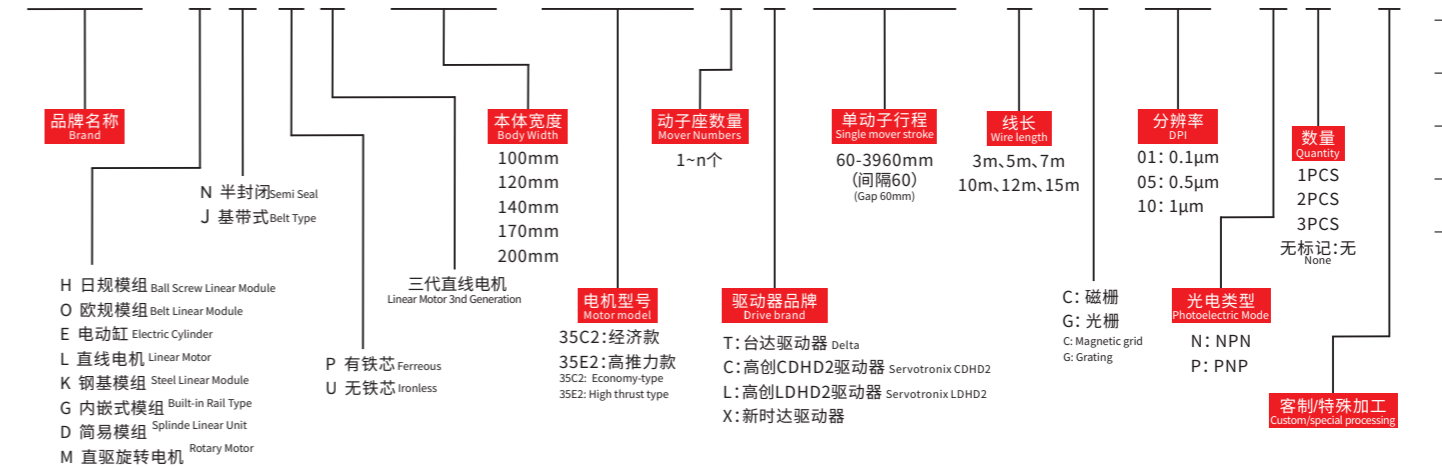


结构示意图 Structure diagram



型号表达方式 Ordering method

TPA-LNP3-120-35C2-1L-L720-3-C-05-N3-F



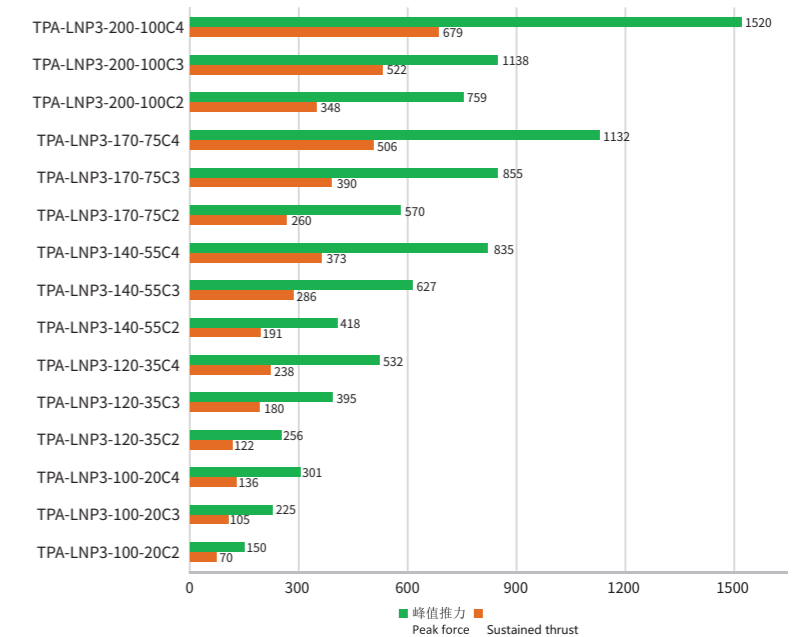
系列 Series	动子系列 Mover Model			定子系列 Stator Model		
TPA-LNP3-100	PQ20-C2	PQ20-C3	PQ20-C4	PQ20-L240	PQ20-L180	PQ20-L120
TPA-LNP3-120	PQ35-C2	PQ35-C3	PQ35-C4	PQ35-L240	PQ35-L180	PQ35-L120
TPA-LNP3-140	PQ55-C2	PQ55-C3	PQ55-C4	PQ55-L240	PQ55-L180	PQ55-L120
TPA-LNP3-170	PQ75-C2	PQ75-C3	PQ75-C4	PQ75-L240	PQ75-L180	PQ75-L120
TPA-LNP3-200	PQ100-C2	PQ100-C3	PQ100-C4	PQ100-L240	PQ100-L180	PQ100-L120

三代直线电机的优势:

- 扁平化: 组合高度相比一代更低, 重心更稳。
  - 防异物: 防护物品掉落内部结构, 减少异物掉落电机内部造成的电机损伤和飞车。
  - 易安装: 无需拆卸工件, 外部锁固螺丝即可完成安装。
  - 大推力: 对比二代, 同宽幅下, 推力更大。
  - 高刚性: 优化结构设计, 模组本身刚性提升, 可做横梁应用。
  - 重量轻: 本体重量轻, 多轴搭建降低下轴负担。
- Advantages of linear motor module II:
- Flattening: Compared with the 1st generation, height is lower and gravity is more stable.
  - Protection: protective items fall into the internal structure to prevent motor damage and derailment.
  - Easy to install: installation can be completed by locking the screws on the outside.
  - High thrust: Compared with the second generation, the thrust is greater under the same width.
  - High rigidity: optimized structural design, increased rigidity and it can be used as a beam.
  - Light weight: the main body is light, reduces the burden on the lower axis of multi-axis construction.

直线电机模组参数表 Parameter list of linear motor module

型号 Model	持续推力 Sustained thrust(N)	峰值推力 Peak force(N)	行程 Stroke(mm)
TPA-LNP3-100-20C2	70	150	60-3960
TPA-LNP3-100-20C3	105	225	60-3960
TPA-LNP3-100-20C4	136	301	60-3960
TPA-LNP3-120-35C2	122	265	60-3960
TPA-LNP3-120-35C3	180	395	60-3960
TPA-LNP3-120-35C4	238	532	60-3960
TPA-LNP3-140-55C2	191	418	60-3960
TPA-LNP3-140-55C3	286	627	60-3960
TPA-LNP3-140-55C4	373	835	60-3960
TPA-LNP3-170-75C2	260	570	60-3960
TPA-LNP3-170-75C3	390	855	60-3960
TPA-LNP3-170-75C4	506	1132	60-3960
TPA-LNP3-200-100C2	348	759	60-3960
TPA-LNP3-200-100C3	522	1138	60-3960
TPA-LNP3-200-100C4	679	1520	60-3960







重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **15kg**

峰值推力  
Peak thrust **150N**

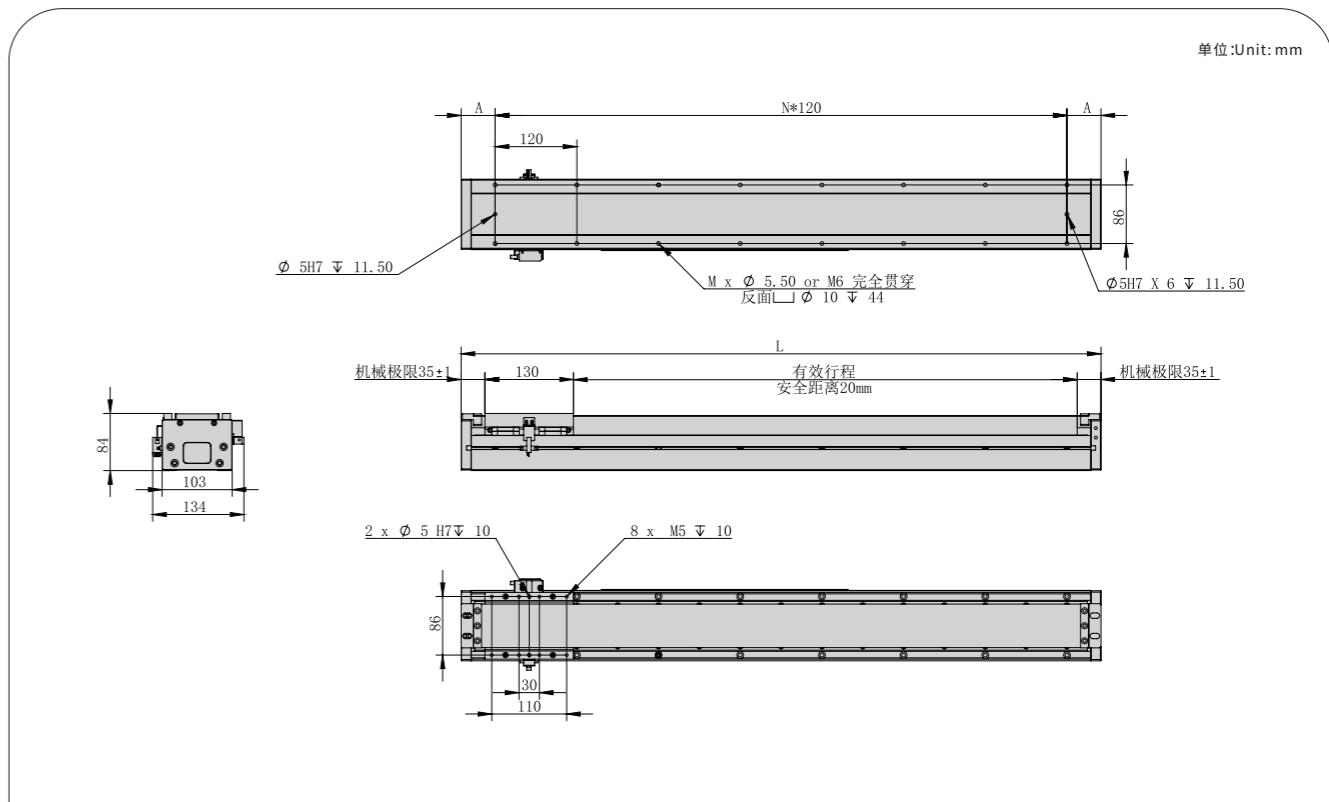
持续推力  
Sustained thrust **70N**

TPA-LNP3-100-20C2--150N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-100-20C2		
持续推力 Rated thrust(N)			70		
峰值推力 Peak thrust(N)			150		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			15		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-100-20C2--150N直线电机  
TPA-LNP3-100-20C2--150N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	280	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2920	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	28	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **25kg**

峰值推力  
Peak thrust **225N**

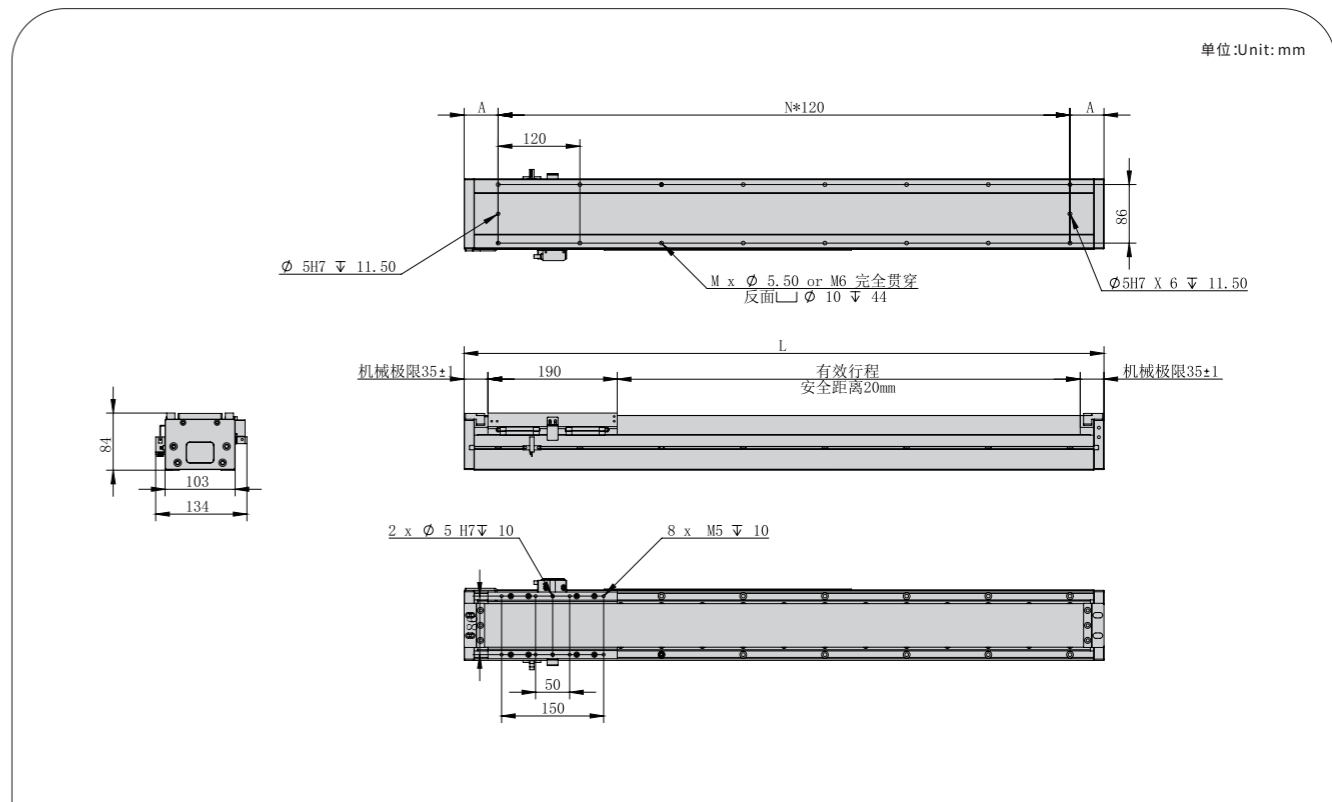
持续推力  
Sustained thrust **105N**

TPA-LNP3-100-20C3--225N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-100-20C3		
持续推力 Rated thrust(N)			105		
峰值推力 Peak thrust(N)			225		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			25		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-100-20C3--225N直线电机  
TPA-LNP3-100-20C3--225N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39



重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 35kg

峰值推力  
Peak thrust 301N

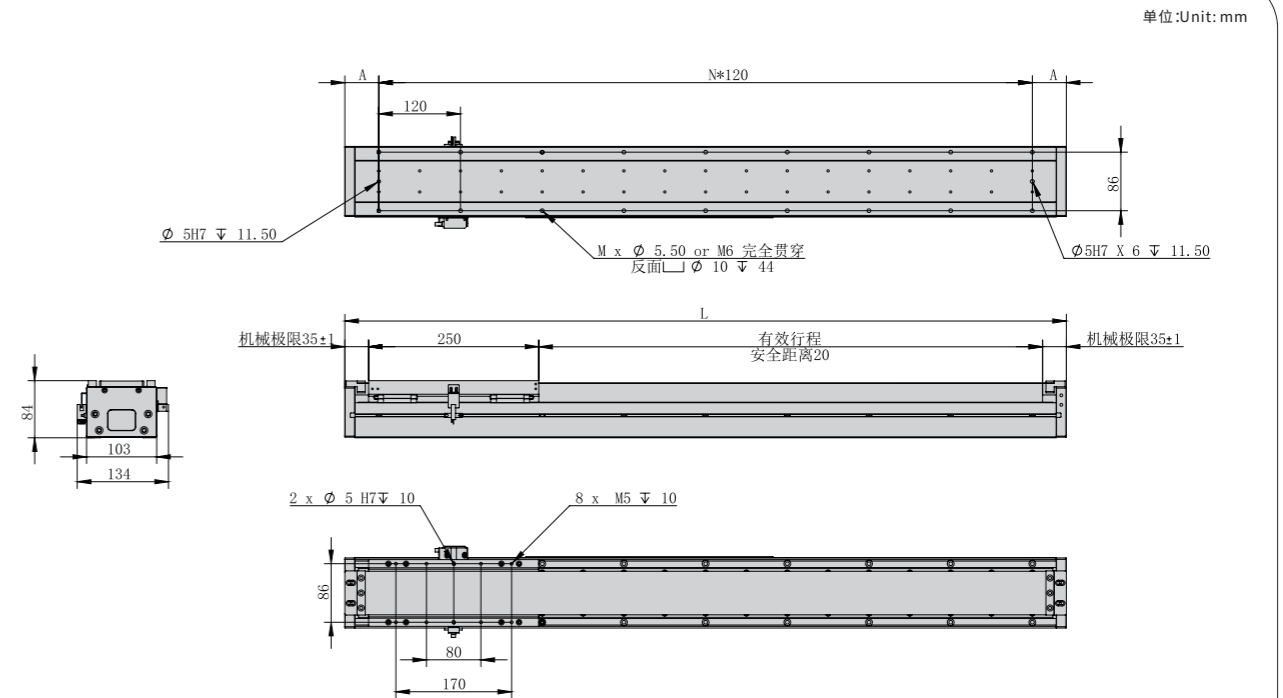
持续推力  
Sustained thrust 136N

TPA-LNP3-100-20C4--301N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-100-20C4		
持续推力 Rated thrust(N)			136		
峰值推力 Peak thrust(N)			301		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			35		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP3-100-20C4--301N直线电机 TPA-LNP3-100-20C4--301N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	2	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920	2980
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28	28.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240	4300
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5



此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程 Max Stroke 3960mm

最大负载 Max Load 20kg

峰值推力 Peak thrust 265N

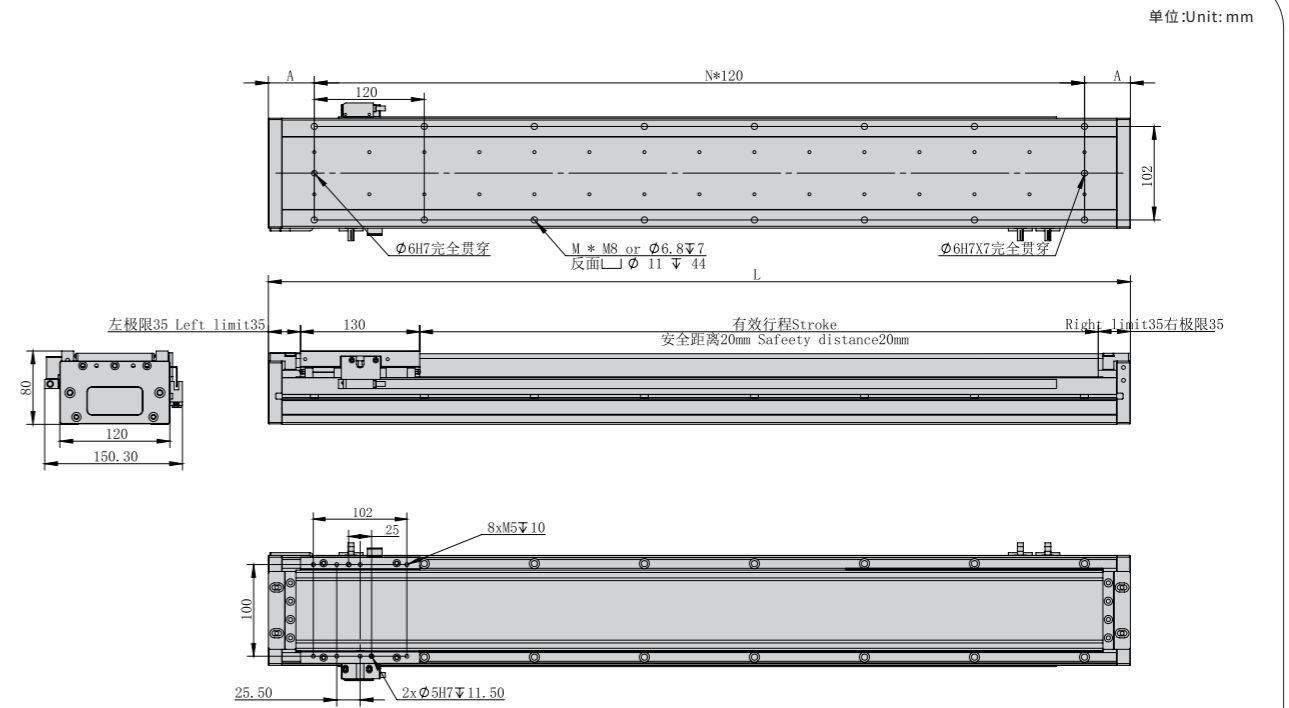
持续推力 Sustained thrust 122N

TPA-LNP3-120-35C2--265N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-120-35C2		
持续推力 Rated thrust(N)			122		
峰值推力 Peak thrust(N)			265		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			20		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP3-120-35C2--265N直线电机 TPA-LNP3-120-35C2--265N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	280	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2920	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39



重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 40kg

峰值推力  
Peak thrust 395N

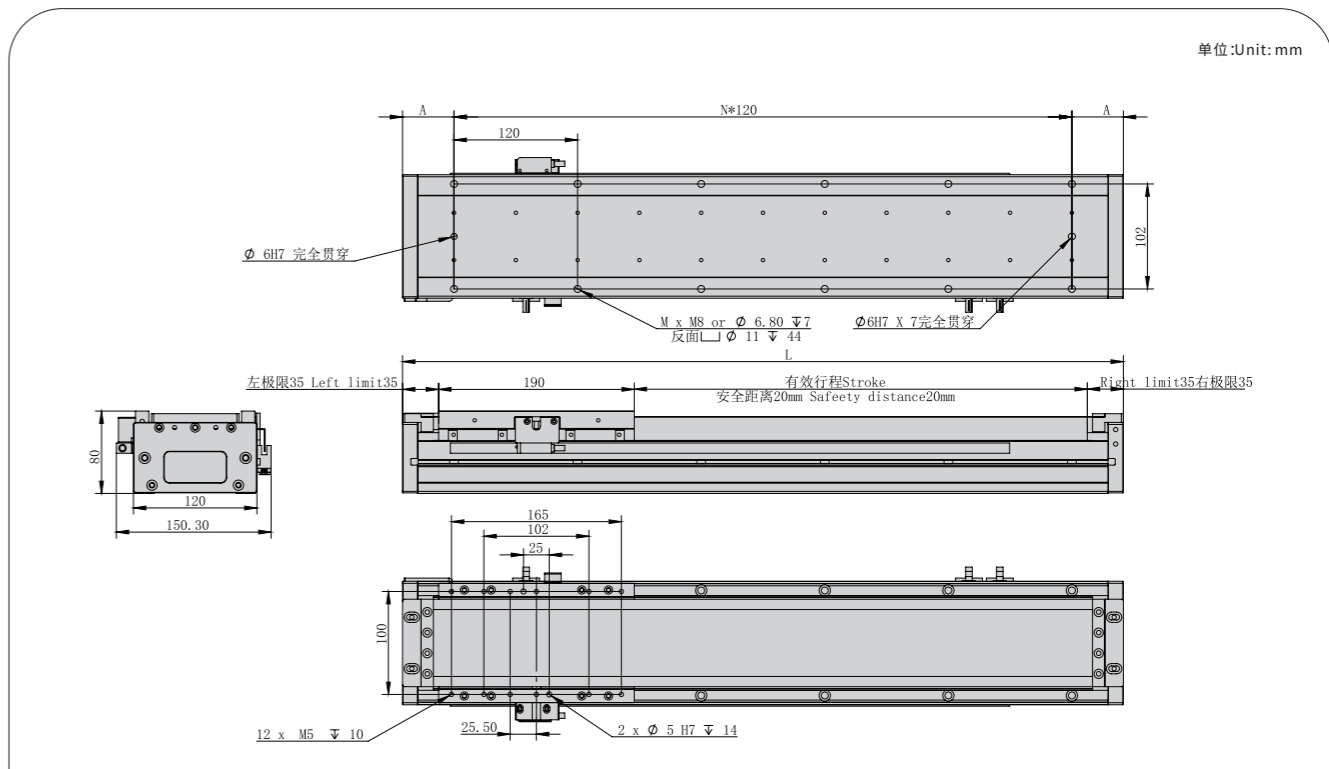
持续推力  
Sustained thrust 180N

TPA-LNP3-120-35C3--395N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-120-35C3		
持续推力 Rated thrust(N)			180		
峰值推力 Peak thrust(N)			395		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			40		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-120-35C3--395N直线电机  
TPA-LNP3-120-35C3--395N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28	28.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **60kg**

峰值推力  
Peak thrust **532N**

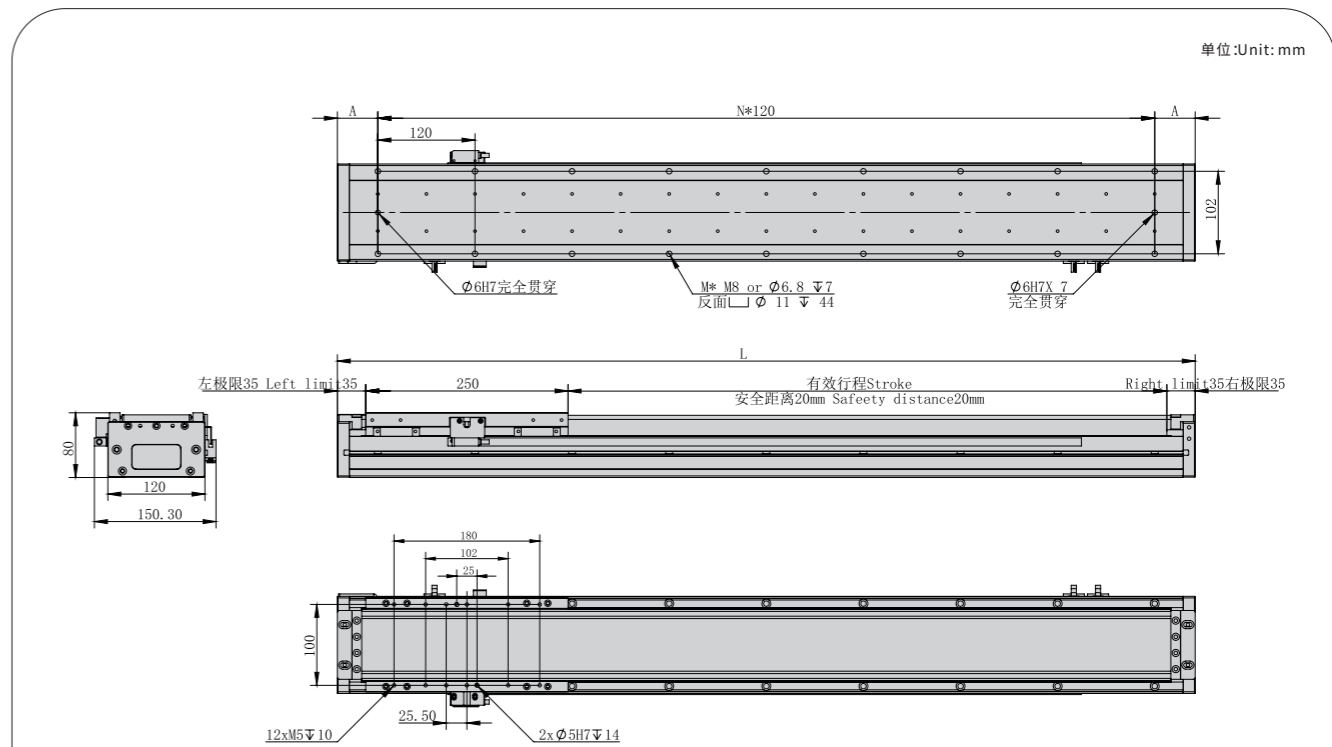
持续推力  
Sustained thrust **238N**

TPA-LNP3-120-35C4--532N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-120-35C4		
持续推力 Rated thrust(N)			238		
峰值推力 Peak thrust(N)			532		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			60		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-120-35C4--532N直线电机  
TPA-LNP3-120-35C4--532N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	2	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920	2980
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28	28.5	29

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240	4300
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5	40



重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 50kg

峰值推力  
Peak thrust 418N

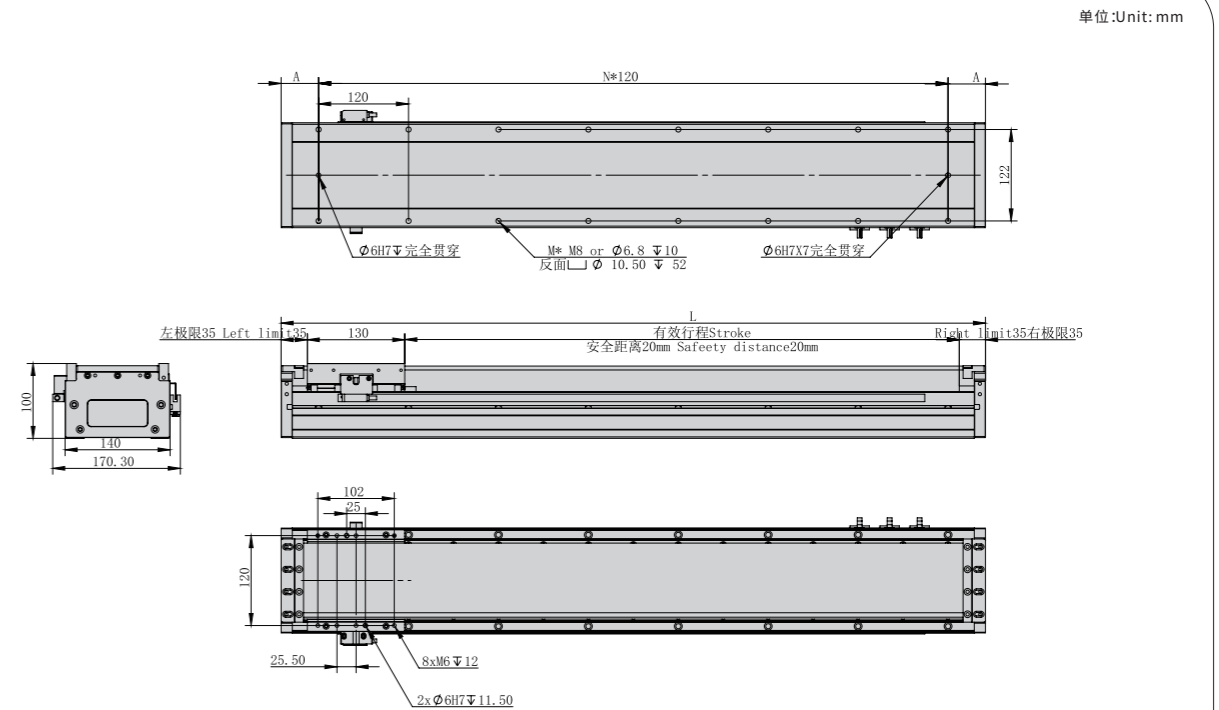
持续推力  
Sustained thrust 191N

TPA-LNP3-140-55C2--418N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-140-55C2		
持续推力 Rated thrust(N)			191		
峰值推力 Peak thrust(N)			418		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			50		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-140-55C2--418N直线电机  
TPA-LNP3-140-55C2--418N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	280	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2920	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **80kg**

峰值推力  
Peak thrust **627N**

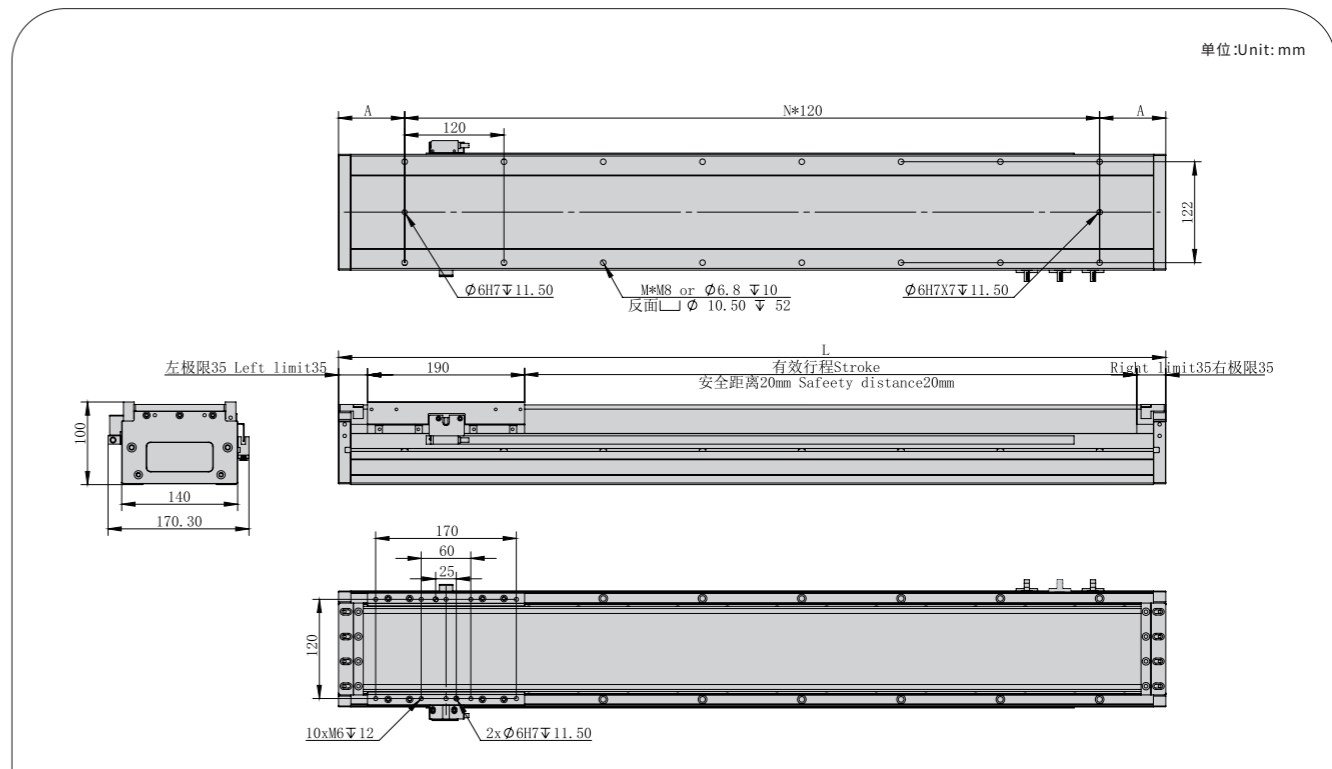
持续推力  
Sustained thrust **286N**

TPA-LNP3-140-55C3--627N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-140-55C3		
持续推力 Rated thrust(N)			286		
峰值推力 Peak thrust(N)			627		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			80		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-140-55C3--627N直线电机  
TPA-LNP3-140-55C3--627N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data





重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **100kg**

峰值推力  
Peak thrust **835N**

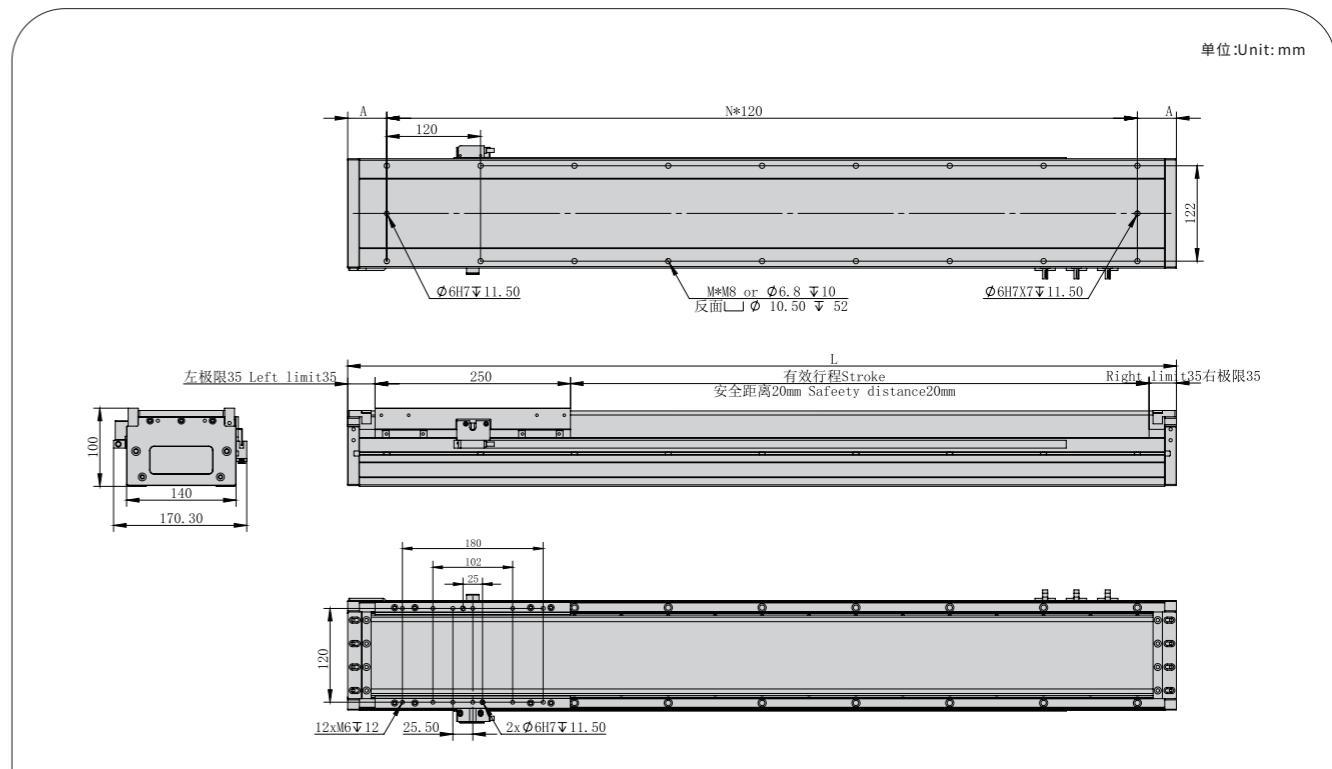
持续推力  
Sustained thrust **373N**

TPA-LNP3-140-55C4--835N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-140-55C4		
持续推力 Rated thrust(N)			373		
峰值推力 Peak thrust(N)			835		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			100		
最高速度 Max speed (m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load (m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-140-55C4--835N直线电机  
TPA-LNP3-140-55C4--835N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	2	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920	2980
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240	4300
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data



重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 70kg

峰值推力  
Peak thrust 570N

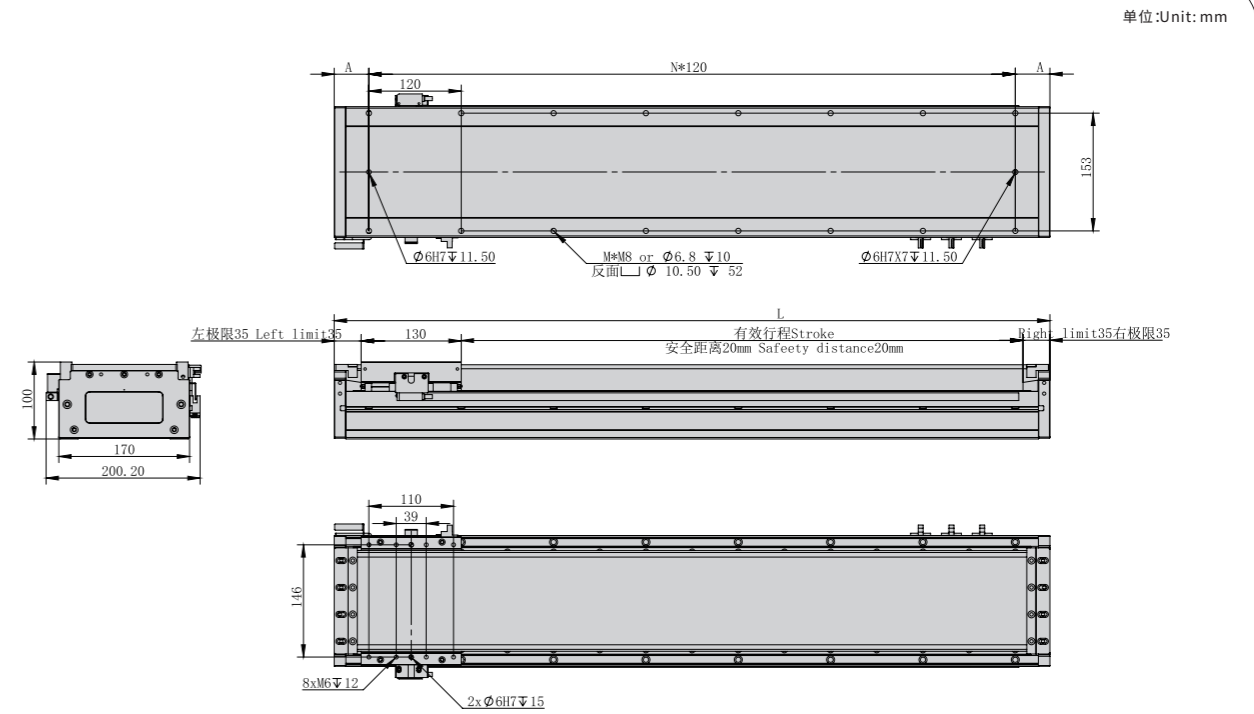
持续推力  
Sustained thrust 260N

TPA-LNP3-170-75C2--570N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-170-75C2		
持续推力 Rated thrust(N)			260		
峰值推力 Peak thrust(N)			570		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			70		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-170-75C2--570N直线电机  
TPA-LNP3-170-75C3--570N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	280	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	9	10.2	11.4	12.6	13.8	15	16.2	17.4	18.6	19.8	21	22.2	23.4	24.6	25.8	27	28.2	29.4	30.6	31.8	33	34.2

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	18	18	19	19	20	20	21	21	22	22	23	23
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	35.4	36.6	37.8	39	40.2	41.4	42.6	43.8	45	46.2	47.4	48.6	49.8	51	52.2	53.4	54.6	55.8	57	58.2	59.4	60.6

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2920	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	61.8	63	64.2	65.4	66.6	67.8	69	70.2	71.4	72.6	73.8	75	76.2	77.4	78.6	79.8	81	82.2	83.4	84.6	85.8	87



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **100kg**

峰值推力  
Peak thrust **855N**

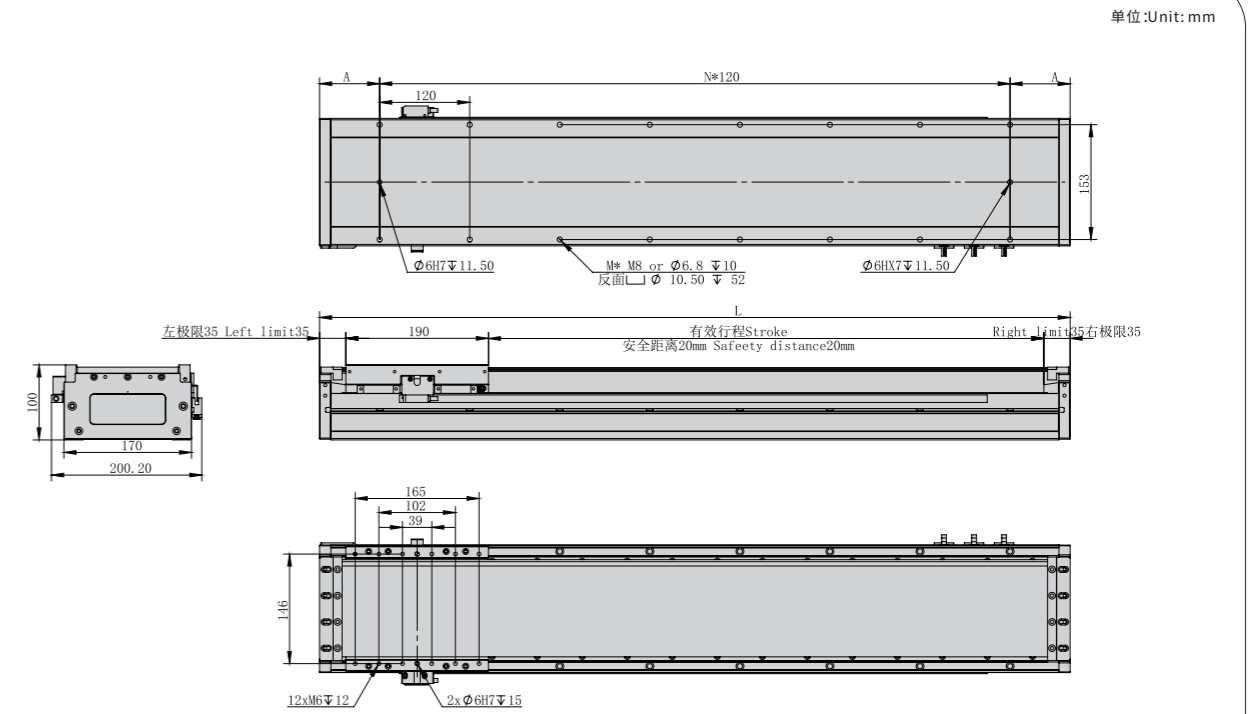
持续推力  
Sustained thrust **390N**

TPA-LNP3-170-75C3--855N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-170-75C3		
持续推力 Rated thrust(N)			390		
峰值推力 Peak thrust(N)			855		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			100		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-170-75C3--855N直线电机  
TPA-LNP3-170-75C3--855N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	10	11.2	12.4	13.6	14.8	16	17.2	18.4	19.6	20.8	22	23.2	24.4	25.6	26.8	28	29.2	30.4	31.6	32.8	34	35.2

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	36.4	37.6	38.8	40	41.2	42.4	43.6	44.8	46	47.2	48.4	49.6	50.8	52	53.2	54.4	55.6	56.8	58	59.2	60.4	61.6

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	62.8	64	65.2	66.4	67.6	68.8	70	71.2	72.4	73.6	74.8	76	77.2	78.4	79.6	80.8	82	83.2	84.4	85.6	86.8	88



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **150kg**

峰值推力  
Peak thrust **1132N**

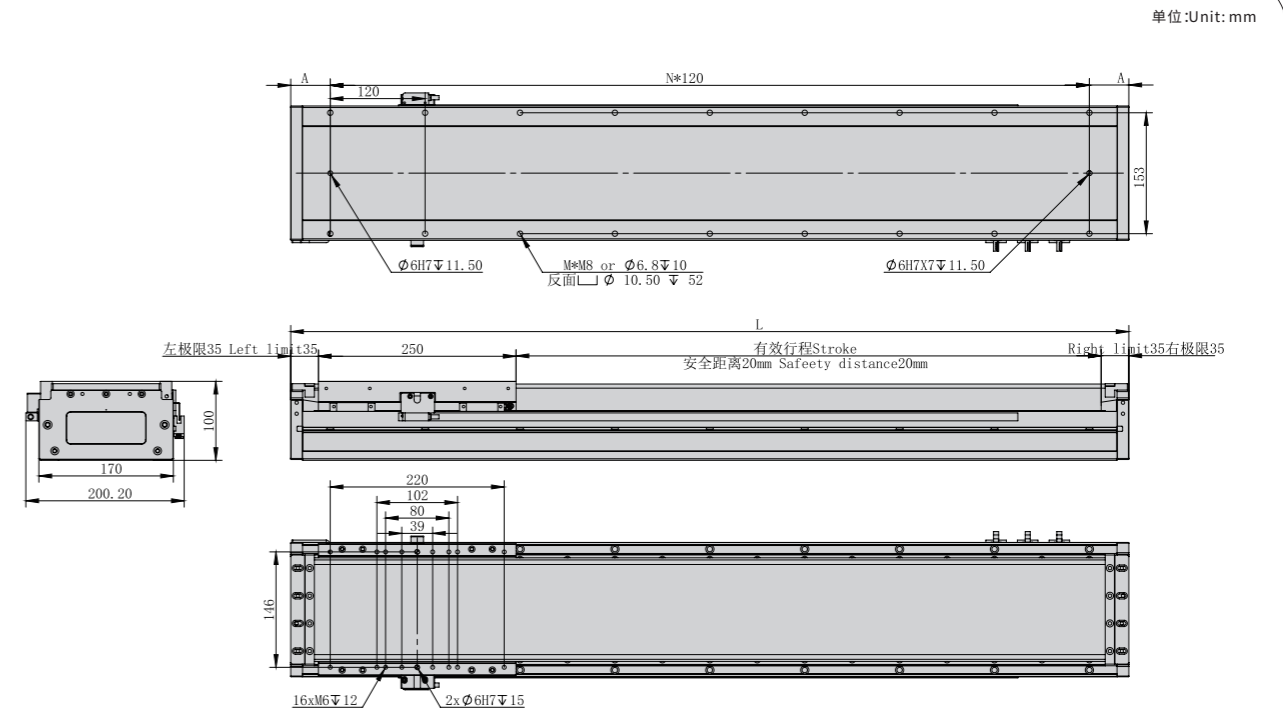
持续推力  
Sustained thrust **506N**

TPA-LNP3-170-75C4--1132N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-170-75C4		
持续推力 Rated thrust(N)			506		
峰值推力 Peak thrust(N)			1132		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			150		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP3-170-75C4-1132N直线电机 TPA-LNP3-170-75C4--1132N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	2	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	11.5	12.7	13.9	15.1	16.3	17.5	18.7	19.9	21.1	22.3	23.5	24.7	25.9	27.1	28.3	29.5	30.7	31.9	33.1	34.3	35.5	36.7

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920	2980
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	37.9	39.1	40.3	41.5	42.7	43.9	45.1	46.3	47.5	48.7	49.9	51.1	52.3	53.5	54.7	55.9	57.1	58.3	59.5	60.7	61.9	63.1

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240	4300
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	64.3	65.5	66.7	67.9	69.1	70.3	71.5	72.7	73.9	75.1	76.3	77.5	78.7	79.9	81.1	82.3	83.5	84.7	85.9	87.1	88.3	89.5

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **80kg**

峰值推力  
Peak thrust **759N**

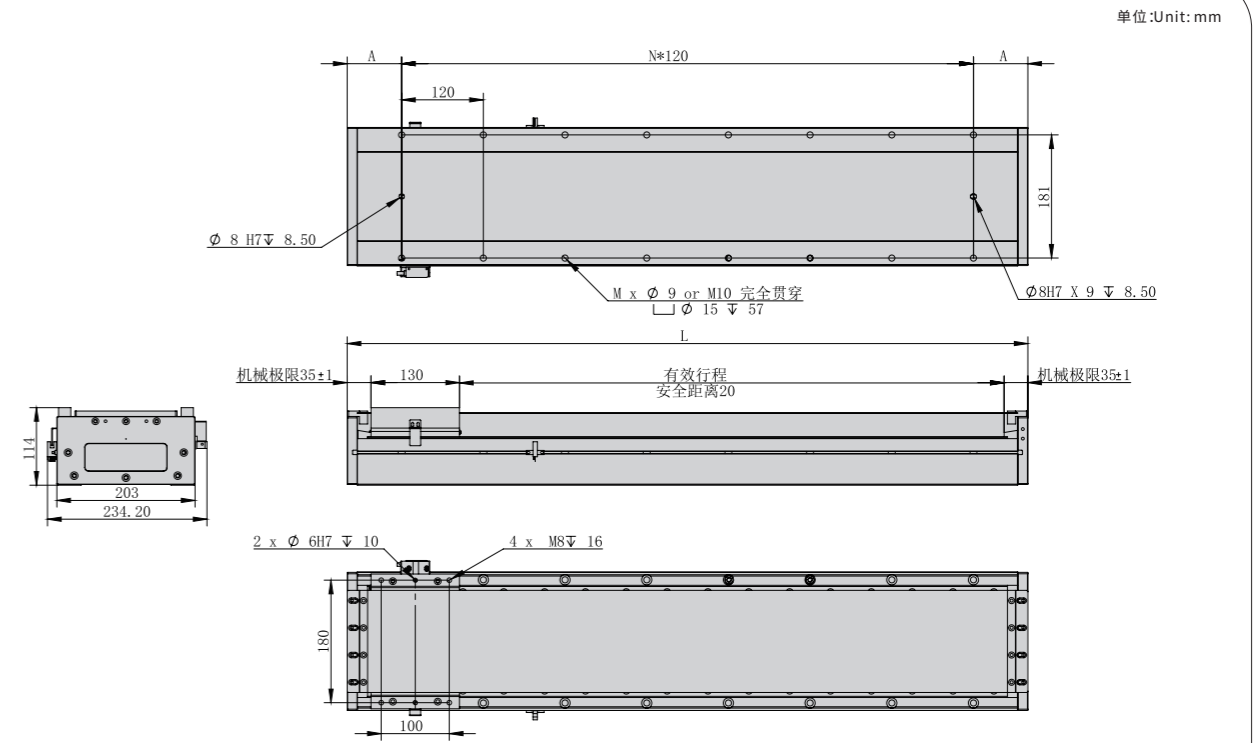
持续推力  
Sustained thrust **348N**

TPA-LNP3-200-100C2--759N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-200-100C2		
持续推力 Rated thrust(N)			348		
峰值推力 Peak thrust(N)			759		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			80		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP3-200-100C2-759N直线电机 TPA-LNP3-200-100C2--759N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	280	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	14	15.5	17	18.5	20	21.5	23	24.5	26	27.5	29	30.5	32	33.5	35	36.5	38	39.5	41	42.5	44	45.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	47	48.5	50	51.5	53	54.5	56	57.5	59	60.5	62	63.5	65	66.5	68	69.5	71	72.5	74	75.5	77	78.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2920	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	80	81.5	83	84.5	86	87.5	89	90.5	92	93.5	95	96.5	98	99.5	101	102.5	104	105.5	107	108.5	110	111.5



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **120kg**

峰值推力  
Peak thrust **1138N**

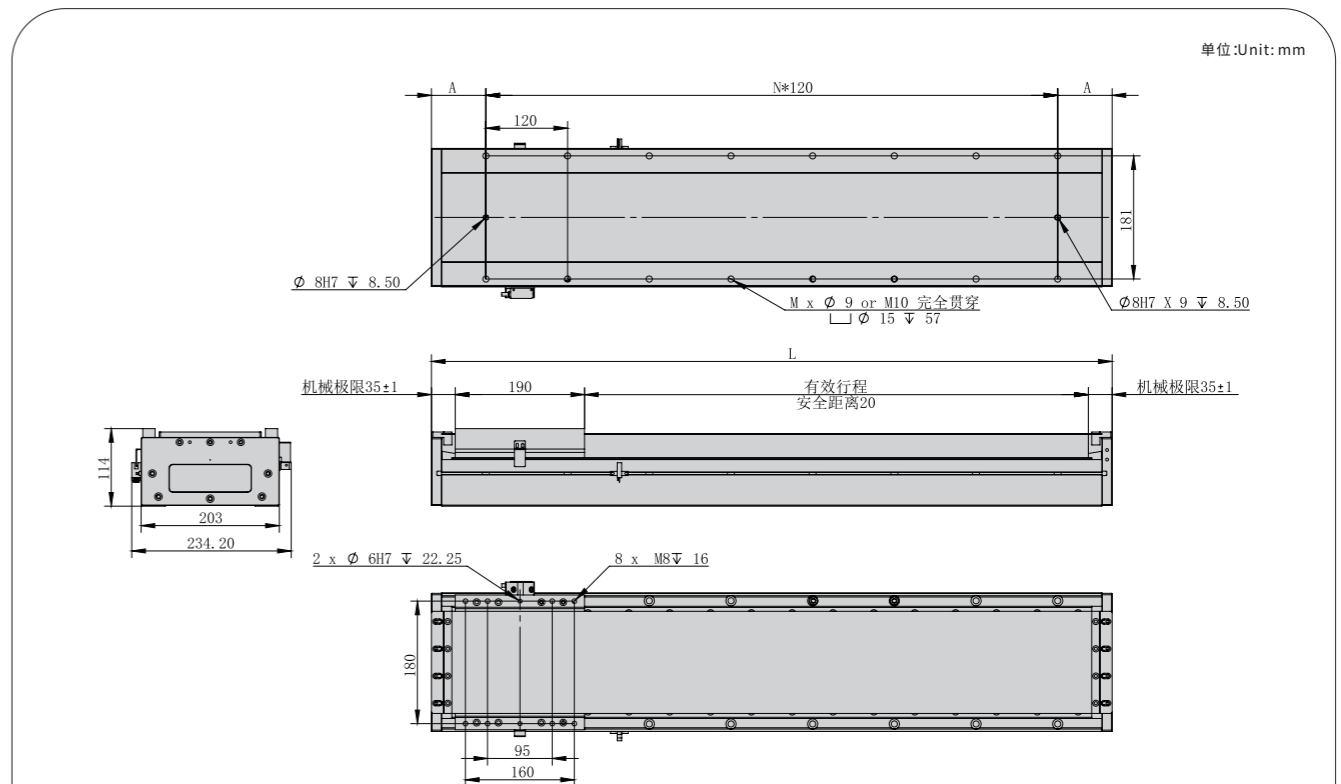
持续推力  
Sustained thrust **522N**

TPA-LNP3-200-100C3--1138N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-200-100C3		
持续推力 Rated thrust(N)			522		
峰值推力 Peak thrust(N)			1138		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			120		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-200-100C3-1138N直线电机  
TPA-LNP3-200-100C3--1138N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	340	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	16	17.5	19	20.5	22	23.5	25	26.5	28	29.5	31	32.5	34	35.5	37	38.5	40	41.5	43	44.5	46	47.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	49	50.5	52	53.5	55	56.5	58	59.5	61	62.5	64	65.5	67	68.5	70	71.5	73	74.5	76	77.5	79	80.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2980	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34
A	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80
KG	82	83.5	85	86.5	88	89.5	91	92.5	94	95.5	97	98.5	100	101.5	103	104.5	106	107.5	109	110.5	112	113.5



此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程 Max Stroke 3960mm

最大负载 Max Load 160kg

峰值推力 Peak thrust 1520N

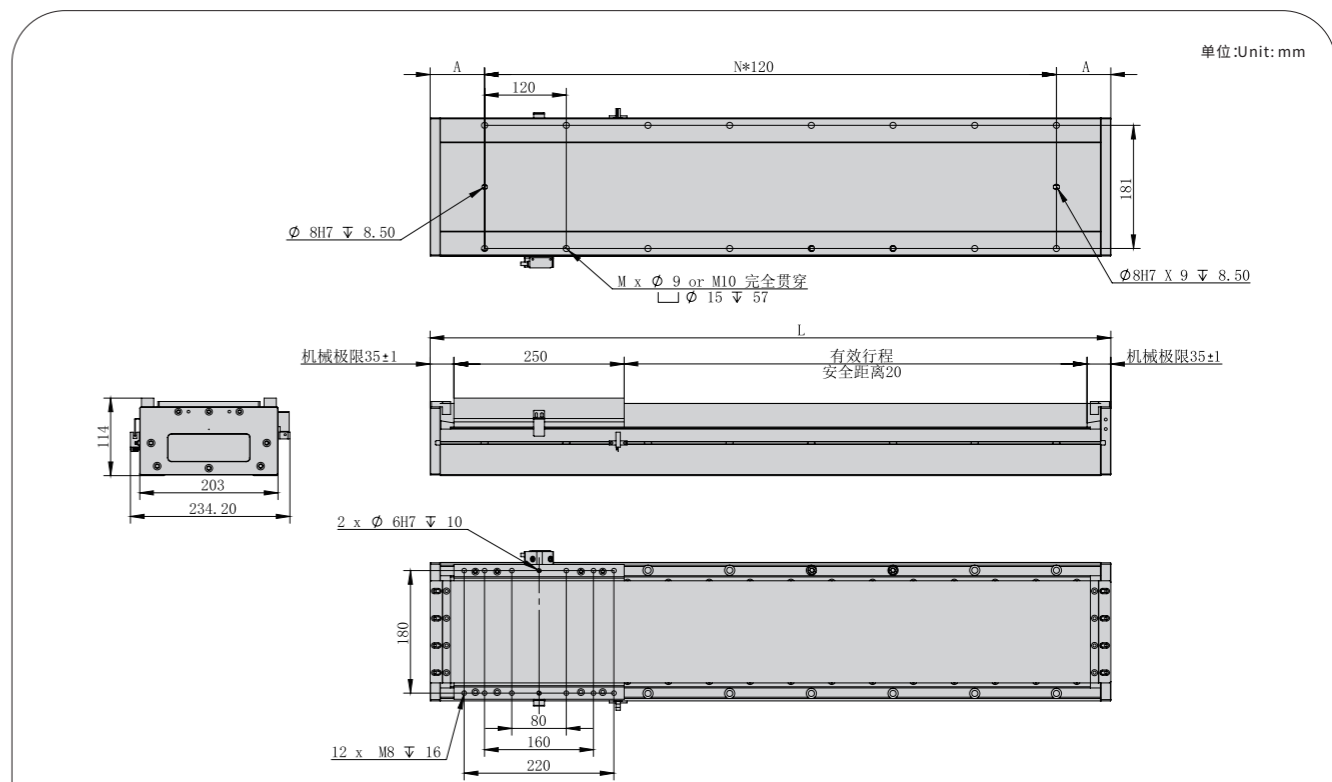
持续推力 Sustained thrust 679N

TPA-LNP3-200-100C4--1520N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP3-200-100C4		
持续推力 Rated thrust(N)			679		
峰值推力 Peak thrust(N)			1520		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			160		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP3-200-100C4-1520N直线电机  
TPA-LNP3-200-100C4--1520N Linear motor



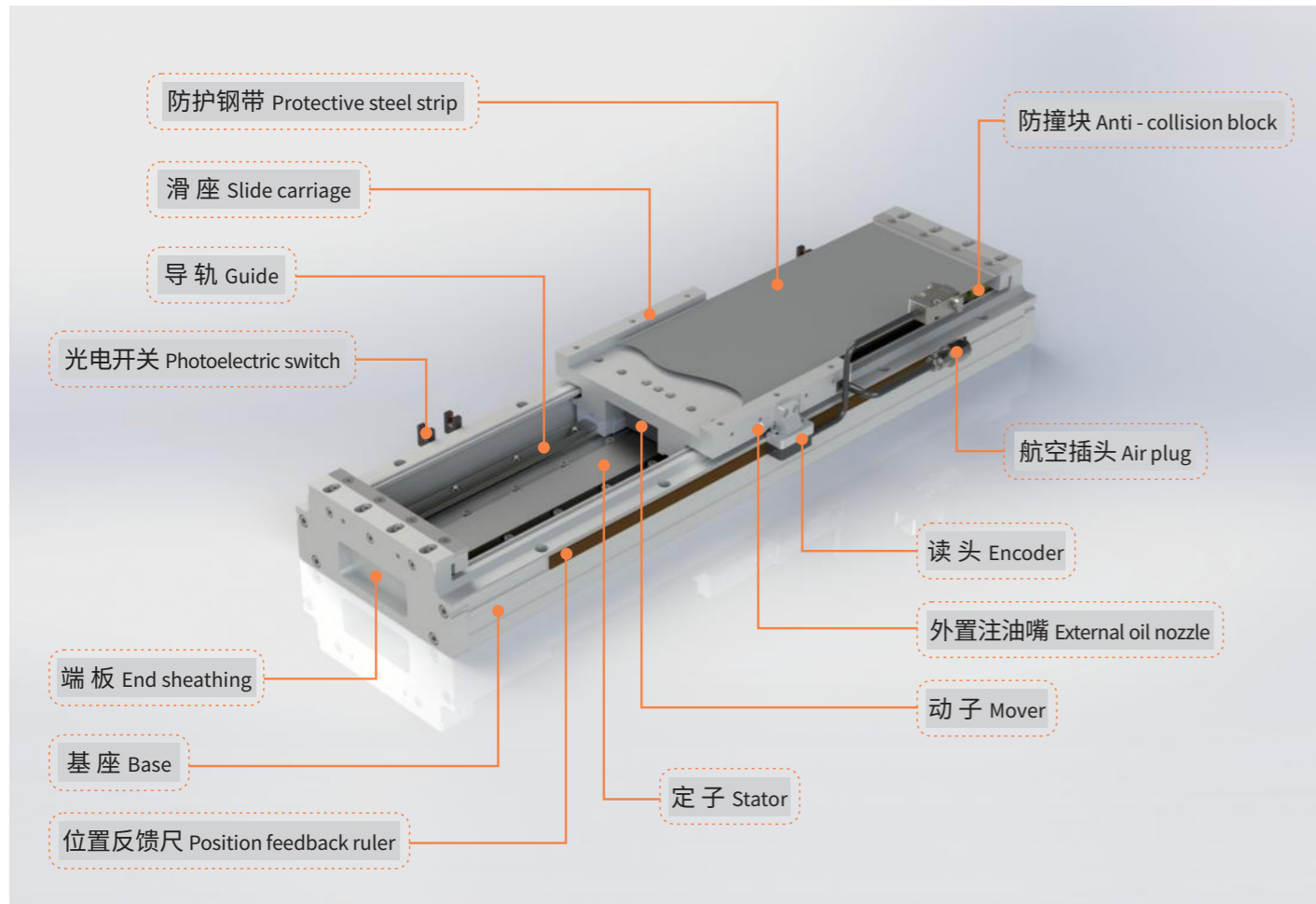
\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	400	460	520	580	640	700	760	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	2	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	18	19.5	21	22.5	24	25.5	27	28.5	30	31.5	33	34.5	36	37.5	39	40.5	42	43.5	45	46.5	48	49.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260	2320	2380	2440	2500	2560	2620	2680	2740	2800	2860	2920	2980
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	51	52.5	54	55.5	57	58.5	60	61.5	63	64.5	66	67.5	69	70.5	72	73.5	75	76.5	78	79.5	81	82.5

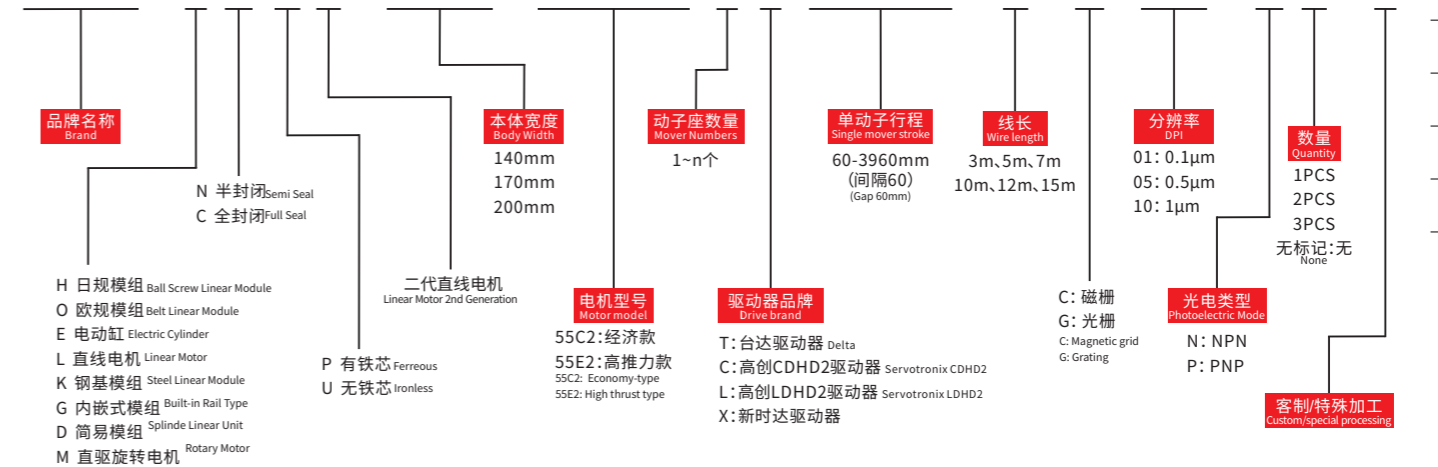
有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3040	3100	3160	3220	3280	3340	3400	3460	3520	3580	3640	3700	3760	3820	3880	3940	4000	4060	4120	4180	4240	4300
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50	80	50
KG	84	85.5	87	88.5	90	91.5	93	94.5	96	97.5	99	100.5	102	103.5	105	106.5	108	109.5	111	112.5	114	115.5

结构示意图 Structure diagram



型号表达方式 Ordering method

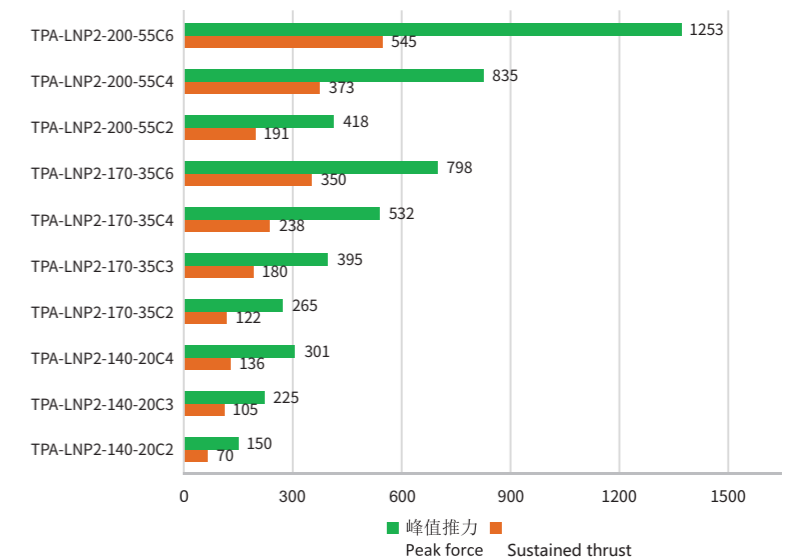
TPA-LNP2-200-55C2-1L-L600-3-C-05-N3-F



系列 Series	动子系列 Mover Model				定子系列 Stator Model		
TPA-LNP2-140	PQ20C2	PQ20C3	PQ20C4	-	PQ20-L240	PQ20-L180	PQ20-L120
TPA-LNP2-170	PQ35C2	PQ35C3	PQ35C4	PQ35C6	PQ35-L240	PQ35-L180	PQ35-L120
TPA-LNP2-200	PQ55C2	-	PQ55C4	PQ55C6	PQ55-L240	PQ55-L180	PQ55-L120

直线电机模组参数表 Parameter list of linear motor module

型号 Model	持续推力 Sustained thrust(N)	峰值推力 Peak force(N)	行程 Stroke(mm)
TPA-LNP2-140-20C2	70	150	60-3960
TPA-LNP2-140-20C3	105	225	60-3960
TPA-LNP2-140-20C4	136	301	60-3960
TPA-LNP2-170-35C2	122	265	60-3960
TPA-LNP2-170-35C3	180	395	60-3960
TPA-LNP2-170-35C4	238	532	60-3960
TPA-LNP2-170-35C6	350	798	60-3960
TPA-LNP2-200-55C2	191	418	60-3960
TPA-LNP2-200-55C4	373	835	60-3960
TPA-LNP2-200-55C6	545	1253	60-3960



二代直线电机的优势:

- 扁平化: 组合高度相比一代更低, 重心更稳。
  - 防异物: 防护物品掉落内部结构, 减少异物掉落电机内部造成的电机损伤和飞车。
  - 易安装: 无需拆卸工件, 外部锁固螺丝即可完成安装。
  - 易维护: 集中注油设计, 无需拆卸工件即可完成注油保养。
  - 高刚性: 优化结构设计, 模组本身刚性提升, 可做横梁应用。
  - 重量轻: 本体重量轻, 多轴搭建降低下轴负担。
- Advantages of linear motor module II:
- Flattening: Compared with the 1st generation, height is lower and gravity is more stable.
  - Protection: protective items fall into the internal structure to prevent motor damage and derailment.
  - Easy to install: installation can be completed by locking the screws on the outside.
  - Easy maintenance: centralized oil injection design, oil can be filled from the outside.
  - High rigidity: optimized structural design, increased rigidity and it can be used as a beam.
  - Light weight: the main body is light, reduces the burden on the lower axis of multi-axis construction.





重复精度  
Repeat Accuracy  
1μm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 30kg

峰值推力  
Peak thrust 150N

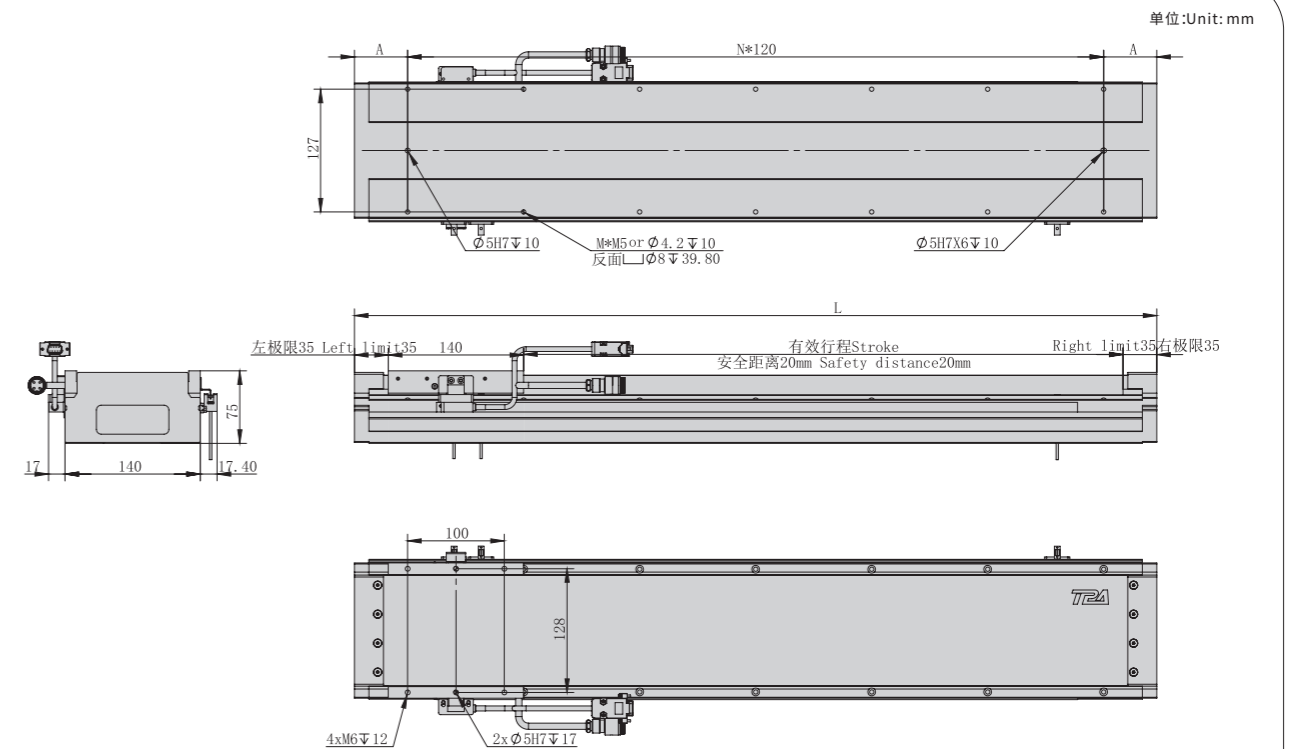
持续推力  
Sustained thrust 70N

TPA-LNP2-140-20C2--105N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-140-20C2		
持续推力 Rated thrust(N)			70		
峰值推力 Peak thrust(N)			150		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			30		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-140-20C2--150N直线电机  
TPA-LNP2-140-20C2--150N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	290	350	410	470	530	590	650	710	770	830	890	950	1010	1070	1130	1190	1250	1310	1370	1430	1490	1550
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1610	1670	1730	1790	1850	1910	1970	2030	2090	2150	2210	2270	2330	2390	2450	2510	2570	2630	2690	2750	2810	2870
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2930	2990	3050	3110	3170	3230	3290	3350	3410	3470	3530	3590	3650	3710	3770	3830	3890	3950	4010	4070	4130	4190
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data





重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 65kg

峰值推力  
Peak thrust 301N

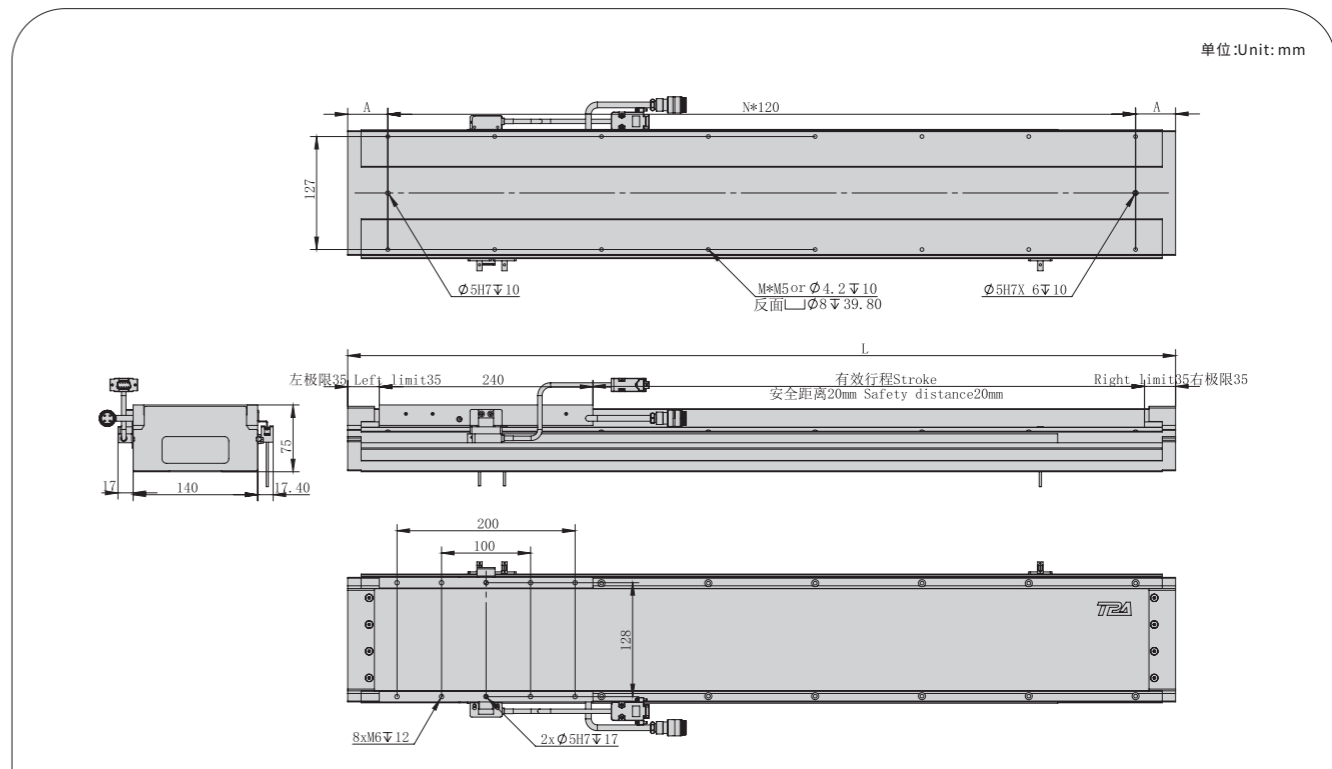
持续推力  
Sustained thrust 136N

TPA-LNP2-140-20C4--301N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-140-20C4		
持续推力 Rated thrust(N)			136		
峰值推力 Peak thrust(N)			301		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			65		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-140-20C4--301N直线电机  
TPA-LNP2-140-20C4--301N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	390	450	510	570	630	690	750	810	870	930	990	1050	1110	1170	1230	1290	1350	1410	1470	1530	1590	1650
M	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
N	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1710	1770	1830	1890	1950	2010	2070	2130	2190	2250	2310	2370	2430	2490	2550	2610	2670	2730	2790	2850	2910	2970
M	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48
N	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3030	3090	3150	3210	3270	3330	3390	3450	3510	3570	3630	3690	3750	3810	3870	3930	3990	4050	4110	4170	4230	4290
M	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70
N	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	52.5	53.5	54.5	55.5	56.5	57.5	58.5	59.5	60.5	61.5	62.5	63.5	64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5	72.5	73.5



重复精度  
Repeat Accuracy  
1µm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 40kg

峰值推力  
Peak thrust 265N

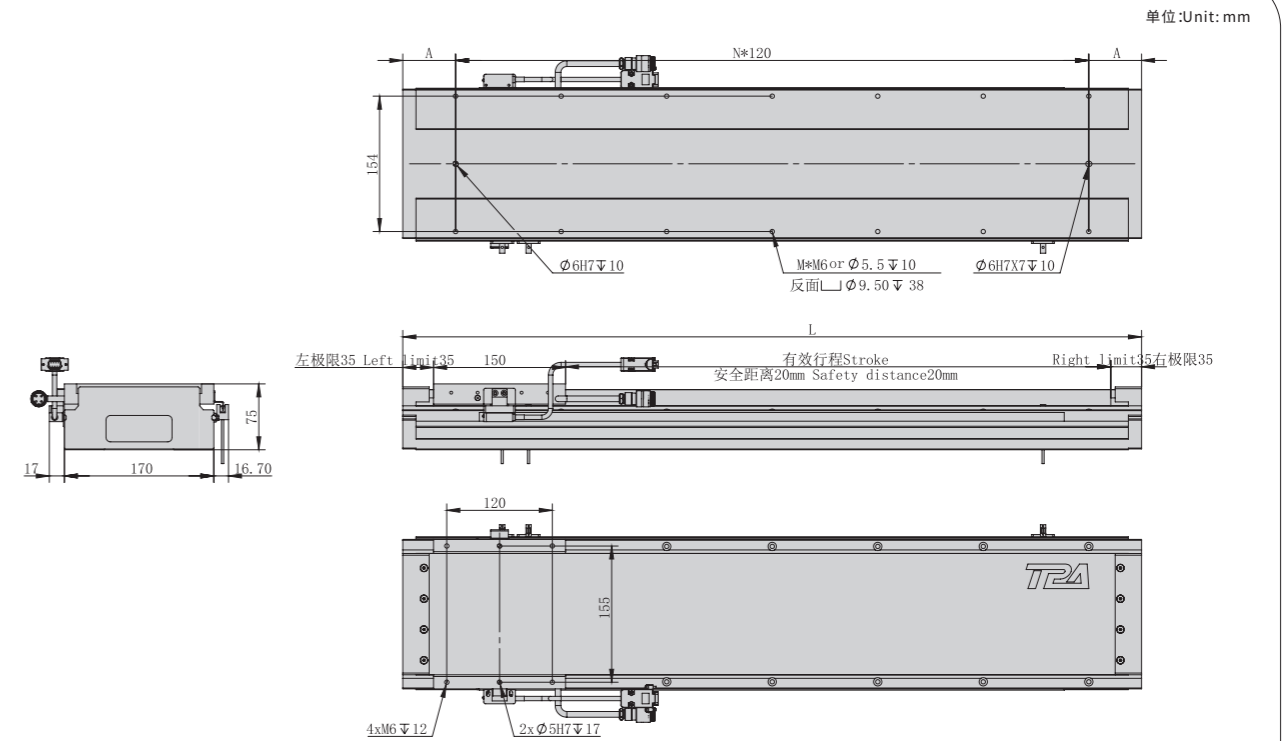
持续推力  
Sustained thrust 122N

TPA-LNP2-170-35C2--265直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-170-35C2		
持续推力 Rated thrust(N)			122		
峰值推力 Peak thrust(N)			265		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (µm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5µm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5µm	±2	±3	±5
最大负载 Max load (kg)			40		
最高速度 Max speed(m/s)	分辨率:0.5µm/1µm DPI:0.5µm/1µm		5		
	分辨率:0.1µm DPI:0.1µm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP2-170-35C2--265N直线电机 TPA-LNP2-170-35C2--265N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60
KG	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60
KG	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960	4020	4080	4140	4200
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60	90	60
KG	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data



重复精度  
Repeat Accuracy  
1μm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 3960mm

最大负载  
Max Load 55kg

峰值推力  
Peak thrust 395N

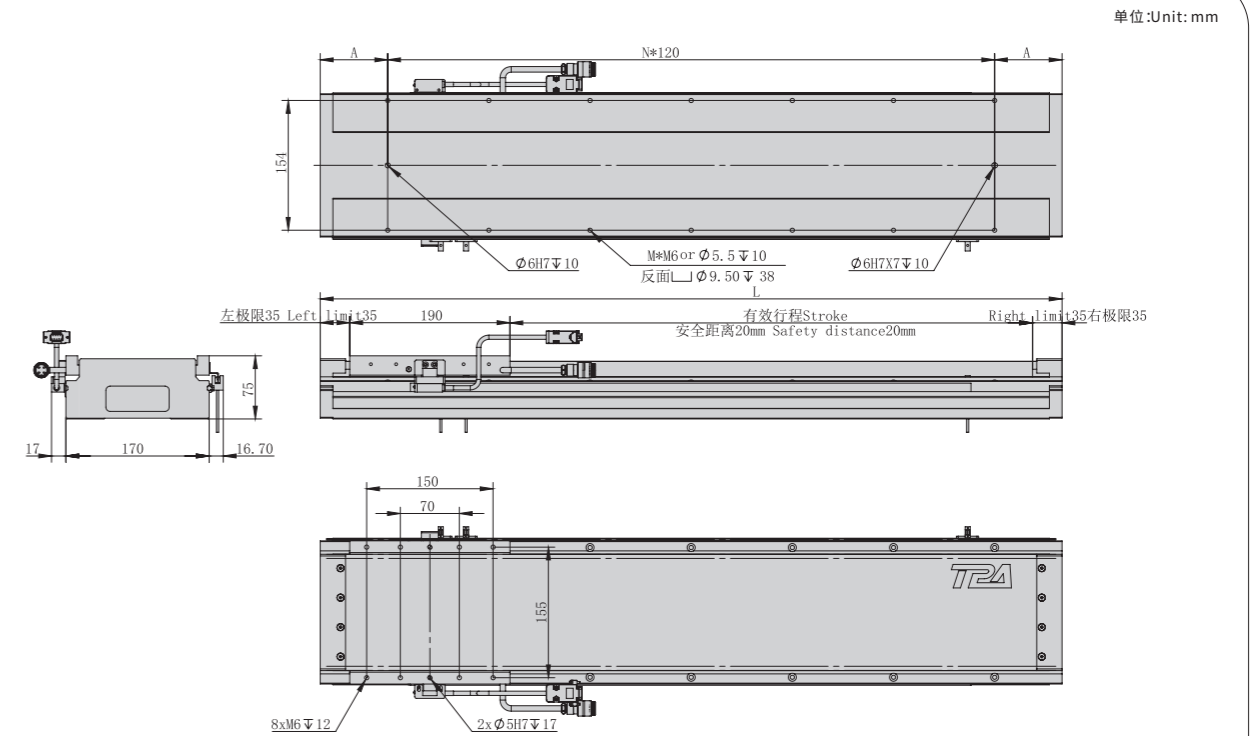
持续推力  
Sustained thrust 180N

TPA-LNP2-170-35C3--395直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-170-35C3		
持续推力 Rated thrust(N)			180		
峰值推力 Peak thrust(N)			395		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			55		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-170-35C3--395N直线电机  
TPA-LNP2-170-35C3--395N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80
KG	10	11.2	12.4	13.6	14.8	16	17.2	18.4	19.6	20.8	22	23.2	24.4	25.6	26.8	28	29.2	30.4	31.6	32.8	34	35.2

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80
KG	36.4	37.6	38.8	40	41.2	42.4	43.6	44.8	46	47.2	48.4	49.6	50.8	52	53.2	54.4	55.6	56.8	58	59.2	60.4	61.6

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960	4020	4080	4140	4200
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80	90	80
KG	62.8	64	65.2	66.4	67.6	68.8	70	71.2	72.4	73.6	74.8	76	77.2	78.4	79.6	80.8	82	83.2	84.4	85.6	86.8	88



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **75kg**

峰值推力  
Peak thrust **532N**

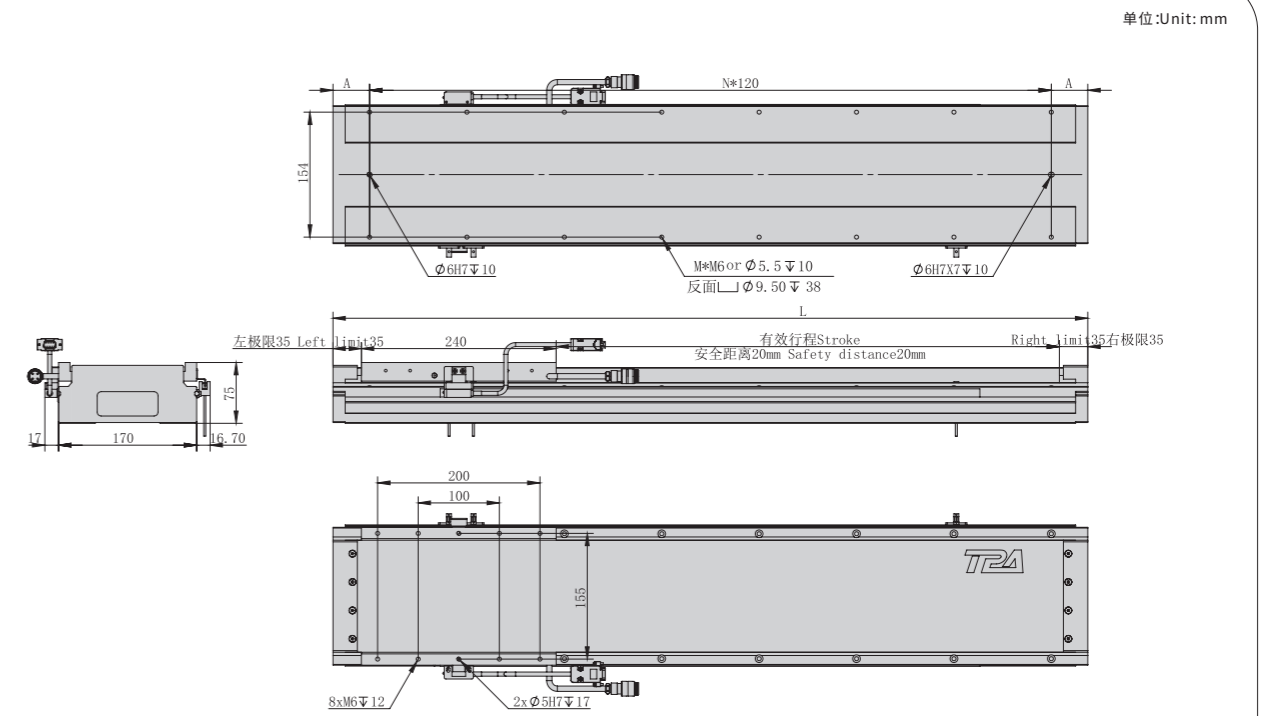
持续推力  
Sustained thrust **238N**

TPA-LNP2-170-35C4--532N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-170-35C4		
持续推力 Rated thrust(N)			238		
峰值推力 Peak thrust(N)			532		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			75		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP2-170-35C4--532N直线电机 TPA-LNP2-170-35C4--532N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	390	450	510	570	630	690	750	810	870	930	990	1050	1110	1170	1230	1290	1350	1410	1470	1530	1590	1650
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	11.5	12.7	13.9	15.1	16.3	17.5	18.7	19.9	21.1	22.3	23.5	24.7	25.9	27.1	28.3	29.5	30.7	31.9	33.1	34.3	35.5	36.7

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1710	1770	1830	1890	1950	2010	2070	2130	2190	2250	2310	2370	2430	2490	2550	2610	2670	2730	2790	2850	2910	2970
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	37.9	39.1	40.3	41.5	42.7	43.9	45.1	46.3	47.5	48.7	49.9	51.1	52.3	53.5	54.7	55.9	57.1	58.3	59.5	60.7	61.9	63.1

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3030	3090	3150	3210	3270	3330	3390	3450	3510	3570	3630	3690	3750	3810	3870	3930	3990	4050	4110	4170	4230	4290
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	64.3	65.5	66.7	67.9	69.1	70.3	71.5	72.7	73.9	75.1	76.3	77.5	78.7	79.9	81.1	82.3	83.5	84.7	85.9	87.1	88.3	89.5

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **130kg**

峰值推力  
Peak thrust **798N**

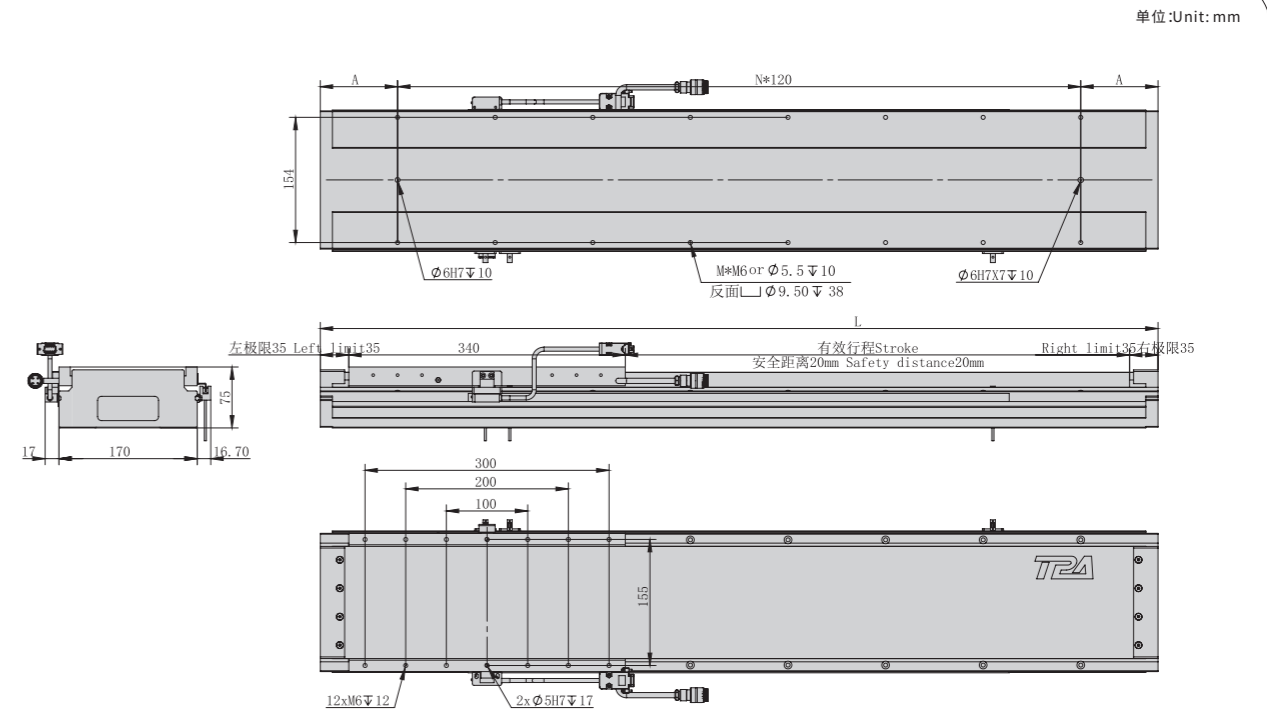
持续推力  
Sustained thrust **350N**

TPA-LNP2-170-35C6--798N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-170-35C6		
持续推力 Rated thrust(N)			350		
峰值推力 Peak thrust(N)			798		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			130		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-170-35C6--798N直线电机  
TPA-LNP2-170-35C6--798N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	490	550	610	670	730	790	850	910	970	1030	1090	1150	1210	1270	1330	1390	1450	1510	1570	1630	1690	1750
M	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28
N	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
A	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95
KG	13	14.2	15.4	16.6	17.8	19	20.2	21.4	22.6	23.8	25	26.2	27.4	28.6	29.8	31	32.2	33.4	34.6	35.8	37	38.2

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1810	1870	1930	1990	2050	2110	2170	2230	2290	2350	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070
M	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50
N	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24
A	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95
KG	39.4	40.6	41.8	43	44.2	45.4	46.6	47.8	49	50.2	51.4	52.6	53.8	55	56.2	57.4	58.6	59.8	61	62.2	63.4	64.6

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3130	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850	3910	3970	4030	4090	4150	4210	4270	4330	4390
M	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72	72
N	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35	35
A	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95	65	95
KG	65.8	67	68.2	69.4	70.6	71.8	73	74.2	75.4	76.6	77.8	79	80.2	81.4	82.6	83.8	85	86.2	87.4	88.6	89.8	91



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **40kg**

峰值推力  
Peak thrust **418N**

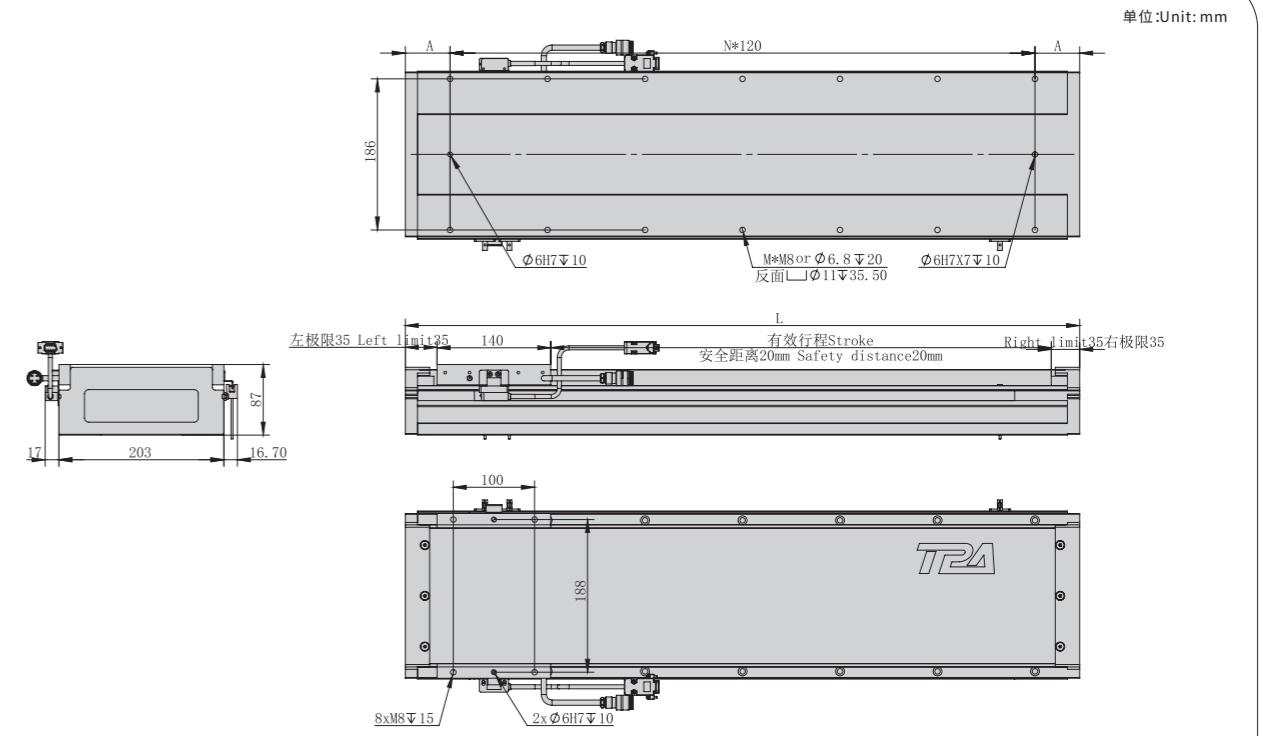
持续推力  
Sustained thrust **191N**

TPA-LNP2-200-55C2--418N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-200-55C2		
持续推力 Rated thrust(N)			191		
峰值推力 Peak thrust(N)			418		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			40		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-200-55C2--418N直线电机  
TPA-LNP2-200-55C2--418N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	290	350	410	470	530	590	650	710	770	830	890	950	1010	1070	1130	1190	1250	1310	1370	1430	1490	1550
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	11	12.5	14	15.5	17	18.5	20	21.5	23	24.5	26	27.5	29	30.5	32	33.5	35	36.5	38	39.5	41	42.5

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1610	1670	1730	1790	1850	1910	1970	2030	2090	2150	2210	2270	2330	2390	2450	2510	2570	2630	2690	2750	2810	2870
M	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48
N	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	44	45.5	47	48.5	50	51.5	53	54.5	56	57.5	59	60.5	62	63.5	65	66.5	68	69.5	71	72.5	74	75.5

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	2930	2990	3050	3110	3170	3230	3290	3350	3410	3470	3530	3590	3650	3710	3770	3830	3890	3950	4010	4070	4130	4190
M	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55	85	55
KG	77	78.5	80	81.5	83	84.5	86	87.5	89	90.5	92	93.5	95	96.5	98	99.5	101	102.5	104	105.5	107	108.5





重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **100kg**

峰值推力  
Peak thrust **835N**

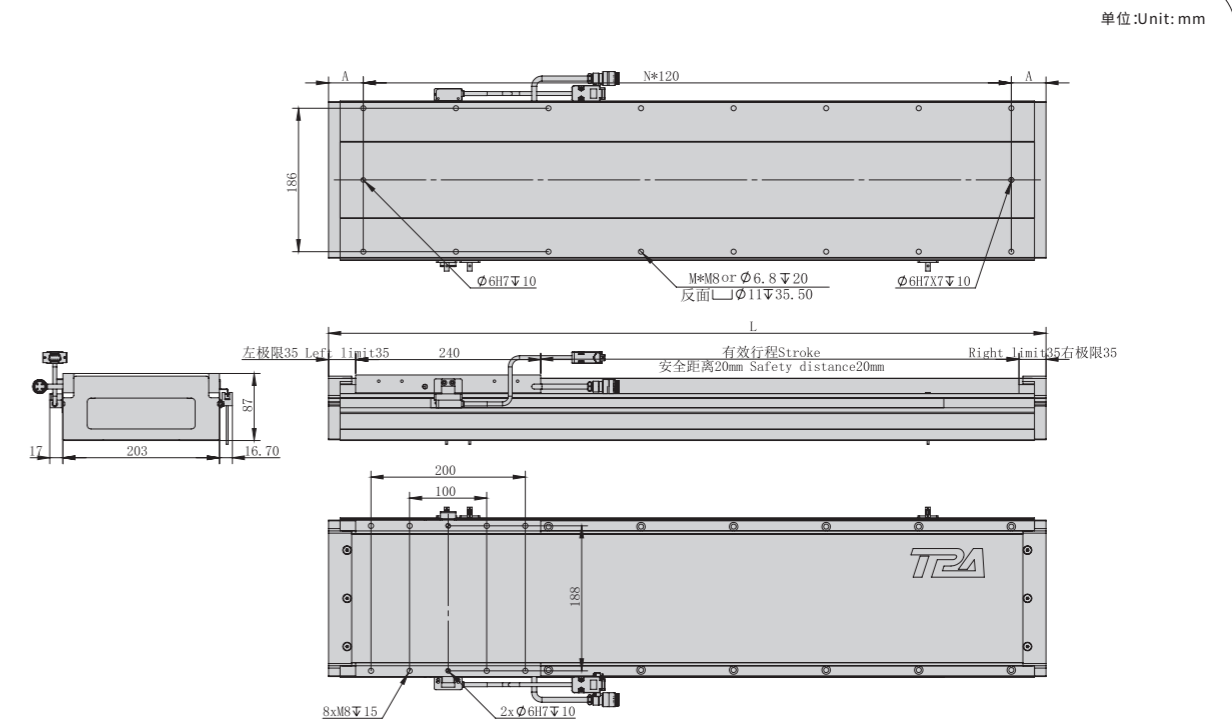
持续推力  
Sustained thrust **373N**

TPA-LNP2-200-55C4--835N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-200-55C4		
持续推力 Rated thrust(N)			373		
峰值推力 Peak thrust(N)			835		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			100		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP2-200-55C4--835N直线电机 TPA-LNP2-200-55C4--835N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	390	450	610	670	730	790	850	910	970	1030	1090	1150	1210	1270	1330	1390	1450	1510	1570	1630	1690	1750
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	12.5	14	15.5	17	18.5	20	21.5	23	24.5	26	27.5	29	30.5	32	33.5	35	36.5	38	39.5	41	42.5	44

有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1810	1870	1930	1990	2050	2110	2170	2230	2290	2350	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070
M	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50
N	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	45.5	47	48.5	50	51.5	53	54.5	56	57.5	59	60.5	62	63.5	65	66.5	68	69.5	71	72.5	74	75.5	77

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3130	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850	3910	3970	4030	4090	4150	4210	4270	4330	4390
M	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72
N	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45	75	45
KG	78.5	80	81.5	83	84.5	86	87.5	89	90.5	92	93.5	95	96.5	98	99.5	101	102.5	104	105.5	107	108.5	110



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **3960mm**

最大负载  
Max Load **180kg**

峰值推力  
Peak thrust **1253N**

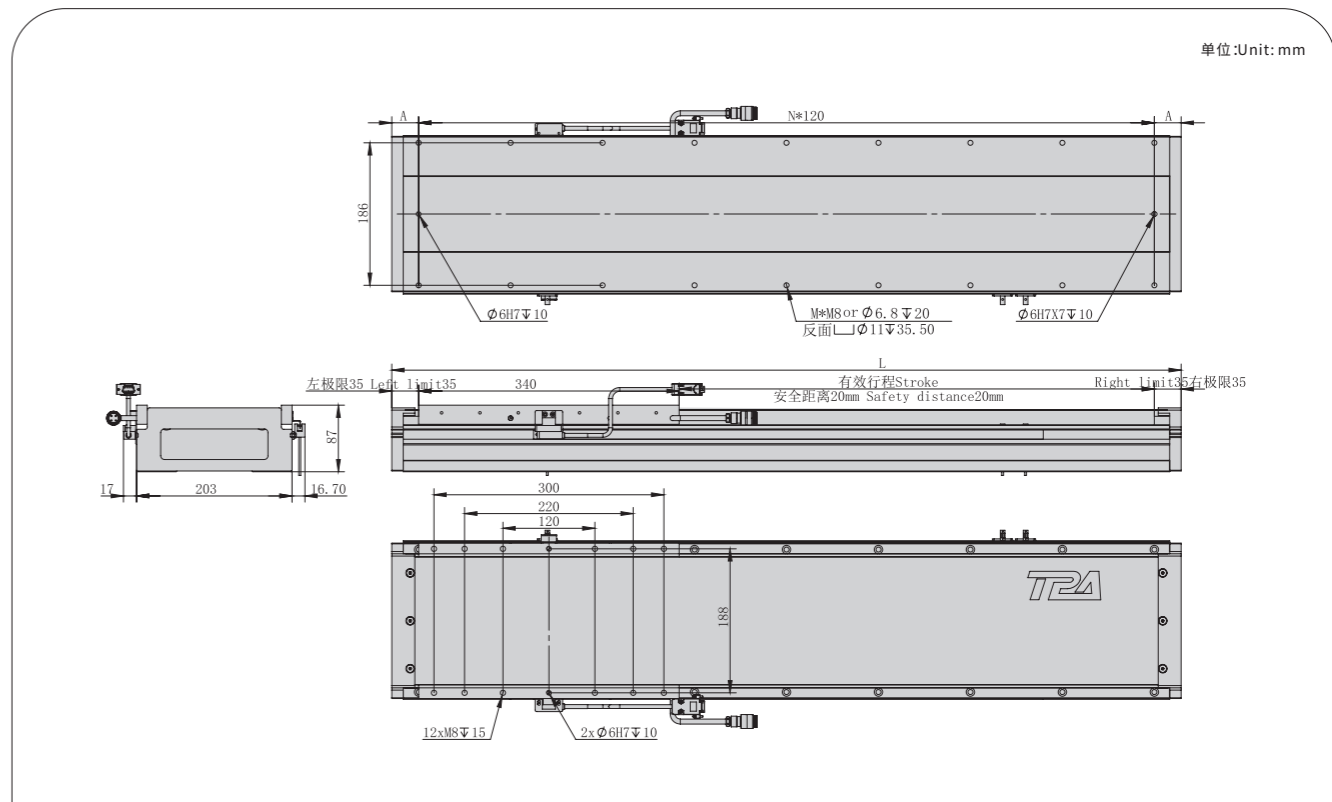
持续推力  
Sustained thrust **545N**

TPA-LNP2-200-55C6--1253N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP2-200-55C6		
持续推力 Rated thrust(N)			545		
峰值推力 Peak thrust(N)			1253		
行程 Stroke(mm)			60~3960mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-3960mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	0.5μm	±2	±3	±5
最大负载 Max load (kg)			180		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP2-200-55C6--1253N直线电机  
TPA-LNP2-200-55C6--1253N Linear motor



有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320
L	490	550	610	670	730	790	850	910	970	1030	1090	1150	1210	1270	1330	1390	1450	1510	1570	1630	1690	1750
M	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
N	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	13.5	15	16.5	18	19.5	21	22.5	24	25.5	27	28.5	30	31.5	33	34.5	36	37.5	39	40.5	42	43.5	45

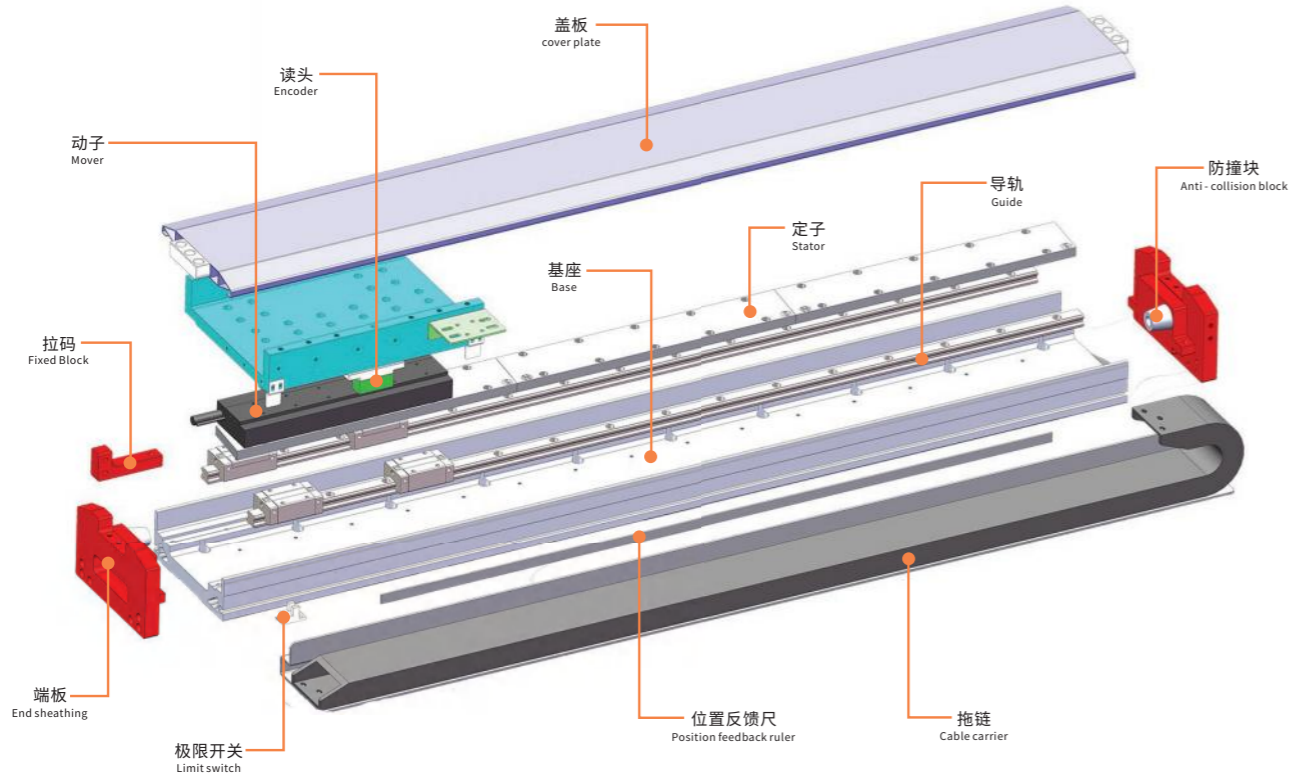
有效行程 Stroke	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640
L	1810	1870	1930	1990	2050	2110	2170	2230	2290	2350	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070
M	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52
N	14	15	15	16	16	17	17	18	18	19	20	20	21	21	22	22	23	23	24	24	24	25
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	46.5	48	49.5	51	52.5	54	55.5	57	58.5	60	61.5	63	64.5	66	67.5	69	70.5	72	73.5	75	76.5	78

有效行程 Stroke	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900	3960
L	3130	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850	3910	3970	4030	4090	4150	4210	4270	4330	4390
M	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70	70	72	72	74
N	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35	35	36
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	79.5	81	82.5	84	85.5	87	88.5	90	91.5	93	94.5	96	97.5	99	100.5	102	103.5	105	106.5	108	109.5	111

- LNP3
- LNP2**
- LNP
- TPA-P
- TPA-PQ
- TPA-UH
- DDR
- 参考资料  
Reference data

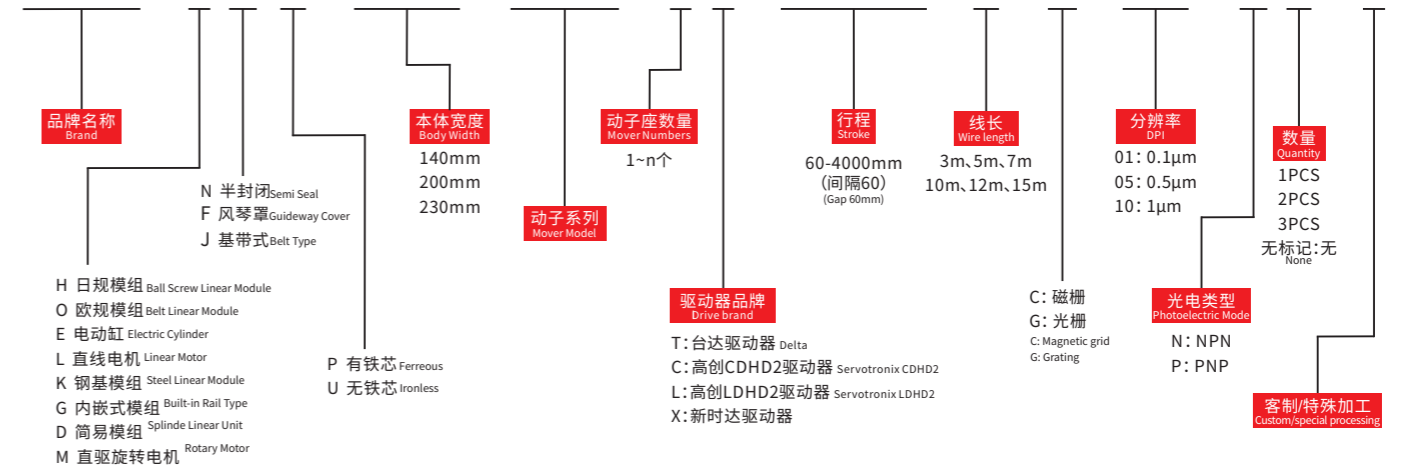


结构示意图 Structure diagram



型号表达方式 Ordering method

TPA-LNP-140-P11-1L-L720-3-C-05-N3-F



补充: 直线电机推力只与动子有关。  
Supplement: The thrust of linear motor is only related to the Mover.

补充: 磁栅分辨率只有0.5μm和1μm。  
Supplement: The magnetic grating resolution is only 0.5μm and 1μm.

系列 Series	动子系列 Mover Model			定子系列 Stator Model		
TPA-LNP-140	P11	P12	P13	PS11	PS12	PS13
TPA-LNP-200	P21	P22	P23	PS21	PS22	PS23
TPA-LNP-230	P31	P32	P33	PS31	PS32	PS33

直线电机是一种将电能直接转换成直线运动机械能,而不需要任何中间转换机构的传动装置。它可以看成是一台旋转电机按径向剖开,并展成平面而成。  
Linear motor is a transmission device that converts electrical energy directly into linear motion mechanical energy without any intermediate conversion mechanism. It can be viewed as a rotating motor that is cut radially and spread out into a plane.

直线电机的优势:

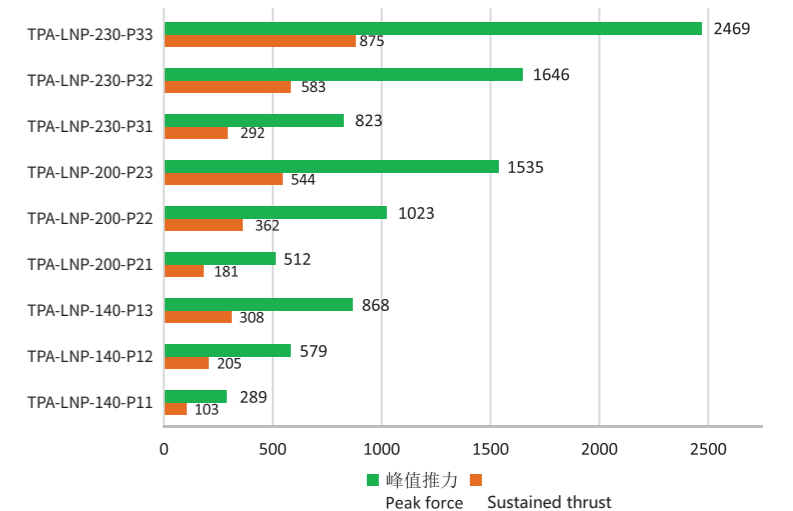
- 除了导轨和滑块外,无其他机械传动件,极大的降低了能量消耗,增强了产品可靠性和运行稳定性。
- 理论上行程不受限制,且长行程几乎对其性能无影响。
- 速度可以很快。因为不存在离心力的约束,普通材料亦可以达到较高的速度。运动时无机械接触,所以运动部分几乎无噪音。
- 加速度大。目前我司直线电机产品加速度可达5g。
- 精度高。减少了影响精度的中间环节,精度主要取决于检测原件,目前精度已达到微米级。
- 维护简单。因主要部件无机械接触,很好的减少了内部配件的磨损,所以直线电机几乎不需要维护。
- 运动惯量较小,动态响应性能好。

Advantages of linear motor:

- in addition to guide rail and slider, no other mechanical transmission parts, greatly reduce the energy consumption, enhance the reliability and stability of the product operation.
- Theoretically, the stroke is not limited, and the long stroke almost has no effect on its performance.
- Speed can be very fast. Because there is no centrifugal force constraints, ordinary materials can achieve higher speeds. There is no mechanical contact during movement, so the moving part is almost silent.
- large acceleration. At present, the acceleration of our linear motor products can reach 5g.
- high precision. Reduce the impact of the accuracy of the intermediate link, the accuracy depends on the detection of the original, the current accuracy has reached micron level.
- simple maintenance. Because the main components have no mechanical contact, it is very good to reduce the wear of internal accessories, so the linear motor almost does not need maintenance.
- the motion inertia is small, dynamic response performance is good.

直线电机模组参数表 Parameter list of linear motor module

型号 Model	持续推力 Sustained thrust(N)	峰值推力 Peak force(N)	行程 Stroke(mm)
TPA-LNP-140-P11	103	289	60-5760
TPA-LNP-140-P12	205	579	60-5700
TPA-LNP-140-P13	308	868	60-5580
TPA-LNP-200-P21	181	512	60-5760
TPA-LNP-200-P22	362	1023	60-5640
TPA-LNP-200-P23	544	1535	60-5580
TPA-LNP-230-P31	292	823	60-5700
TPA-LNP-230-P32	583	1646	60-5700
TPA-LNP-230-P33	875	2469	60-5580





重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **5760mm**

最大负载  
Max Load **30kg**

峰值推力  
Peak thrust **289N**

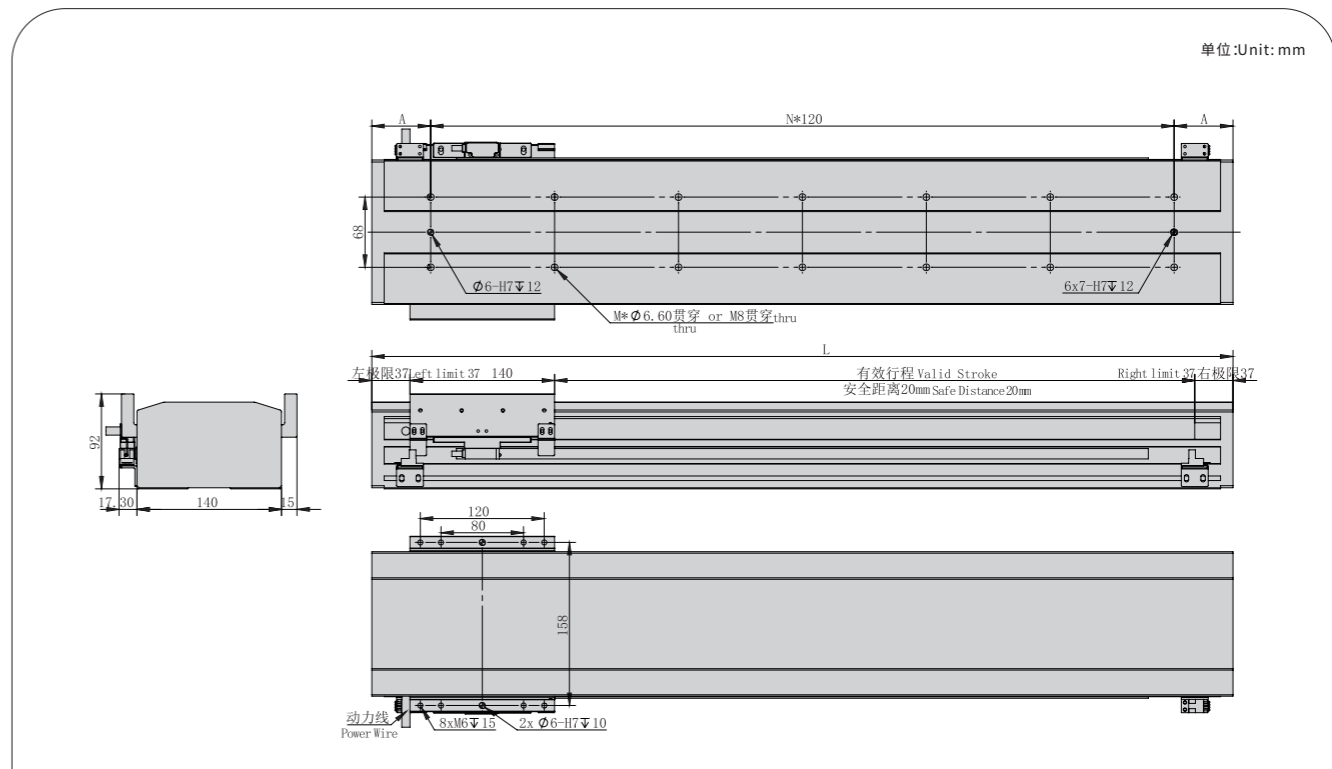
持续推力  
Sustained thrust **103N**

TPA-LNP-140-P11--289N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-140-P11		
持续推力 Rated thrust(N)			103		
峰值推力 Peak thrust(N)			289		
行程 Stroke(mm)			60~5760mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5760mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			30		
最高速度 Max speed (m/s)	分辨率: 0.5μm/1μm DPI: 0.5μm/1μm		5		
	分辨率: 0.1μm DPI: 0.1μm		1		
空载最大加速度 Maximum acceleration at no load (m/s <sup>2</sup> )			50		

※注: 最大负载情况下达不到最高速度和最大加速度。 Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP-140-P11--289N直线电机  
TPA-LNP-140-P11--289N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	294	354	414	474	534	594	654	714	774	834	894	954	1014	1074	1134	1194	1254	1314	1374	1434	1494	1554	1614	1674	1734	1794	1854	1914	1974	2034	2094	2154
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840
L	2214	2274	2334	2394	2454	2514	2574	2634	2694	2754	2814	2874	2934	2994	3054	3114	3174	3234	3294	3354	3414	3474	3534	3594	3654	3714	3774	3834	3894	3954	4014	4074
M	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68
N	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72

有效行程 Stroke	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640	5700	5760
L	4134	4194	4254	4314	4374	4434	4494	4554	4614	4674	4734	4794	4854	4914	4974	5034	5094	5154	5214	5274	5334	5394	5454	5514	5574	5634	5694	5754	5814	5874	5934	5994
M	68	70	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100
N	33	34	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104



此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程 Max Stroke 5700mm

最大负载 Max Load 60kg

峰值推力 Peak thrust 579N

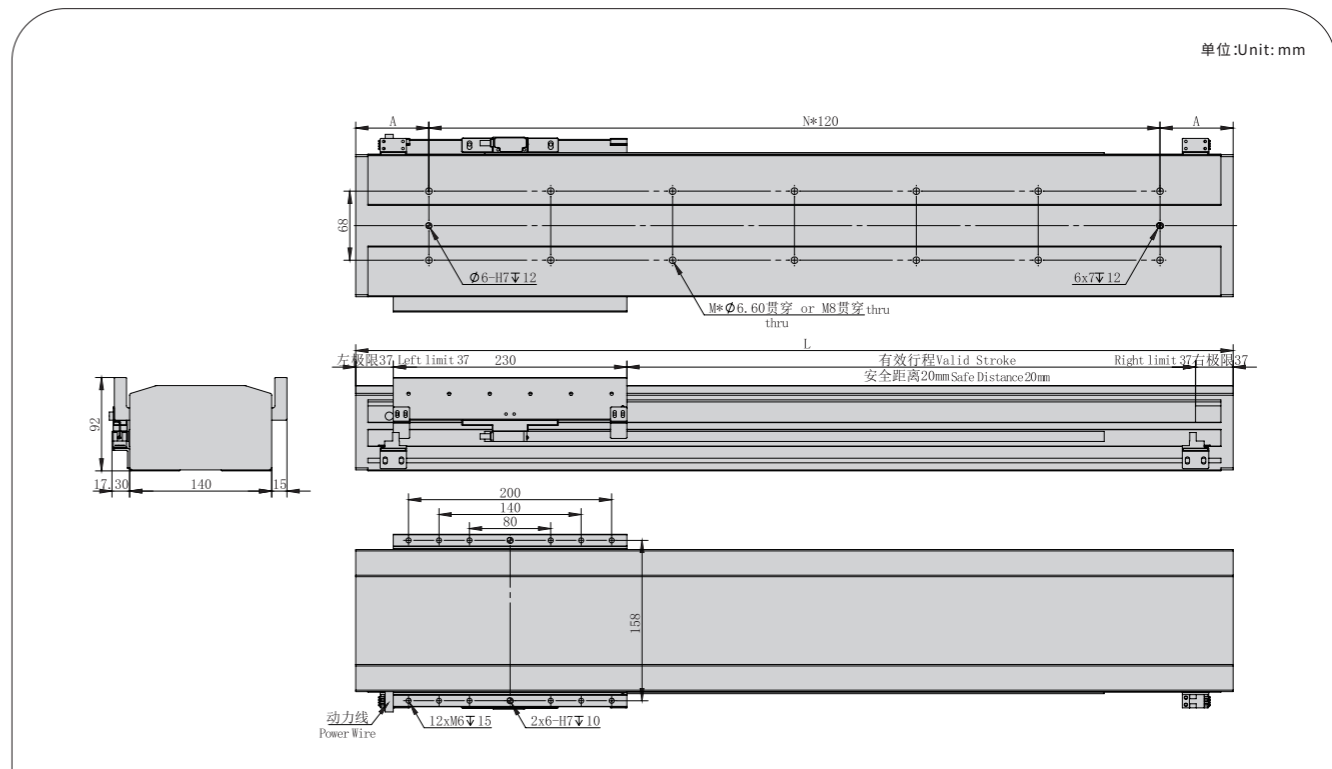
持续推力 Sustained thrust 205N

TPA-LNP-140-P12--579N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-140-P12		
持续推力 Rated thrust(N)			205		
峰值推力 Peak thrust(N)			579		
行程 Stroke(mm)			60~5700mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5700mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			60		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP-140-P12--579N直线电机  
TPA-LNP-140-P12--579N Linear motor

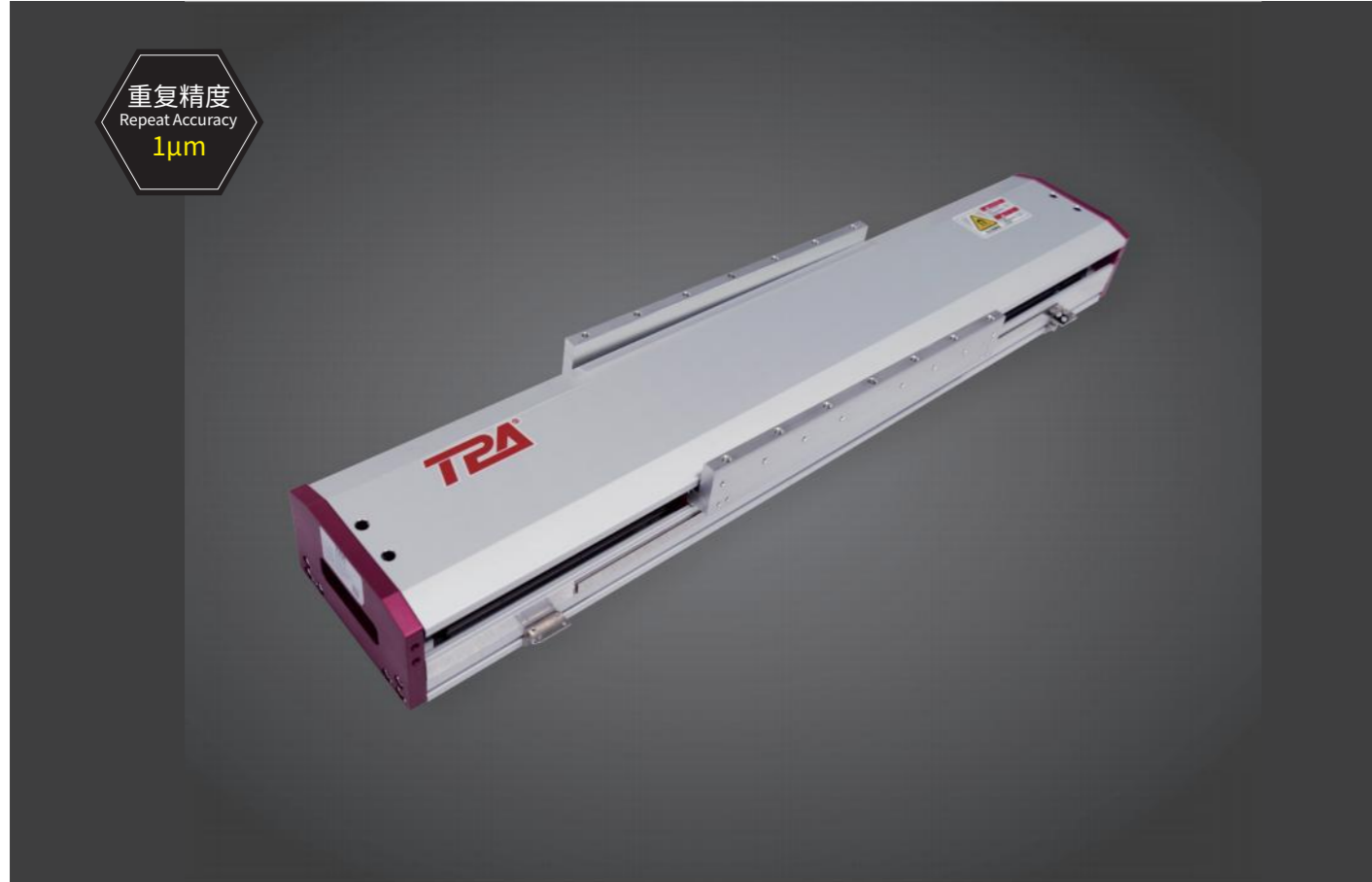


\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	384	444	504	564	624	684	744	804	864	924	984	1044	1104	1164	1224	1284	1344	1404	1464	1524	1584	1644	1704	1764	1824	1884	1944	2004	2064	2124	2184	2244
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18
A	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42
KG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840
L	2304	2364	2424	2484	2544	2604	2664	2724	2784	2844	2904	2964	3024	3084	3144	3204	3264	3324	3384	3444	3504	3564	3624	3684	3744	3804	3864	3924	3984	4044	4104	4164
M	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42
KG	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73

有效行程 Stroke	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640	5700
L	4224	4284	4344	4404	4464	4524	4584	4644	4704	4764	4824	4884	4944	5004	5064	5124	5184	5244	5304	5364	5424	5484	5544	5604	5664	5724	5784	5844	5904	5964	6024
M	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49
A	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72	42	72
KG	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only. Please refer to the size drawing for shipment specifications.  
This picture for reference only, specs details according with the drawing.

最大行程  
Max Stroke **5580mm**

最大负载  
Max Load **100kg**

峰值推力  
Peak thrust **868N**

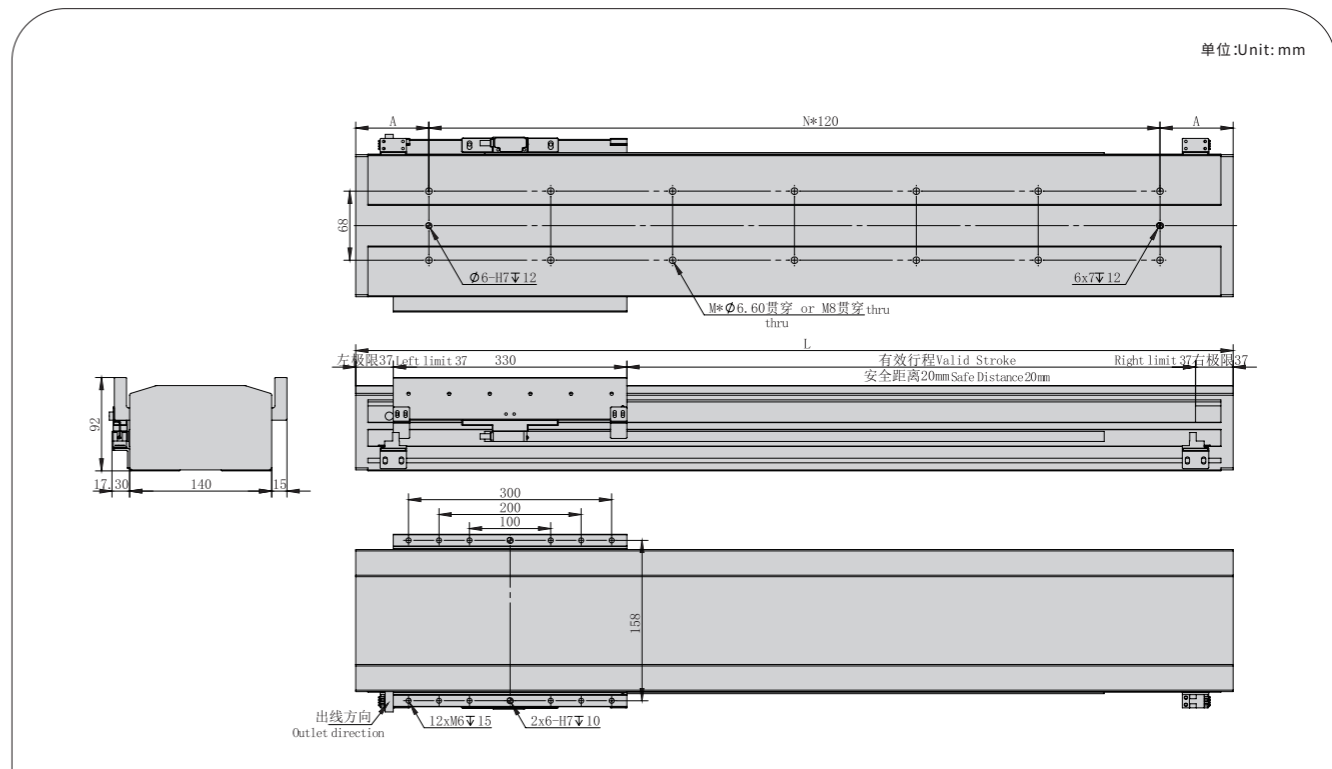
持续推力  
Sustained thrust **308N**

TPA-LNP-140-P13--868N直线电机参数如下 Specification as below

产品型号 Product model		TPA-LNP-140-P13			
持续推力 Rated thrust(N)		308			
峰值推力 Peak thrust(N)		868			
行程 Stroke(mm)		60~5580mm (间隔60) (Gap 60mm)			
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5580mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)		100			
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )		50			

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP-140-P13--868N直线电机  
TPA-LNP-140-P13--868N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860
L	484	544	604	664	724	784	844	904	964	1024	1084	1144	1204	1264	1324	1384	1444	1504	1564	1624	1684	1744	1804	1864	1924	1984	2044	2104	2164	2224	2284
M	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38
N	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18
A	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62
KG	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43

有效行程 Stroke	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720
L	2344	2404	2464	2524	2584	2644	2704	2764	2824	2884	2944	3004	3064	3124	3184	3244	3304	3364	3424	3484	3544	3604	3664	3724	3784	3844	3904	3964	4024	4084	4144
M	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32
KG	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74

有效行程 Stroke	3780	3840	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580
L	4204	4264	4324	4384	4444	4504	4564	4624	4684	4744	4804	4864	4924	4984	5044	5104	5164	5224	5284	5344	5404	5464	5524	5584	5644	5704	5764	5824	5884	5944	6004
M	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49
A	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62	32	62
KG	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105



重复精度  
Repeat Accuracy  
1μm



此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 5760mm

最大负载  
Max Load 60kg

峰值推力  
Peak thrust 512N

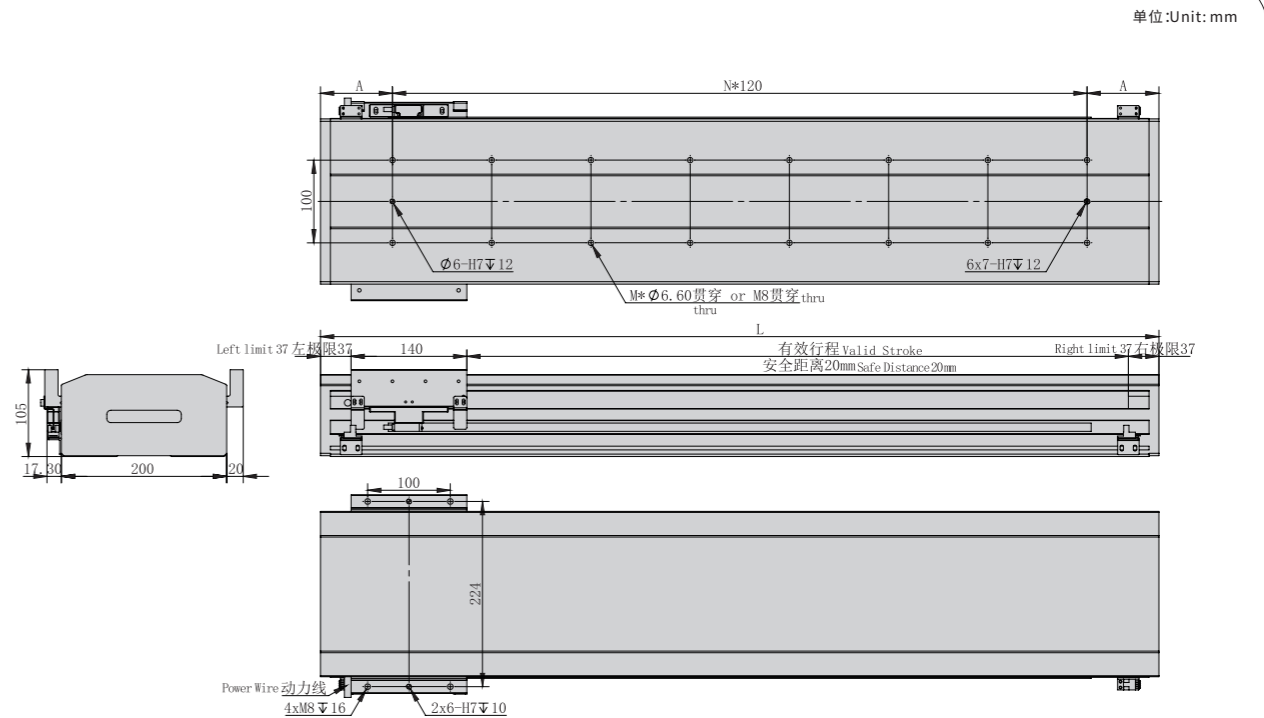
持续推力  
Sustained thrust 181N

TPA-LNP-200-P21--512N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-200-P21		
持续推力 Rated thrust(N)			181		
峰值推力 Peak thrust(N)			512		
行程 Stroke(mm)			60~5760mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5760mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			60		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP-200-P21--512N直线电机 TPA-LNP-200-P21--512N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	294	354	414	474	534	594	654	714	774	834	894	954	1014	1074	1134	1194	1254	1314	1374	1434	1494	1554	1614	1674	1734	1794	1854	1914	1974	2034	2094	2154
M	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36
N	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840
L	2214	2274	2334	2394	2454	2514	2574	2634	2694	2754	2814	2874	2934	2994	3054	3114	3174	3234	3294	3354	3414	3474	3534	3594	3654	3714	3774	3834	3894	3954	4014	4074
M	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68
N	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74

有效行程 Stroke	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640	5700	5760
L	4134	4194	4254	4314	4374	4434	4494	4554	4614	4674	4734	4794	4854	4914	4974	5034	5094	5154	5214	5274	5334	5394	5454	5514	5574	5634	5694	5754	5814	5874	5934	5994
M	68	70	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100
N	33	34	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49
A	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57	87	57
KG	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **5640mm**

最大负载  
Max Load **120kg**

峰值推力  
Peak thrust **1023N**

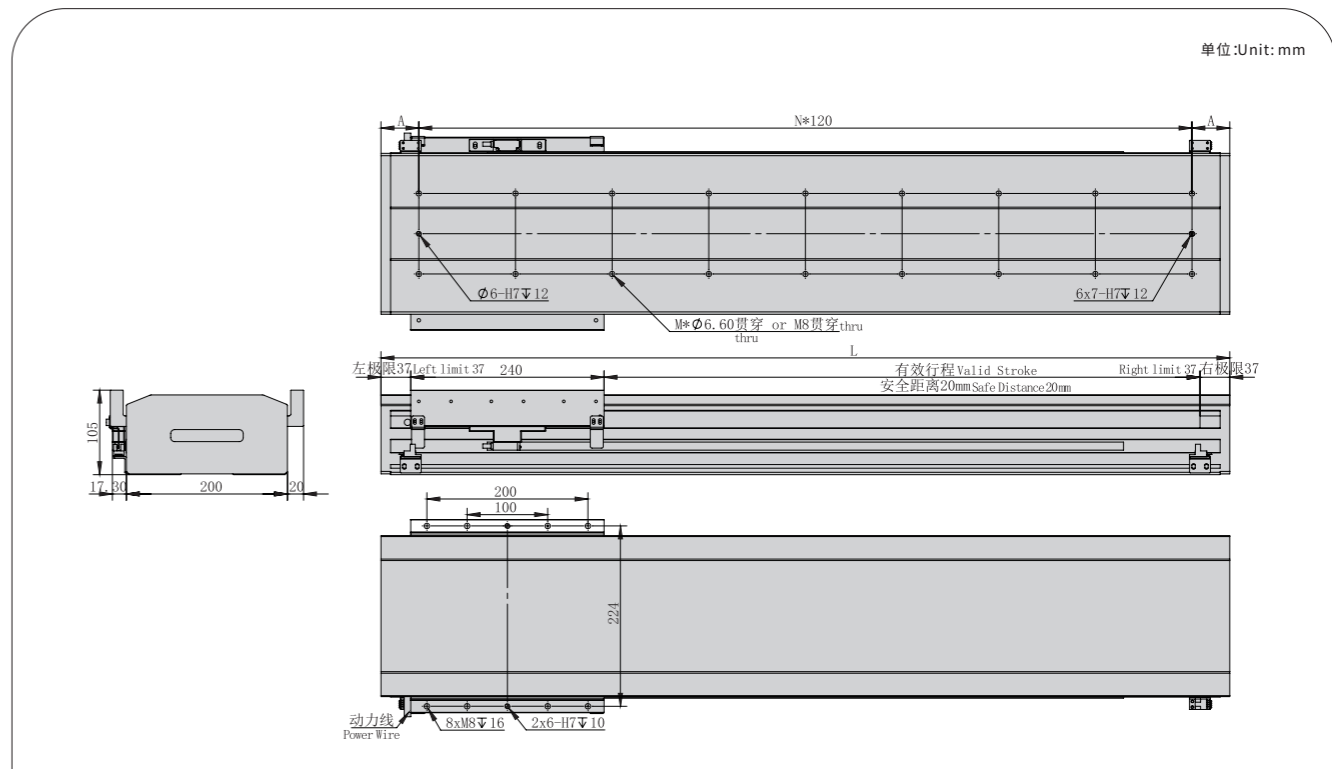
持续推力  
Sustained thrust **362N**

TPA-LNP-200-P22--1023N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-200-P22		
持续推力 Rated thrust(N)			362		
峰值推力 Peak thrust(N)			1023		
行程 Stroke(mm)			60~5640mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5640mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			120		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP-200-P22--1023N直线电机  
TPA-LNP-200-P22-1023N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	394	454	514	574	634	694	754	814	874	934	994	1054	1114	1174	1234	1294	1354	1414	1474	1534	1594	1654	1714	1774	1834	1894	1954	2014	2074	2134	2194	2254
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18
A	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47
KG	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780
L	2314	2374	2434	2494	2554	2614	2674	2734	2794	2854	2914	2974	3034	3094	3154	3214	3274	3334	3394	3454	3514	3574	3634	3694	3754	3814	3874	3934	3994	4054	4114
M	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68
N	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33
A	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77
KG	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78

有效行程 Stroke	3840	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640
L	4174	4234	4294	4354	4414	4474	4534	4594	4654	4714	4774	4834	4894	4954	5014	5074	5134	5194	5254	5314	5374	5434	5494	5554	5614	5674	5734	5794	5854	5914	5974
M	70	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100
N	34	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49
A	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47	77	47
KG	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109





重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **5580mm**

最大负载  
Max Load **180kg**

峰值推力  
Peak thrust **1535N**

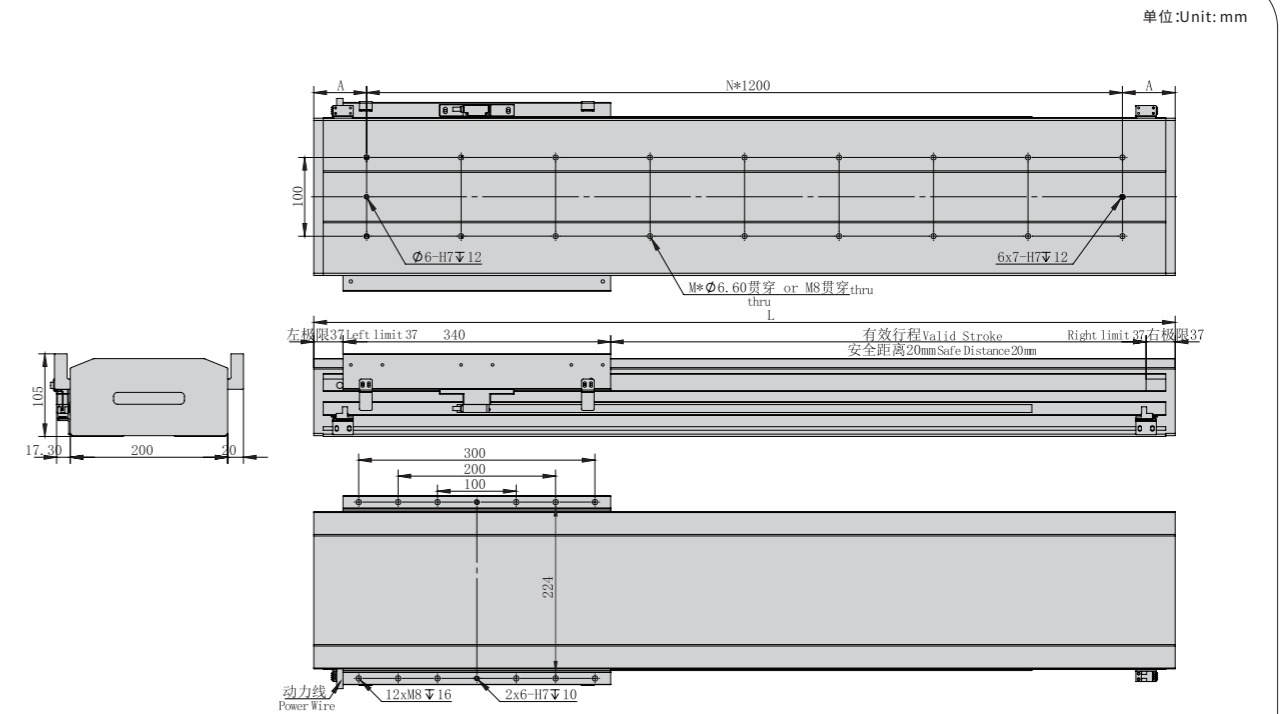
持续推力  
Sustained thrust **544N**

TPA-LNP-200-P23--1535N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-200-P23		
持续推力 Rated thrust(N)			544		
峰值推力 Peak thrust(N)			1535		
行程 Stroke(mm)			60~5580mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5580mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			180		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP-200-P23--1535N直线电机 TPA-LNP-200-P23--1535N Linear motor

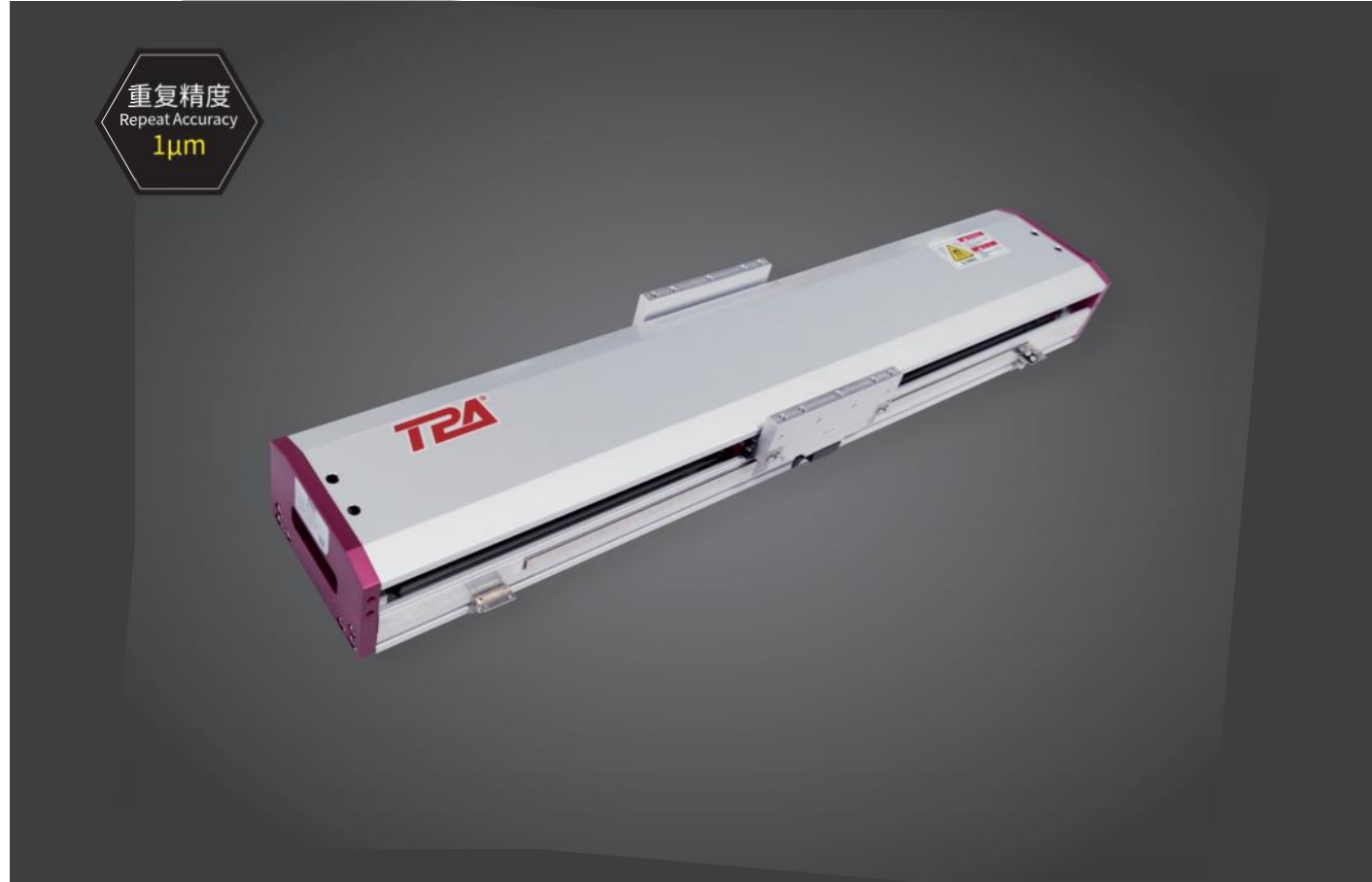


\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860
L	494	554	614	674	734	794	854	914	974	1034	1094	1154	1214	1274	1334	1394	1454	1514	1574	1634	1694	1754	1814	1874	1934	1994	2054	2114	2174	2234	2294
M	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38
N	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19
A	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67
KG	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

有效行程 Stroke	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720
L	2354	2414	2474	2534	2594	2654	2714	2774	2834	2894	2954	3014	3074	3134	3194	3254	3314	3374	3434	3494	3554	3614	3674	3734	3794	3854	3914	3974	4034	4094	4154
M	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34	34	35
A	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37
KG	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81

有效行程 Stroke	3780	3840	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580
L	4214	4274	4334	4394	4454	4514	4574	4634	4694	4754	4814	4874	4934	4994	5054	5114	5174	5234	5294	5354	5414	5474	5534	5594	5654	5714	5774	5834	5894	5954	6014
M	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49	50	50
A	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67	37	67
KG	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112



重复精度  
Repeat Accuracy  
1μm

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke 5700mm

最大负载  
Max Load 100kg

峰值推力  
Peak thrust 823N

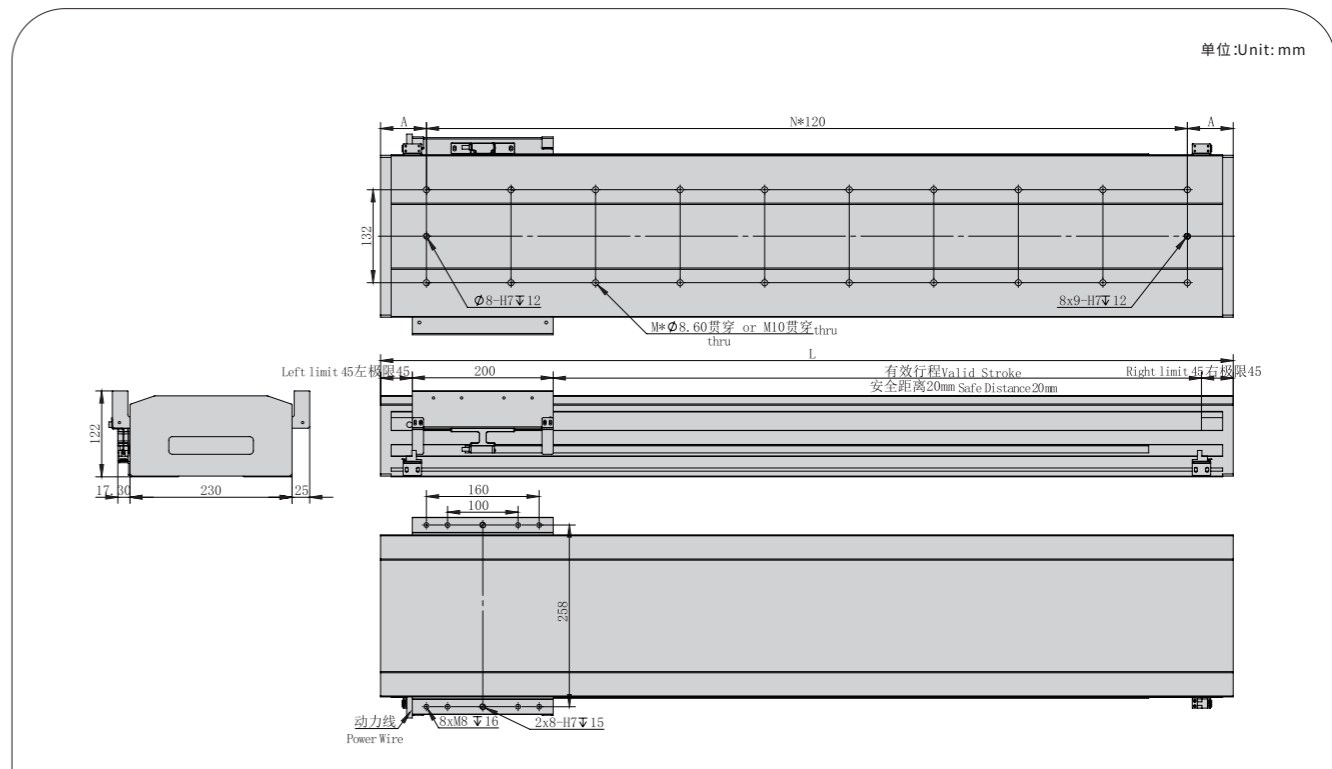
持续推力  
Sustained thrust 292N

TPA-LNP-230-P31--823N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-230-P31		
持续推力 Rated thrust(N)			292		
峰值推力 Peak thrust(N)			823		
行程 Stroke(mm)			60~5700mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5700mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			100		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

TPA-LNP-230-P31--823N直线电机  
TPA-LNP-230-P31--823N Linear motor

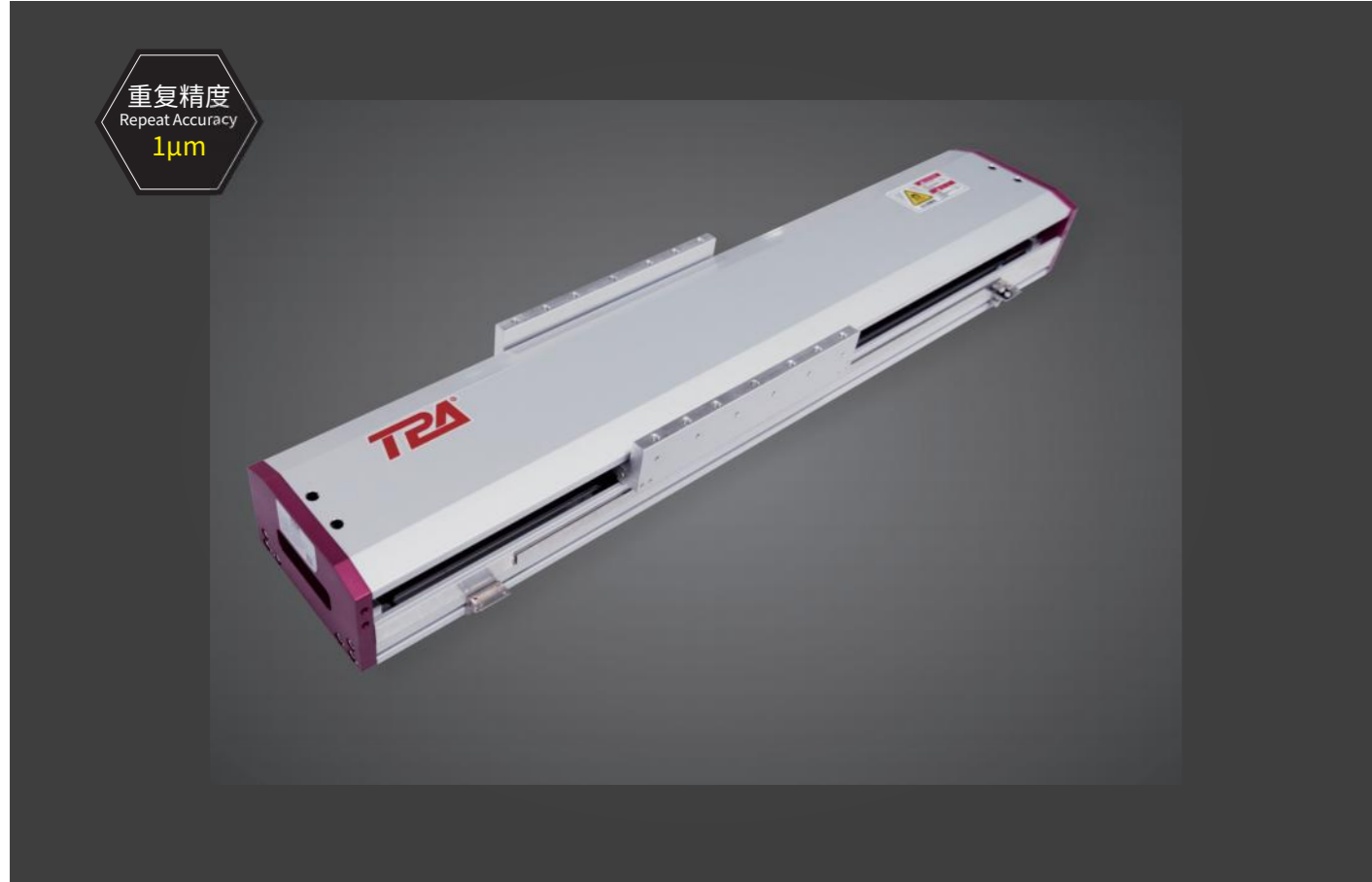


\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	370	430	490	550	610	670	730	790	850	910	970	1030	1090	1150	1210	1270	1330	1390	1450	1510	1570	1630	1690	1750	1810	1870	1930	1990	2050	2110	2170	2230
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780
L	2290	2350	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070	3130	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850	3910	3970	4030	4090
M	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68
N	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65
KG	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144

有效行程 Stroke	3840	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640	5700
L	4150	4210	4270	4330	4390	4450	4510	4570	4630	4690	4750	4810	4870	4930	4990	5050	5110	5170	5230	5290	5350	5410	5470	5530	5590	5650	5710	5770	5830	5890	5950	6010
M	70	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	34	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49
A	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	
KG	146	148	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **5700mm**

最大负载  
Max Load **200kg**

峰值推力  
Peak thrust **1646N**

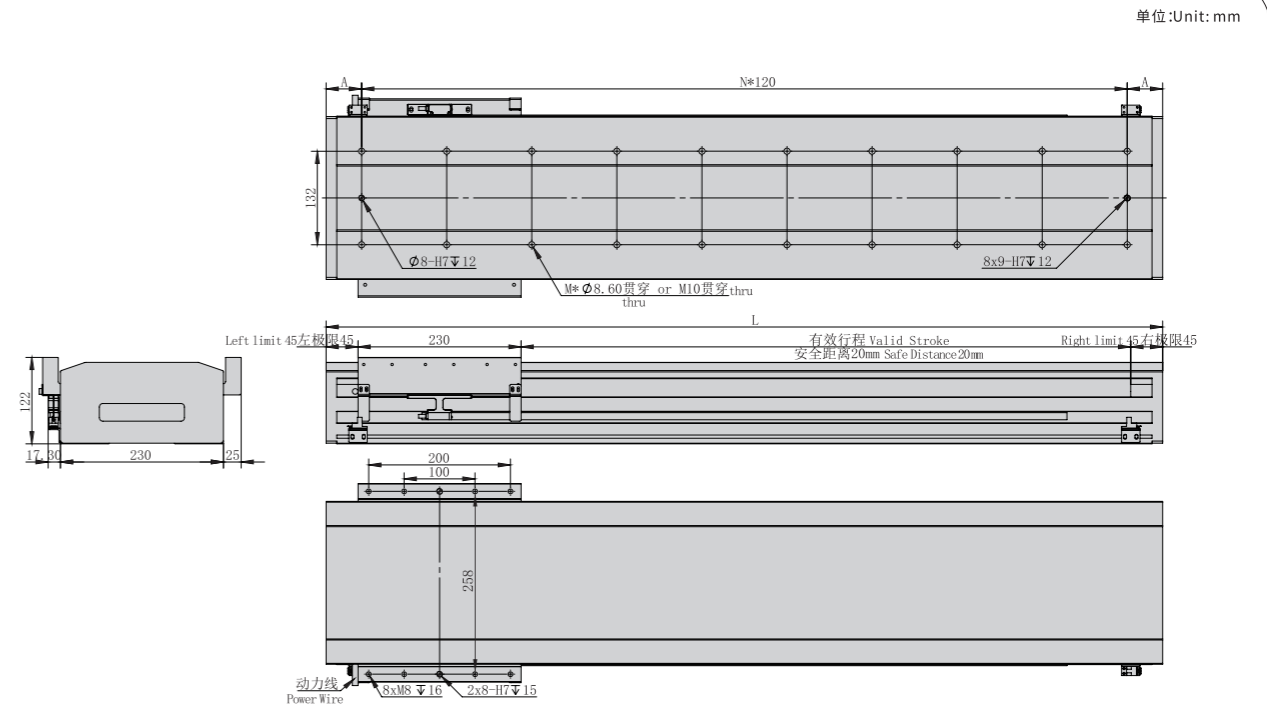
持续推力  
Sustained thrust **583N**

TPA-LNP-230-P32--1646N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-230-P32		
持续推力 Rated thrust(N)			583		
峰值推力 Peak thrust(N)			1646		
行程 Stroke(mm)			60~5700mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5700mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			200		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP-230-P32--1646N直线电机 TPA-LNP-230-P32--1646N Linear motor

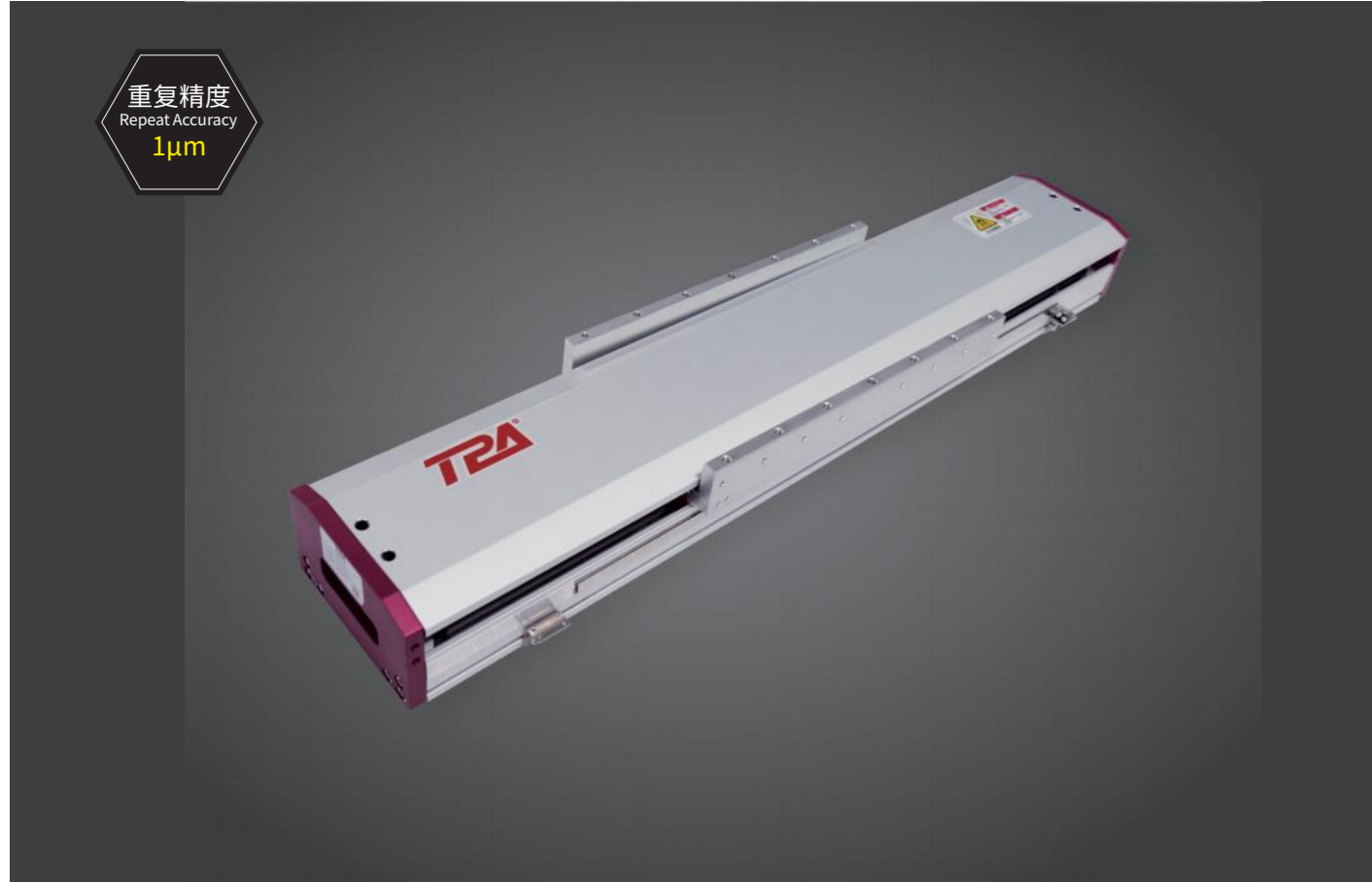


\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920
L	370	430	490	550	610	670	730	790	850	910	970	1030	1090	1150	1210	1270	1330	1390	1450	1510	1570	1630	1690	1750	1810	1870	1930	1990	2050	2110	2170	2230
M	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38
N	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82

有效行程 Stroke	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840
L	2290	2350	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070	3130	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850	3910	3970	4030	4090	4150
M	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35
KG	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144	146

有效行程 Stroke	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580	5640	5700
L	4210	4270	4330	4390	4450	4510	4570	4630	4690	4750	4810	4870	4930	4990	5050	5110	5170	5230	5290	5350	5410	5470	5530	5590	5650	5710	5770	5830	5890	5950	6010
M	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49
A	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65	35	65
KG	148	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208



重复精度  
Repeat Accuracy  
**1μm**

此图仅供参考, 出货规格详见尺寸图面  
This drawing is for reference only, Please refer to the size drawing for shipment specifications.

最大行程  
Max Stroke **5580mm**

最大负载  
Max Load **300kg**

峰值推力  
Peak thrust **2469N**

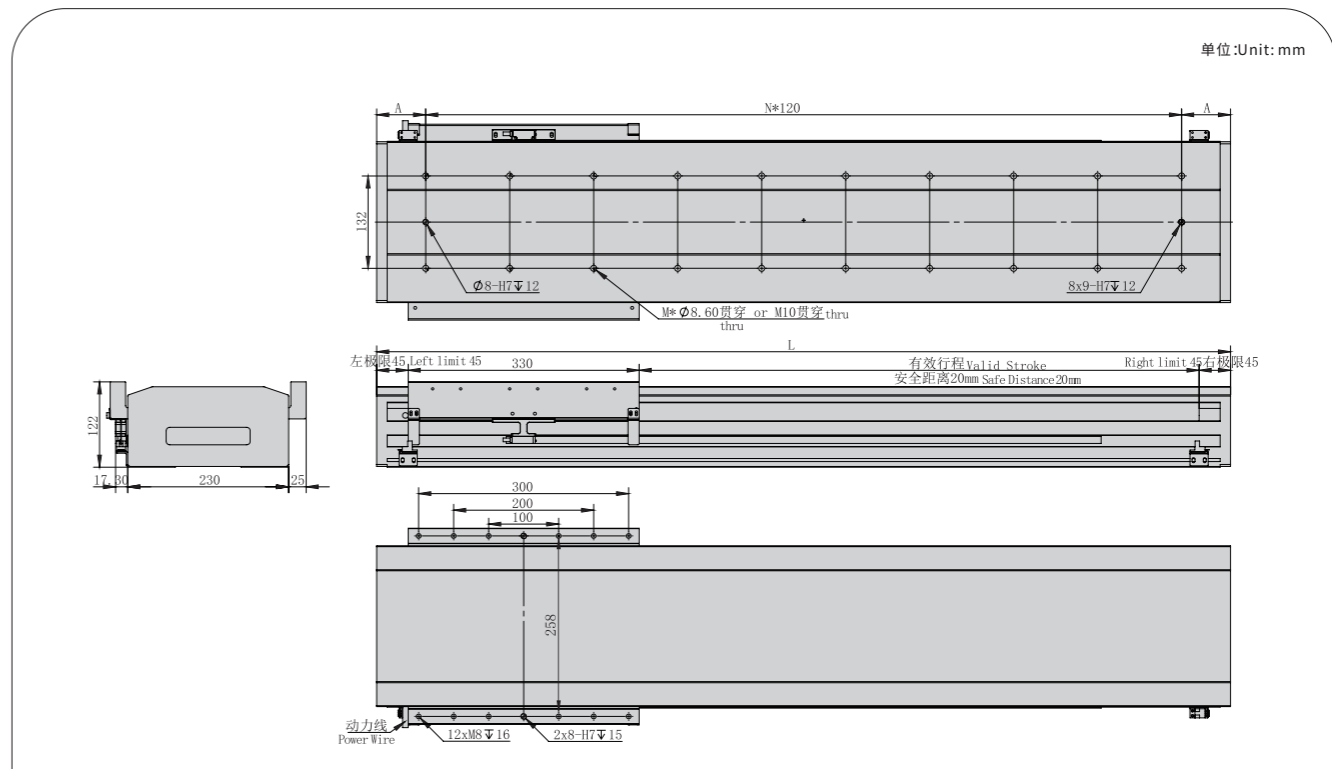
持续推力  
Sustained thrust **875N**

TPA-LNP-230-P33--2469N直线电机参数如下 Specification as below

产品型号 Product model			TPA-LNP-230-P33		
持续推力 Rated thrust(N)			875		
峰值推力 Peak thrust(N)			2469		
行程 Stroke(mm)			60~5580mm (间隔60) (Gap 60mm)		
重复精度 Repeated Accuracy (μm)	反馈类型 Feedback type	分辨率 DPI	60-1000mm	1001-2000mm	2001-5580mm
	光栅尺 Grating ruler	0.5μm	±1	±2	±3
	磁栅尺 Magnetic grating ruler	1μm	±2	±3	±5
最大负载 Max load (kg)			300		
最高速度 Max speed(m/s)	分辨率:0.5μm/1μm DPI:0.5μm/1μm		5		
	分辨率:0.1μm DPI:0.1μm		1		
空载最大加速度 Maximum acceleration at no load(m/s <sup>2</sup> )			50		

※注:最大负载情况下达不到最高速度和最大加速度。Note: The maximum speed and acceleration can't be reached under the maximum load.

## TPA-LNP-230-P33--2469N直线电机 TPA-LNP-230-P33--2469N Linear motor



\*不含电机重量。\*Motor weight not included.

有效行程 Stroke	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860
L	500	560	620	680	740	800	860	920	980	1040	1100	1160	1220	1280	1340	1400	1460	1520	1580	1640	1700	1760	1820	1880	1940	2000	2060	2120	2180	2240	2300
M	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38
N	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18
A	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70
KG	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86

有效行程 Stroke	1920	1980	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720
L	2360	2420	2480	2540	2600	2660	2720	2780	2840	2900	2960	3020	3080	3140	3200	3260	3320	3380	3440	3500	3560	3620	3680	3740	3800	3860	3920	3980	4040	4100	4160
M	40	40	42	42	44	44	46	46	48	48	50	50	52	52	54	54	56	56	58	58	60	60	62	62	64	64	66	66	68	68	70
N	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	33	34
A	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40
KG	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144	146	148

有效行程 Stroke	3780	3840	3900	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280	5340	5400	5460	5520	5580
L	4220	4280	4340	4400	4460	4520	4580	4640	4700	4760	4820	4880	4940	5000	5060	5120	5180	5240	5300	5360	5420	5480	5540	5600	5660	5720	5780	5840	5900	5960	6020
M	70	72	72	74	74	76	76	78	78	80	80	82	82	84	84	86	86	88	88	90	90	92	92	94	94	96	96	98	98	100	100
N	34	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	45	45	46	46	47	47	48	48	49	49
A	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70	40	70
KG	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208	210



## 技术用语--线性马达

### Technical term-linear motor

#### 持续推力 $F_c(N)$ Sustained thrust

定义为马达在环境温度 25°C 下, 连续运动不休息所输出的推力, 此连续推力对应施加给马达之连续电流 IC。  
It is defined as the thrust output by the motor when it moves continuously without rest at the ambient temperature of 25 C. This continuous thrust corresponds to the continuous current IC applied to the motor.

#### 连续电流 $I_c(Arms)$ Continuous current

定义为在环境温度 25°C 下, 可连续供应给马达线圈的电流, 亦为产生连续推力的电流。  
It is defined as the current that can be continuously supplied to the motor coil at the ambient temperature of 25°C, and also the current that generates continuous thrust.

#### 瞬间推力 $F_p(N)$ Instantaneous thrust

定义为马达在不超过一秒的时间可以输出的最大推力, 一般用于加速或减速的目的。  
It is defined as the maximum thrust that the motor can output in no more than one second, and is generally used for the purpose of acceleration or deceleration.

#### 瞬间电流 $I_c(Arms)$ Instantaneous current

定义为马达达到瞬间推力下所对应之瞬间大电流, 在正常操作范围, 瞬间电流可允许供给一秒。  
It is defined as the instantaneous large current corresponding to the instantaneous thrust of the motor. In the normal operating range, the instantaneous current can be allowed to supply for one second.

#### 极限推力 $F_u(N)$ Ultimate thrust

定义为马达在极限电流  $I_u$  下所对应的输出推力。  
It is defined as the output thrust of the motor under the limit current  $I_u$ .

#### 极限电流 $I_u(Arms)$ Limiting current

定义为马达连续电流 IC 的五倍; 在此电流下, 马达输出之推力在饱和的非线性品内, 推力常数会降低, 输入此电流马达有过温风险, 建议操作时间为 0.5 秒以下。  
Defined as five times of the continuous current IC of the motor; Under this current, the thrust output by the motor is in a saturated nonlinear product, and the thrust constant will decrease. There is a risk of overtemperature in the motor input with this current. It is suggested that Operation time is less than 0.5 seconds.

#### 推力常数 $K_f(N/Arms)$ Thrust constant

定义为马达在单位电流下(Arms)的输出推力, 把此参数乘以电流即可得到推力:  $F=I \times K_f$   
It is defined as the output thrust of the motor under unit current (Arms), and the thrust can be obtained by multiplying this parameter by the current:  $f = I \times k_f$

#### 动子与定子间吸引力 $F_a(N)$ Attraction between rotor and stator

定义在额定气隙下铁心式马达动子与定子之间的作用力, 此力形成滑块的预压, 将由滑轨承受。  
Define the acting force between the rotor and stator of core motor under rated air gap, which forms the preload of the slider and will be borne by the slide rail.

#### 线圈最高温度 $T_{MAX}(^{\circ}C)$ Maximum coil temperature

定义为马达连续线圈允许的最高温度。马达的实际平衡温度会取决于机构、冷却方式及运动规则等等因素, 理论计算可能会有偏差, 通常以实际测试为依据。  
It is defined as the maximum allowable temperature of the continuous coil of the motor. The actual equilibrium temperature of the motor will depend on the mechanism, cooling mode, motion rules and other factors, and the theoretical calculation may be biased, usually based on the actual test.

#### 电气时间常数 $K_e(ms)$ Electrical time constant

定义为供给马达的电流达到目标值 63% 所需的时间, 其值越小表示响应时间越快。  
It is defined as the time required for the current supplied to the motor to reach 63% of the target value. The smaller the value, the faster the response time.

#### 电阻 (线间, 25°C) $R_{25\Omega}$ Resistance (line to line, 25°C)

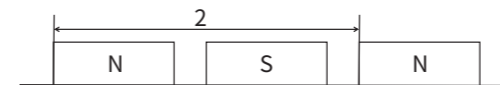
定义为马达在线圈温度 25°C 时所量测之线间电阻值; 电阻值会随温度上升而提高。  
It is defined as the line-to-line resistance value measured by the motor at the coil temperature 25°C; The resistance value will increase with the increase of temperature.

#### 电感 (线间) $L(mH)$ Inductance (line-to-line)

定义为马达所量测之线间电感值。

#### 极对距 2 (mm) The polar distance is 2τ(mm)

定义为定子上两同极性磁铁之间的距离, 即为 N→N 或 S→S。  
Is defined as the distance between two magnets of the same polarity on the stator, i.e. N→N or S→S.



#### 反电动势常数 $K_v[Vrms/(m/s)]$ Back electromotive force constant

定义为马达在磁石温度 25°C 时, 单位速度所产生的感应电动势。发生于线圈感应到磁场变化时, 反抗电流通过电动势。  
It is defined as the induced electromotive force generated by the unit speed of the motor when the magnet temperature is 25°C. When the coil senses the change of the magnetic field, it resists the current passing through the electromotive force.

#### 马达常数 $K_m(N/\sqrt{W})$ Motor constant

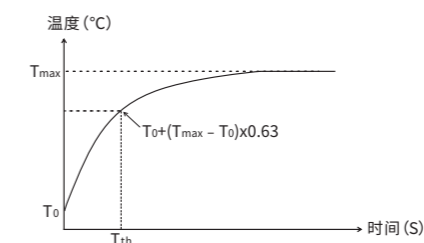
定义为线圈以及磁石温度 25°C 时马达输出推力对消耗功率开根号的比值, 越高的马达常数代表马达在输出特定推力时会有越低的功率损失, 为判定马达效率的指标之一。  
It is defined as the ratio of the output thrust of the motor to the open root number of the consumed power when the temperature of the coil and magnet is 25 C. The higher the motor constant, the lower the power of the motor when it outputs a specific thrust. Loss is one of the indexes to judge the motor efficiency.

#### 热阻 $R_{TH}(^{\circ}C/W)$ Heat resistance

定义为热量从马达线圈内到散热环境所受到之阻力, 热阻越小表示相同热量输入下, 线圈与散热环境的温差越小, 亦表示散热效果越好。  
It is defined as the resistance of heat from the motor coil to the heat dissipation environment. The smaller the thermal resistance, the smaller the temperature difference between the coil and the heat dissipation environment under the same heat input, which also indicates the better heat dissipation effect.

#### 热时间常数 $t_{TH}(s)$ Thermal response time

定义为马达在供给连续电流下, 线圈初始温度升至与线圈最高温度温差 63% 所需的时间。  
It is defined as the time required for the initial temperature of the coil to rise to 63% temperature difference from the highest temperature of the coil when the motor is supplied with continuous current.





## 技术用语--线性马达

### Technical term-linear motor

#### 最小流量(L/min) Minimum flow

定义为冷却液在额定水冷温度下, 马达要达到水冷连续推力  $F_c(wc)$  需要的最小流量。  
It is defined as the minimum flow rate required by the motor to achieve the water-cooling continuous thrust  $F_c(wc)$  at the rated water-cooling temperature.

#### 水冷温度(°C) Water cooling temperature

定义为在最小流量下, 马达冷却液需在此温度才能达到水冷连续推力  $F_c(wc)$ 。  
It is defined that at the minimum flow rate, the motor coolant must reach the water-cooled continuous thrust  $F_c(wc)$  at this temperature.

#### 压降 $\Delta P$ (bar) Pressure drop

定义为冷却液在最小流量下的进出水口压力差。  
Define the pressure difference between inlet and outlet of coolant at the minimum flow rate.

#### 瞬间推力最高速度 $V_{MAX,FP}(W)$ Instantaneous thrust maximum speed

定义为在瞬间推力下, 马达所能达到的最高速度;此参数需取决于最大操作电压。  
It is defined as the highest speed that the motor can reach under instantaneous thrust; this parameter depends on the maximum operating voltage.

#### 最大输入功率 $P_{EL,MAX}(W)$ Maximum input power

定义为马达操作在瞬间推力最高速度与最大热损失条件下所需要的输入功率。  
It is defined as the input power required for motor operation under the conditions of instantaneous thrust maximum speed and maximum heat loss.

#### 最大热损失 $Q_{P,H,MAX}(W)$ Maximum heat loss

定义为马达在线圈最高温度时线圈产生的热损失。  
It is defined as the heat loss generated by the coil when the motor is at the highest temperature of the coil.

#### 堵转电流 $I_0(A_{RMS})$ Blocked current

定义为马达在环境温度 25°C 与堵转条件下, 所能供给之电流上限, 其值与散热条件有关。  
It is defined as the upper limit of the current that the motor can supply at the ambient temperature of 25°C and the locked-rotor condition, and its value is related to the heat dissipation condition.

#### 堵转力 $F_0(N)$ Blocking force

定义为马达在环境温度 25°C 与堵转条件下, 所能供给之推力上限, 其值与散热条件有关。  
It is defined as the upper limit of the thrust that the motor can supply under the conditions of ambient temperature of 25°C and locked rotor, and its value is related to the heat dissipation condition.

#### 最大操作电压(VDC) Maximum operating voltage

定义为马达在正常工作环境所能使用的最大操作电压。  
Defines the maximum operating voltage that the motor can use in normal working environment.

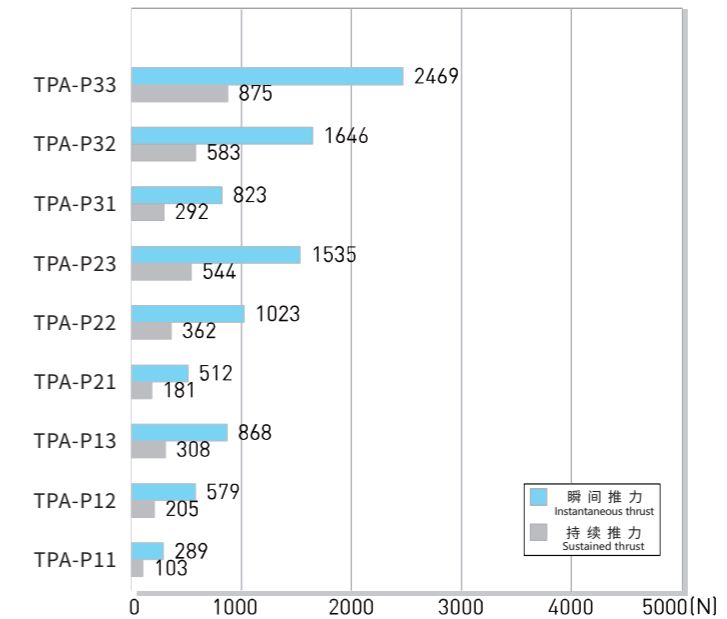
### TPA-P系列线性马达 TPA-P series linear motors

TPA同步线性马达TPA-P系列是属于线性驱动产品中推力较大的一型。它的特色在于高推力密度与低顿力。  
此三项马达是由铁心构成的一次侧[动子]与永久磁铁构成的二次侧[定子]组成。由于定子可无限延长, 所以行程将不受限制。  
TPA linear motor LMSA is one of the linear drive products with high thrust. It is characterized by high thrust density and low stopping force.  
The three motors are composed of a primary side (Mover) composed of an iron core and a secondary side (stator) composed of a permanent magnet. Since the stator can be extended indefinitely, the stroke will be unlimited.



- ◇ 高动态响应 High dynamic response
- ◇ 低安装高度 Low installation height
- ◇ UL与CE认证 UL and CE certification
- ◇ 持续推力范围103N至1579N The sustained thrust range is 103N to 1579N
- ◇ 瞬间推力范围289N至4458N Instantaneous thrust range 289N to 4458N
- ◇ 安装高度34mm,36mm The mounting height is 34mm and 36mm

马达推力图 Motor thrust diagram



LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## TPA-P系列规格

### TPA-P series specifications

性能参数 Performance parameter	符号 Symbol	单位 Unit	TPA-P11	TPA-P12	TPA-P13	TPA-P21	TPA-P22	TPA-P23	TPA-P31	TPA-P32	TPA-P33
持续推力 Sustained thrust	F <sub>c</sub>	N	103	205	308	181	362	544	292	583	875
连续电流 Continuous current	L <sub>c</sub>	A <sub>rms</sub>	2.1	4.2	6.3	2.0	3.9	5.9	2.0	4.0	13.4
瞬间推力(1s) Instantaneous thrust	F <sub>p</sub>	N	289	579	868	512	1023	1535	823	1646	2469
瞬间电流(1s) Instantaneous current	L <sub>p</sub>	A <sub>rms</sub>	6.3	12.7	19.0	5.9	11.8	17.6	6.0	12.0	40.2
极限推力(0.5s) Ultimate thrust force	F <sub>u</sub>	N	379	759	1138	670	1341	2011	1079	2157	3236
极限电流(0.5s) Limiting current	L <sub>u</sub>	A <sub>rms</sub>	10.6	21.1	31.7	9.8	19.6	29.4	10.0	20.0	67.0
推力常数 Thrust constant	k <sub>f</sub>	N/A <sub>rms</sub>	48.6	48.6	48.6	92.5	92.5	92.5	145.8	145.8	65.2
转子与定子间吸力 Suction between rotor and stator	F <sub>a</sub>	N	481	963	1444	963	1926	2888	1444	2888	4333
线圈最高温度 Maximum coil temperature	T <sub>max</sub>	°C	120								
电气时间常数 Electrical time constant	k <sub>e</sub>	ms	4.4	4.5	4.4	4.6	4.9	4.9	4.9	4.9	5.0
电阻(线间,25°C) Resistance (line to line, 25°C)	R <sub>25</sub>	Ω	8.4	4.1	2.8	13.8	6.8	4.6	19.2	9.6	1.3
电阻(线间,120°C) Resistance (line to line, 120°C)	R <sub>120</sub>	Ω	11.6	5.7	3.9	19.0	9.4	6.3	26.5	13.2	1.8
电感 Inductance	L	mH	37.1	18.5	12.4	64.0	33.0	22.4	94.1	47.1	6.5
极对距 Polar distance	2	mm	30								
马达绕组半径 Wire winding radius of motor	R <sub>bend</sub>	mm	69								
反电动势常数(线间) Back EMF constant (line-to-line)	K <sub>v</sub>	V <sub>rms</sub> /(m/s)	28.1	28.1	28.1	53.4	53.4	53.4	84.2	84.2	37.7
马达常数(25°C) Motor constant (25°C)	K <sub>m</sub>	N/√W	13.7	19.6	23.7	20.3	28.9	35.2	27.2	38.4	46.7
热阻 Heat resistance	R <sub>TH</sub>	°C/W	1.23	0.63	0.41	0.87	0.44	0.29	0.60	0.30	0.20
热时间常数 Thermal response time	t <sub>TH</sub>	s	1830	2720	4210	2830	4060	5080	4540	5740	5580
热感测开关 Thermal sensing switch	-	-	3 PTC SNM120 In Series								
最大操作电压 Maximum operating voltage	-	V <sub>dc</sub>	600								
动子质量 Moving mass	M <sub>f</sub>	kg	0.7	1.4	2.1	1.1	2.2	3.3	1.9	3.8	5.7
定子单位质量 Unit mass of stator	M <sub>s</sub>	kg/m	2.7	2.7	2.7	4.8	4.8	4.8	8.5	8.5	8.5
定子宽度 Stator width	W <sub>s</sub>	mm	52	52	52	86	86	86	116	116	116
定子长度/数值N Stator length/value N	L <sub>s</sub>	mm	120mm/N=2, 180mm/N=3, 300mm/N=5								
定子固定孔位 Fixed stator hole position	W <sub>s1</sub>	mm	42	42	42	74	74	74	104	104	104
总安装高度 Total installation height	H	mm	34	34	34	34	34	34	36	36	36

注:1、本表数据为无强制冷却下的值。

Note: 1. The data in this table are values without forced cooling.

2. 除了尺寸规格以外, 其余规格有±10%的误差范围。

2. Except the size specification, the other specifications have an error range of 10%.

3. 本公司保有变更的权利, 请以客户确认图为主。

3. Our company reserves the right to make changes. Please give priority to the customer confirmation chart.

### 产品型号说明 Product model description

动子型号 Mover model

## TPA-P11

品牌名称 Brand: TPA  
动子型号 Mover model: P11, P12, P13

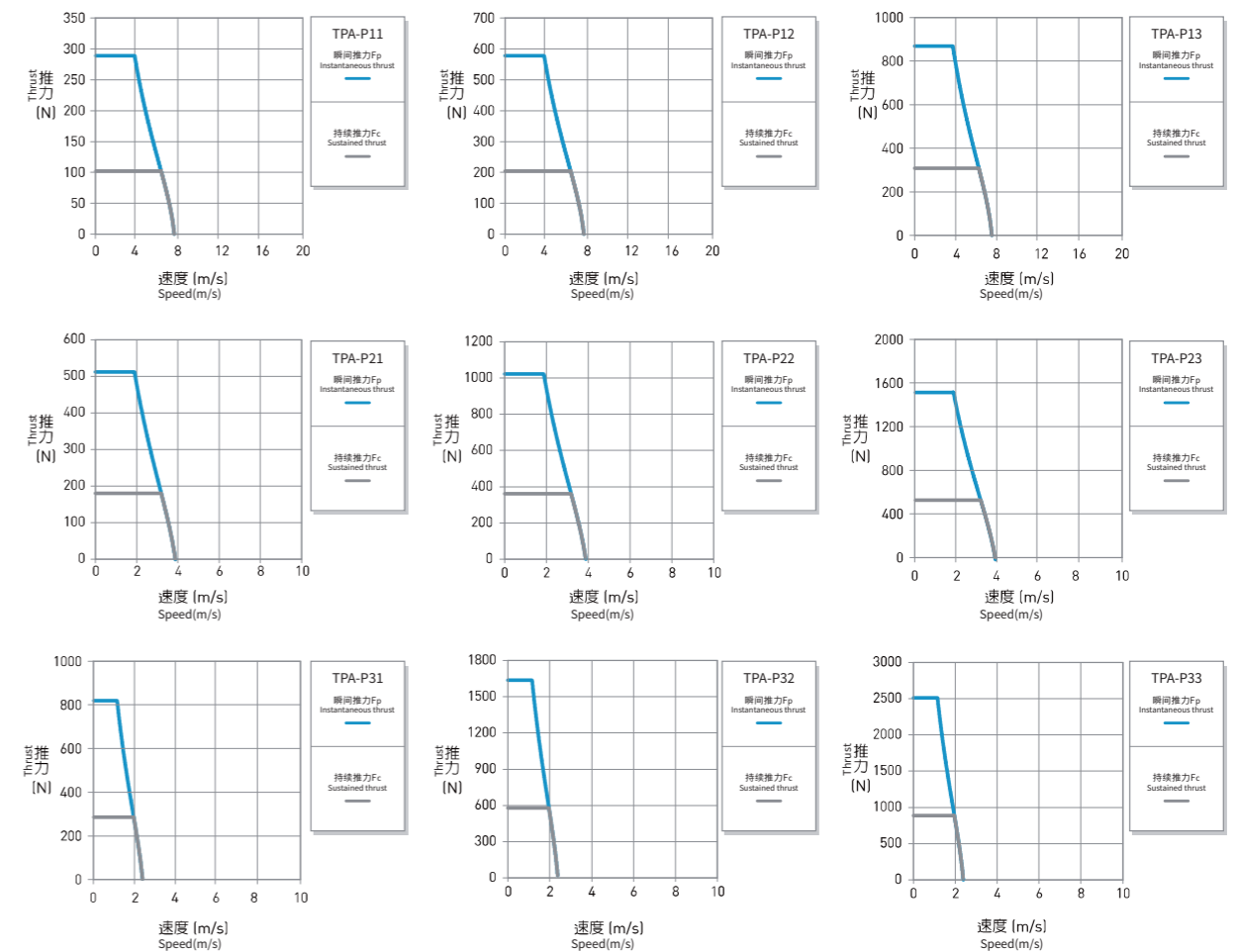
定子型号 Stator model

## TPA-PS11

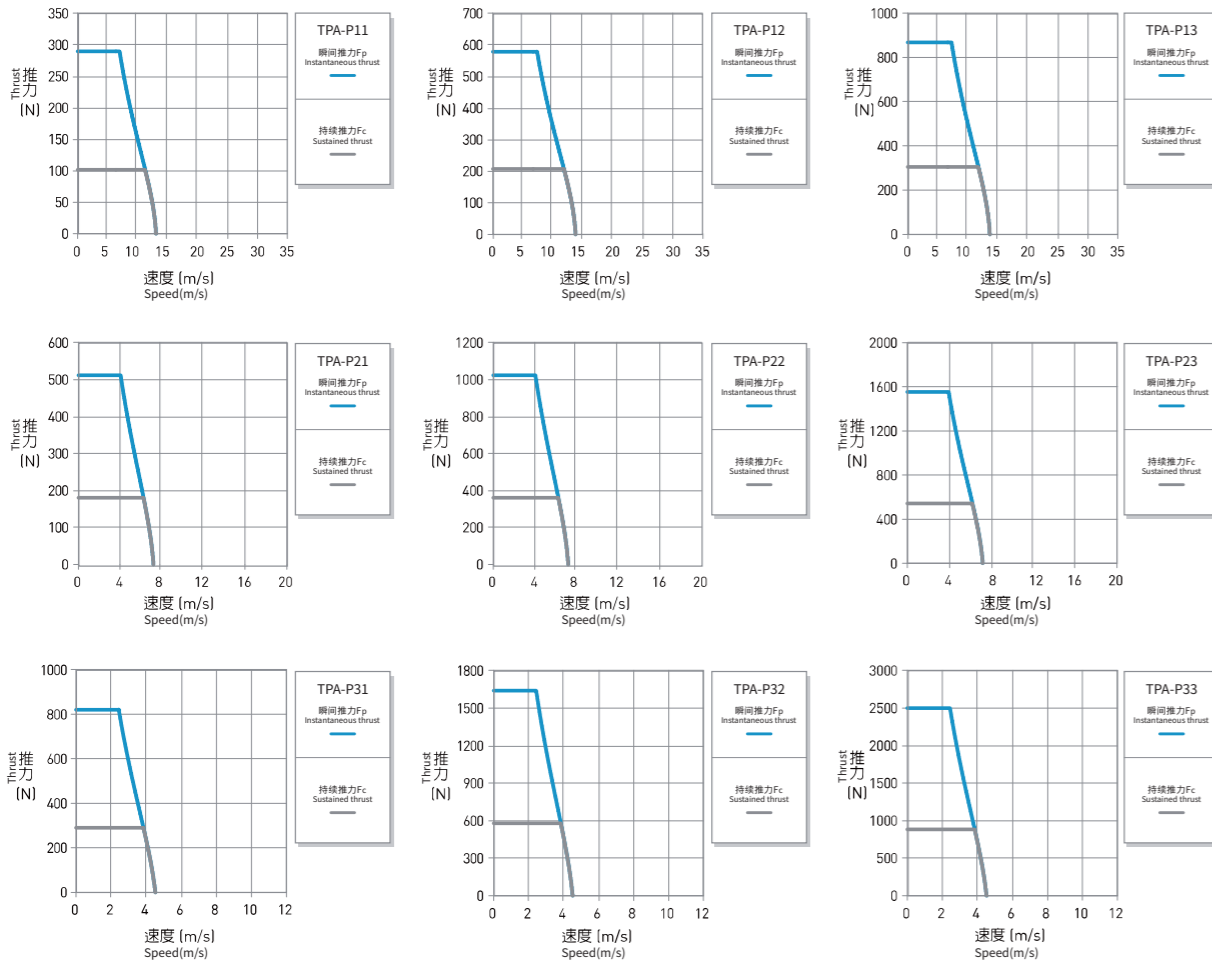
品牌名称 Brand: TPA  
定子系列 Stator Model: PS11, PS12, PS13  
长度 Length: 120mm, 180mm, 300mm

### 直线电机曲线图 Linear motor curve diagram

■ 推力与速度曲线图 (DC bus voltage=325VDC) Graph of thrust and velocity [DC bus voltage = 325Vdc]



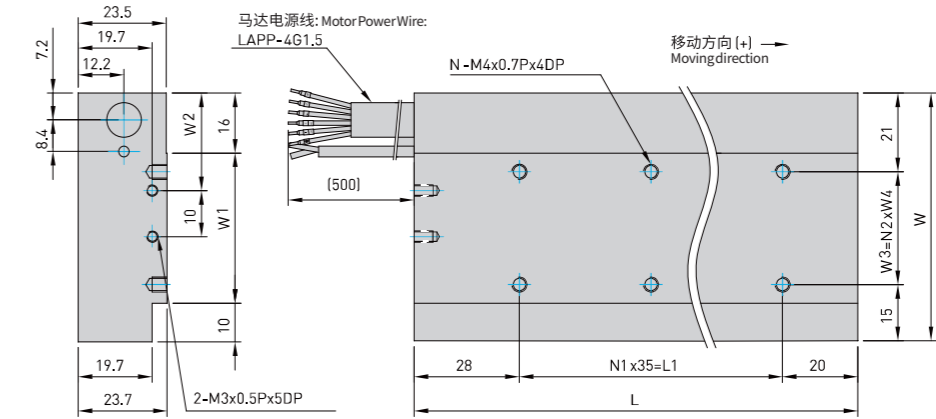
■ 推力与速度曲线图 (DC bus voltage=600VDC) Graph of thrust and velocity [DC bus voltage = 600Vdc]



TPA 动定子尺寸图  
TPA Dimension diagram of Mover & stator

TPA-P 动子尺寸图 TPA-P moving size diagram

单位:Unit: mm



型号 Model	L	L1	W	W1	W2	W3	W4	N	N1	N2
TPA-P11	118	70	56	30	26	20	20	6	2	1
TPA-P12	223	175	56	30	26	20	20	12	5	1
TPA-P13	328	280	56	30	26	20	20	18	8	1
TPA-P21	118	70	86	60	41	50	50	6	2	1
TPA-P22	223	175	86	60	41	50	50	12	5	1
TPA-P23	328	280	86	60	41	50	50	18	8	1
TPA-P31	118	70	116	90	56	80	40	9	2	2
TPA-P32	223	175	116	90	56	80	40	18	5	2
TPA-P33	328	280	116	90	56	80	40	27	8	2

- LNP3
- LNP2
- LNP
- TPA-P**
- TPA-PQ
- TPA-UH
- DDR
- 参考资料  
Reference data

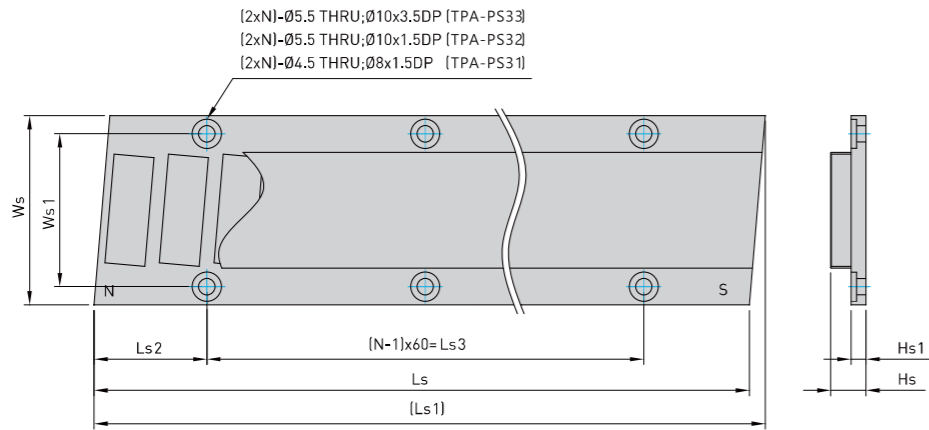


### TPA 动定子尺寸图

TPA Dimension diagram of Mover & stator

TPA-P 定子尺寸图 TPA-P stator dimensions

单位:Unit: mm



型号 Model	Ls	Ls1	Ls2	Ls3	Ws	Ws1	Hs	Hs1	N
TPA-PS11	120	124.36	31	60	52	42	9.7	4.1	2
TPA-PS12	180	184.36	31	120	52	42	9.7	4.1	3
TPA-PS13	300	304.36	31	240	52	42	9.7	4.1	5
TPA-PS21	120	122.7	30.57	60	86	74	9.7	4.1	2
TPA-PS22	180	182.7	30.57	120	86	74	9.7	4.1	3
TPA-PS23	300	302.7	30.57	240	86	74	9.7	4.1	5
TPA-PS31	120	123.04	30.37	60	116	104	11.7	6.1	2
TPA-PS32	180	183.04	30.37	120	116	104	11.7	6.1	3
TPA-PS33	300	303.04	30.37	240	116	104	11.7	6.1	5

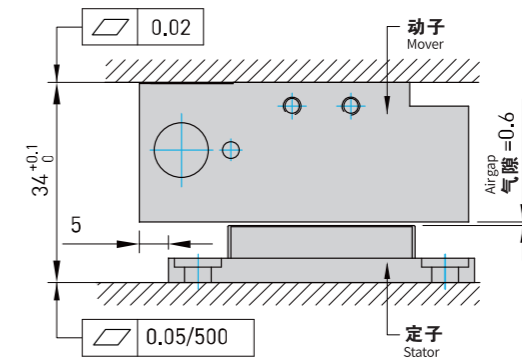
### TPA 组合尺寸图

TPA Combined dimension drawing

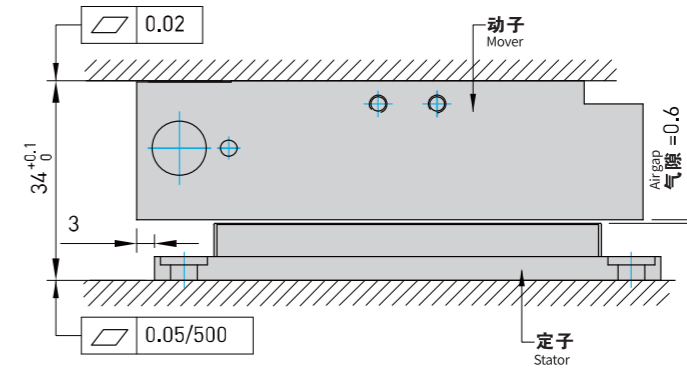
TPA 组合尺寸图 TPA Combined dimension drawing

单位:Unit: mm

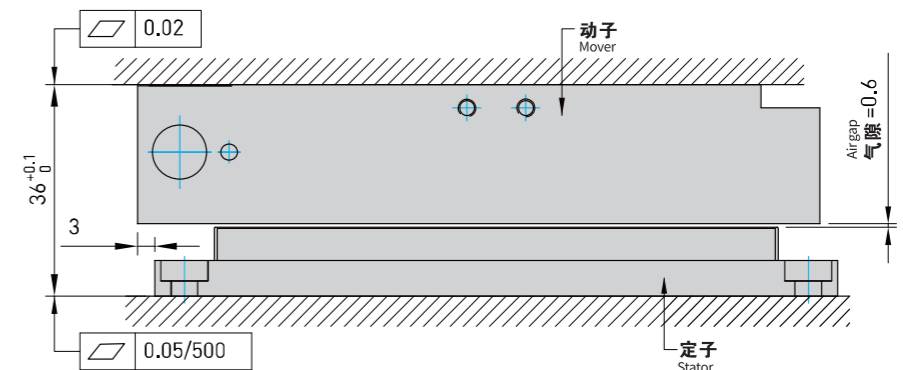
#### TPA-P1系列 TPA -P1 Series



#### TPA-P2系列 TPA -P2 Series



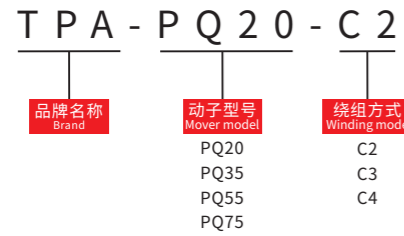
#### TPA-P3系列 TPA -P3 Series



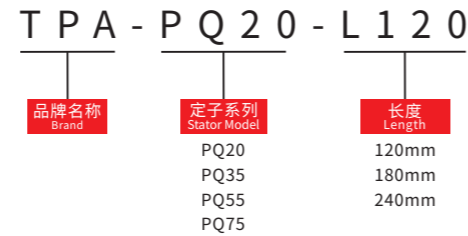
- LNP3
- LNP2
- LNP
- TPA-P**
- TPA-PQ
- TPA-UH
- DDR
- 参考资料  
Reference data

产品型号说明 Product model description

动子型号 Mover model



定子型号 Stator model



TPA-PQ系列规格

TPA-PQ series specifications

性能参数 Performance parameter	符号 Symbol	单位 Unit	PQ20-C2	PQ20-C3	PQ20-C4	PQ35-C2	PQ35-C3	PQ35-C4	PQ55-C2	PQ55-C3	PQ55-C4	PQ75-C2	PQ75-C3	PQ75-C4
绕组方式 Winding mode	-	-	C2	C3	C4	C2	C3	C4	C2	C3	C4	C2	C3	C4
最高母线电压 Max bus voltage	U <sub>bus</sub>	V	600	600	600	600	600	600	600	600	600	600	600	600
额定推力 Rated thrust	F <sub>cn</sub>	N	70	105	136	122	180	238	191	286	373	260	390	506
额定电流 Rated current	I <sub>cn</sub>	Arms	2.7	2.7	5.2	2.7	2.7	5.2	2.65	2.65	5.16	2.65	2.7	5.16
峰值推力 Peak thrust	F <sub>pk</sub>	N	150	225	301	265	395	532	418	627	835	570	855	1132
峰值电流 Peak current	I <sub>pk</sub>	Arms	9	9	18	9	9	18	9	9	18	9	9	18
推力常数±10% Constant @ 25°C±10%	K <sub>t</sub>	N/Arms	25.93	38.9	26.15	45.19	66.67	45.77	72.08	107.92	72.29	98.11	147.2	98.06
反电势常数±10% Back EMF constant±10%	K <sub>e</sub>	V <sub>(pk)</sub> /m/s	21.16	31.7	21.34	36.87	54.4	37.35	58.81	88.07	58.99	80.06	120.1	80.02
电阻(L-L)@25°C±10%(*2) Resistance @25°C±10%(*2)	R <sub>25</sub>	Ω	3.72	5.6	1.85	5.2	7.8	2.6	7.4	11.1	3.7	9.6	14.4	4.8
电感(L-L)±30%(*3) Inductance(L-L)±30%(*3)	L	mH	26.4	39.6	13.2	37	55.5	18.4	52.5	78.8	26.1	68	102	34
电气时间常数 Electrical time constant	T <sub>e</sub>	ms	7.1	7.1	7.14	7.12	7.12	7.08	7.09	7.1	7.05	7.08	7.1	7.08
磁吸力 Magnetic attraction force	F <sub>a</sub>	KN	0.28	0.3	0.6	0.5	0.8	0.96	0.78	1.2	1.56	1.1	1.1	2.2
线圈最高温度 Max coil temperature	t <sub>max</sub>	°C	120	120	120	120	120	120	120	120	120	120	120	120
极对距 Polar opposite distance	T <sub>PN</sub>	mm	24	24	24	24	24	24	24	24	24	24	24	24
动子长度 Moving length	L <sub>cn</sub>	mm	110	160	210	110	160	210	110	160	210	110	160	210
动子质量 Moving mass	M	kg	0.4	0.6	0.8	0.9	1.2	1.9	1.4	2.1	2.8	1.75	2.6	3.6
定子质量 Stator mass	M <sub>m</sub>	kg/m	2.4	2.4	2.4	3.5	3.5	3.5	5	5	5	6.4	6.4	6.4
热阻系数 Thermal resistance coefficient	K <sub>thn</sub>	°C/W	2.69	0.9	0.73	0.63	0.63	0.63	-	-	-	-	-	-

注:1、本表数据为无强制冷却下的值。

Note: 1. The data in this table are values without forced cooling.

2、除了尺寸规格以外,其余规格有±10%的误差范围。

2. Except the size specification, the other specifications have an error range of 10%.

3、本公司保有变更的权利,请以客户确认图为主。

3. Our company reserves the right to make changes. Please give priority to the customer confirmation chart.

直线电机曲线图 Linear motor curve diagram

■ 推力与速度曲线图 (DC bus voltage=600VDC) Graph of thrust and velocity (DC bus voltage = 600Vdc)



LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

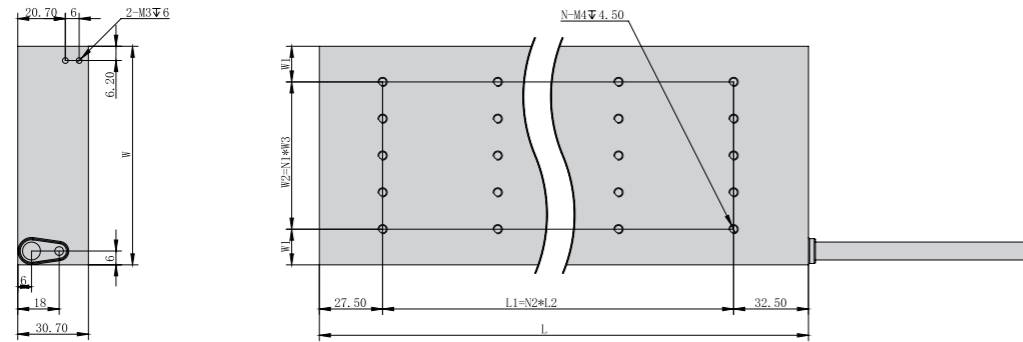
参考资料  
Reference data

### TPA动 定子尺寸图

TPA Dimension diagram of Mover & stator

TPA-PQ 动子尺寸图 TPA-PQ moving size diagram

单位:Unit: mm



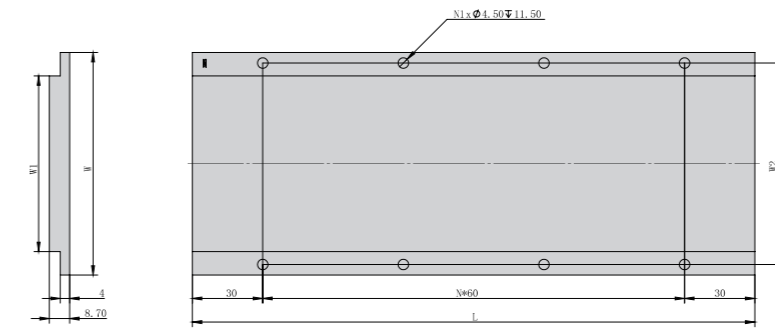
型号 Model	L	L1	L2	W	W1	W2	W3	N	N1	N2
TPA-PQ20-C2	110	50	50	40	15	10	10	4	1	1
TPA-PQ20-C3	160	100	50	40	15	10	10	6	1	2
TPA-PQ20-C4	210	150	50	40	15	10	10	8	1	3
TPA-PQ35-C2	110	50	50	55	14.5	26	13	6	2	1
TPA-PQ35-C3	160	100	50	55	14.5	26	13	9	2	2
TPA-PQ35-C4	210	150	50	55	14.5	26	13	12	2	3
TPA-PQ55-C2	110	50	50	75	17.5	40	20	6	2	1
TPA-PQ55-C3	160	100	50	75	17.5	40	20	9	2	2
TPA-PQ55-C4	210	150	50	75	17.5	40	20	12	2	3
TPA-PQ75-C2	110	50	50	95	15.5	64	16	10	4	1
TPA-PQ75-C3	160	100	50	95	15.5	64	16	15	4	2
TPA-PQ75-C4	210	150	50	95	15.5	64	16	20	4	3

### TPA 动 定子尺寸图

TPA Dimension diagram of Mover & stator

TPA-PQ 定子尺寸图 TPA-PQ stator dimensions

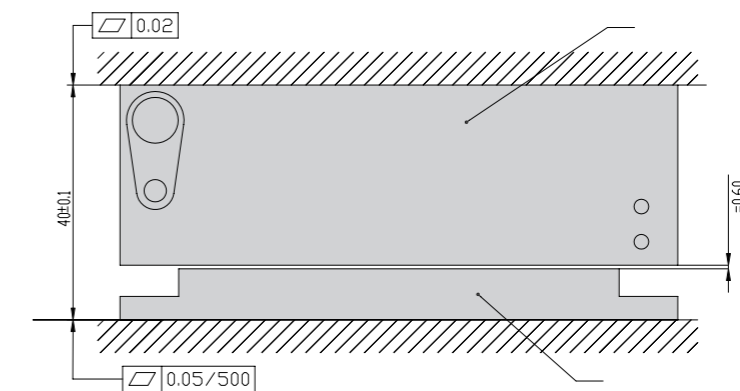
单位:Unit: mm



型号 Model	L	W	N	N1	W1	W2
TPA-PQ20-L120	120	40	4	1	20	31
TPA-PQ20-L180	180	40	6	2	20	31
TPA-PQ20-L240	240	40	8	3	20	31
TPA-PQ35-L120	120	55	4	1	35	46
TPA-PQ35-L180	180	55	6	2	35	46
TPA-PQ35-L240	240	55	8	3	35	46
TPA-PQ55-L120	120	75	4	1	55	66
TPA-PQ55-L180	180	75	6	2	55	66
TPA-PQ55-L240	240	75	8	3	55	66
TPA-PQ75-L120	120	95	4	1	75	86
TPA-PQ75-L180	180	95	6	2	75	86
TPA-PQ75-L240	240	95	8	3	75	86

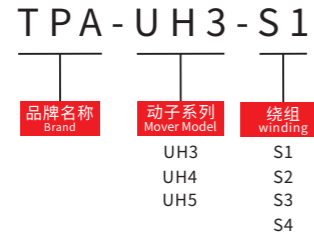
### TPA-PQ 组合尺寸图

TPA-PQ Combined dimension drawing

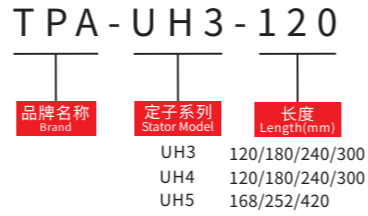


产品型号说明 Product model description

无铁芯动子型号  
Coreless mover model



无铁芯定子型号  
Coreless stator model

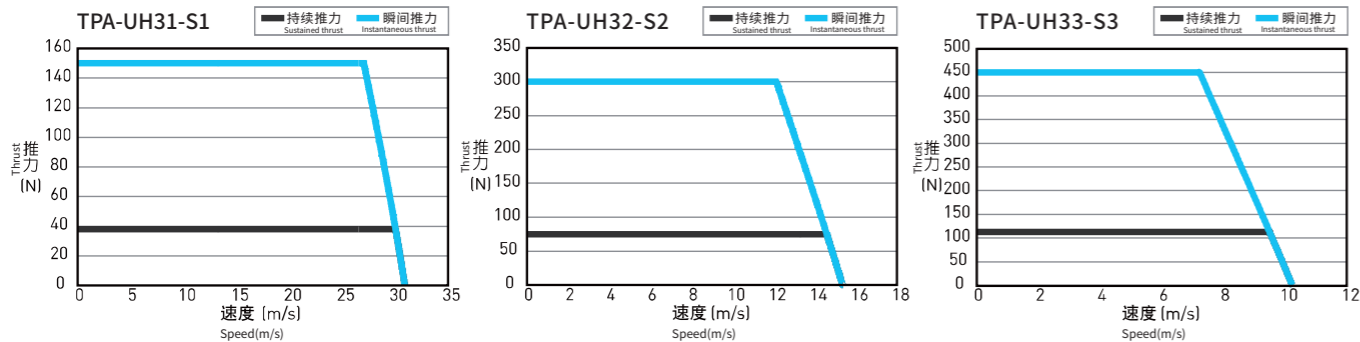


TPA-UH3 规格

TPA-UH3 series specifications

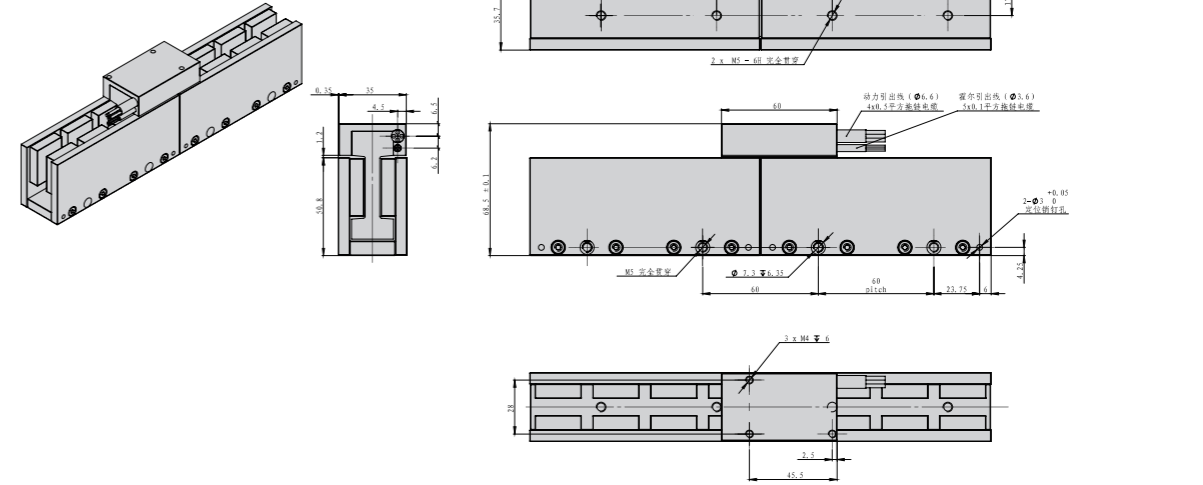
性能参数 Performance parameter	单位 Unit	TPA-UH31-S1	TPA-UH32-S2	TPA-UH33-S3
		串联S Series connection	串联S Series connection	串联S Series connection
最高母线电压 Maximum bus voltage	V	600	600	600
额定推力@100°C(*1) Rated thrust @100°C(*1)	N	40	80	120
额定电流@100°C(*1) Rated current @100°C(*1)	Arms	2.02	2.02	2.02
峰值推力 Peak force	N	240	480	720
峰值电流 Peak current	Arms	12.12	12.12	12.12
推力常数±10% Constant @ 25°C±10%	N/Arms	19.80	39.60	59.40
反电势常数±10% Back EMF constant±10%	V <sub>peak</sub> /(m/s)	16.17	32.33	48.50
电阻(L-L)@25°C±10%(*2) Resistance @25°C±10%(*2)	Ω	5.60	11.20	16.80
电感(L-L)±30%(*3) Inductance(L-L)±30%(*3)	mH	4.80	7.20	10.80
电气时间常数 Electrical time constant	ms	0.86	0.64	0.64
磁吸力 Magnetic attractive force	KN	0	0	0
线圈最高温度 Maximum coil temperature	°C	120	120	120
极对距(N-N) Polar distance (N-N)	mm	60	60	60
动子长度 Mover length	mm	60	120	180
动子质量 Mover mass	kg	0.22	0.44	0.66
定子质量 Stator mass	kg/m	8.20	8.20	8.20
电机常数@25°C Motor constant @25°C	N/sqrt(W)	6.83	9.66	11.83
最大持续热功率@100°C Max Continuous thermal power@100°C	W	46.83	93.67	140.50
热阻系数 Thermal resistance coefficient	°C/W	2.03	1.01	0.68

■ 推力与速度曲线图 (DC bus voltage=330VDC) Graph of thrust and velocity [DC bus voltage = 330Vdc]

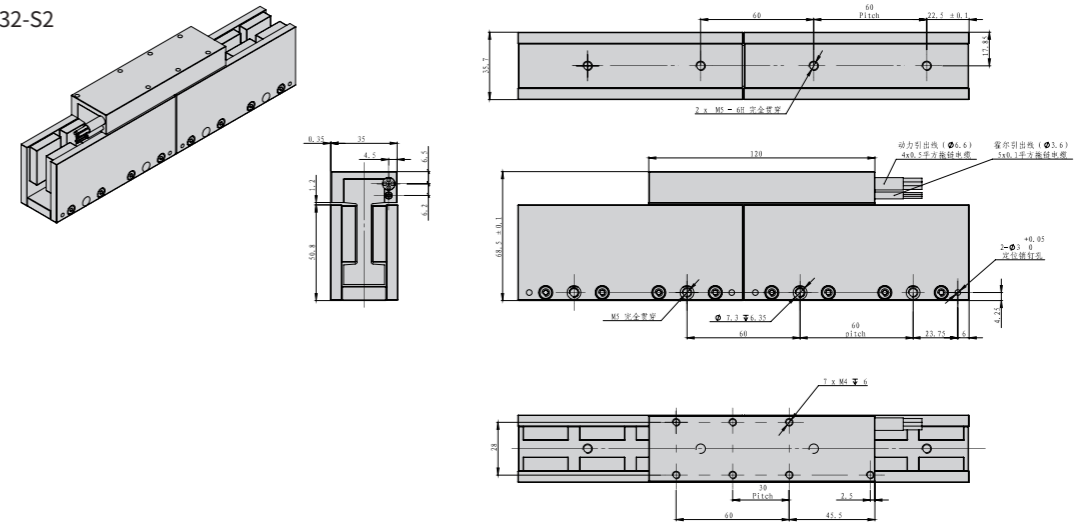


TPA 动定子尺寸图  
TPA Dimension diagram of Mover & stator

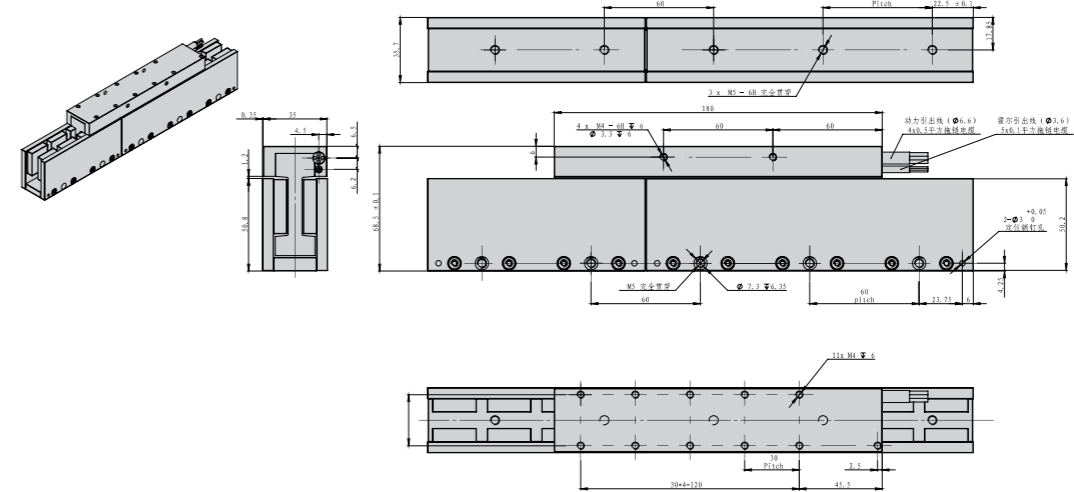
TPA-UH31-S1



TPA-UH32-S2



TPA-UH33-S3



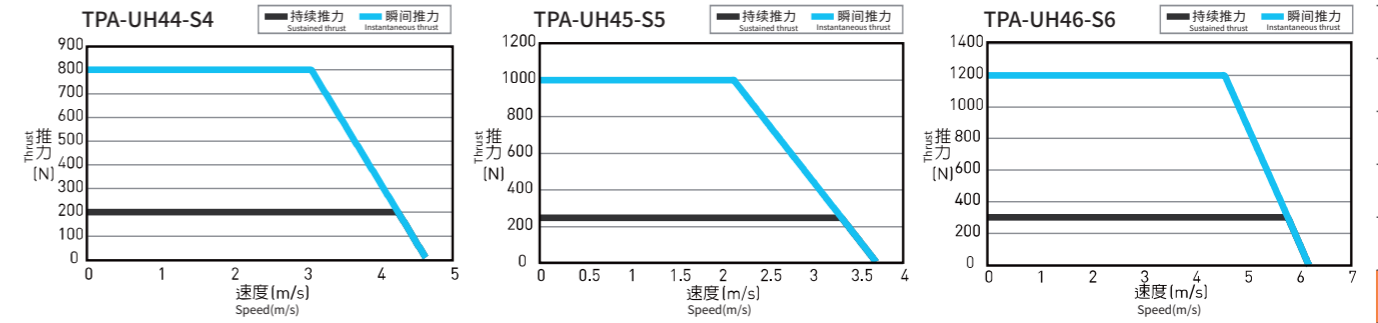
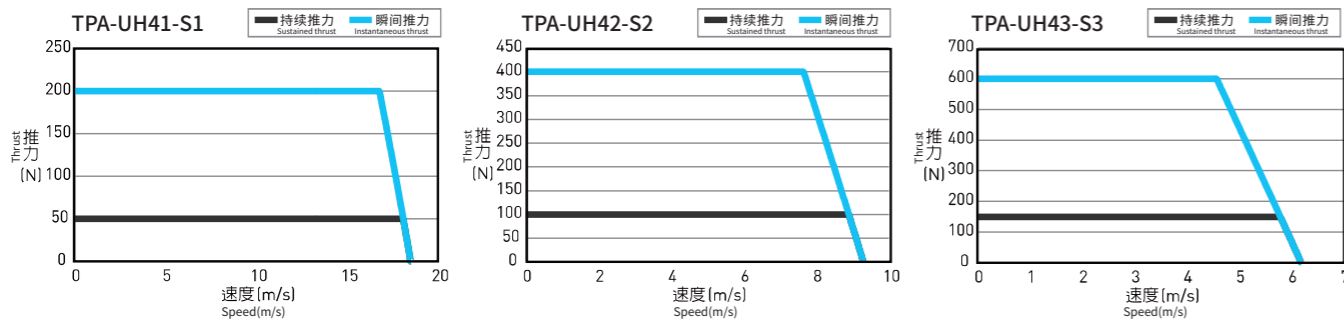
TPA-UH4 规格

TPA-UH4 series specifications

性能参数 Performance parameter	单位 Unit	TPA-UH41-S1	TPA-UH42-S2	TPA-UH43-S3	TPA-UH44-S4	TPA-UH45-S5	TPA-UH46-S6
		串联S Series connection	串联S Series connection	串联S Series connection	串联S Series connection	并联P Parallel connection	并联P Parallel connection
最高母线电压 Maximum bus voltage	V	600	600	600	600	600	600
额定推力@100°C (*1) Rated thrust @100°C (*1)	N	68	136	204	272	340	408
额定电流@100°C (*1) Rated current @100°C (*1)	A <sub>rms</sub>	2.09	2.09	2.09	2.09	4.17	4.17
峰值推力 Peak force	N	408	816	1224	1632	2040	2448
峰值电流 Peak current	A <sub>rms</sub>	12.52	12.52	12.52	12.52	25.03	25.03
推力常数±10% Constant @ 25°C±10%	N/A <sub>rms</sub>	32.60	65.20	97.80	130.40	81.50	97.80
反电势常数±10% Back EMF constant±10%	V <sub>peak</sub> /(m/s)	26.62	53.24	79.85	106.47	66.54	79.85
电阻(L-L)@25°C±10%(*2) Resistance @25°C±10%(*2)	Ω	7.12	14.24	21.36	28.48	8.90	10.68
电感(L-L)±30%(*3) Inductance(L-L)±30%(*3)	mH	6.32	12.64	18.96	25.28	7.90	9.48
电气时间常数 Electrical time constant	ms	0.89	0.89	0.89	0.89	0.89	0.89
磁吸力 Magnetic attractive force	KN	0	0	0	0	0	0
线圈最高温度 Maximum coil temperature	°C	120	120	120	120	120	120
极对距(N-N) Polar distance (N-N)	mm	60	60	60	60	60	60
动子长度 Mover length	mm	60	120	180	240	300	360
动子质量 Mover mass	kg	0.28	0.56	0.84	1.12	1.40	1.68
定子质量 Stator mass	kg/m	14	14	14	14	14	14
电机常数@25°C Motor constant @25°C	N/sqrt(W)	9.98	14.11	17.28	19.95	22.31	24.43
最大持续热功率@100°C Max Continuous thermal power@100°C	W	63.48	126.96	190.44	253.92	317.40	380.88
热阻系数 Thermal resistance coefficient	°C/W	1.50	0.75	0.50	0.37	0.30	0.25

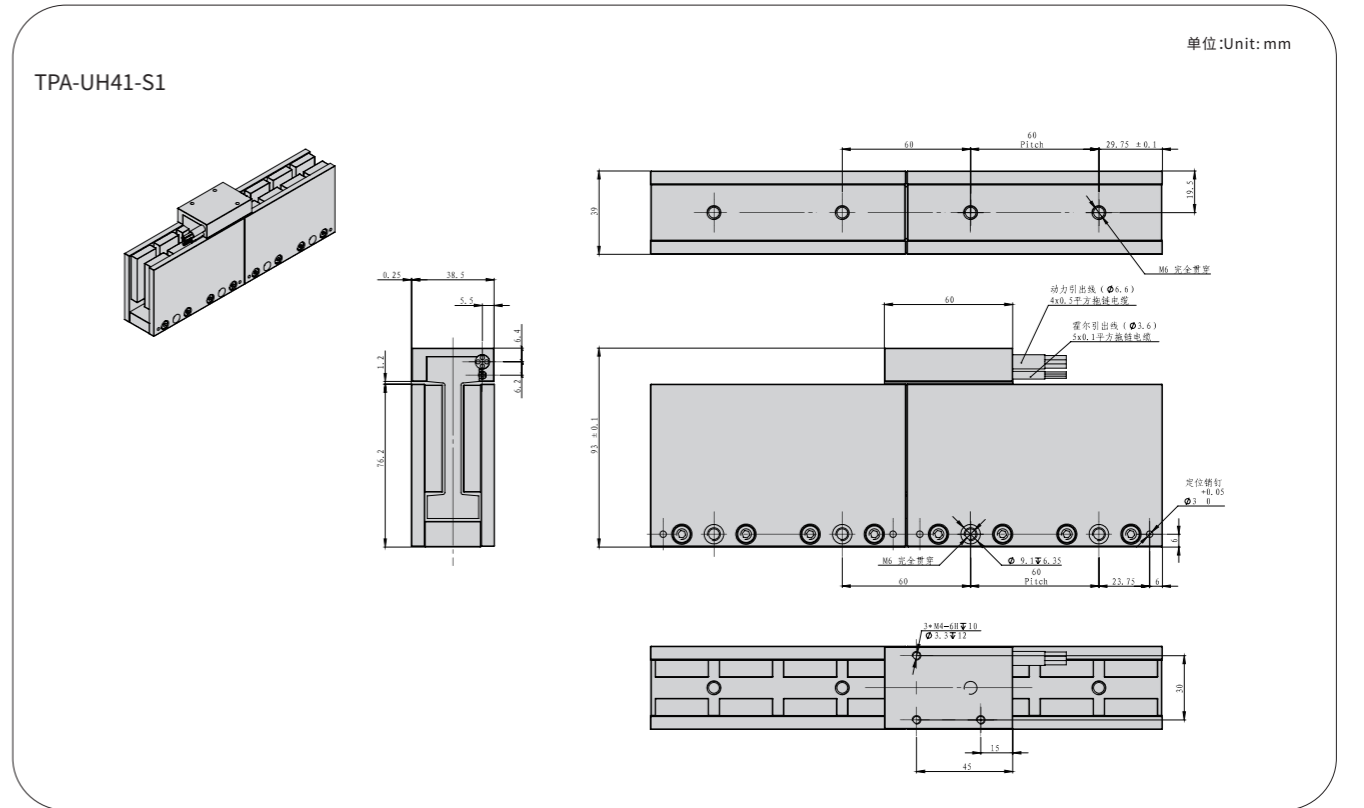
- 注: 1. 本表数据为马达在环境温度25°C且无强制冷却下的值。  
 Note: 1. The data in this table are the values of the motor at the ambient temperature of 25°C without forced cooling.
2. 热阻数据为动子安装在散热板上量测之值。  
 2. The data of thermal resistance is measured when the Mover is installed on the heat dissipation plate.
3. 除了尺寸规格以外, 其余规格有±10%的误差范围。  
 3. Except the size specification, the other specifications have an error range of 10%.
4. 本公司保有变更的权利, 请以客户确认图为主。  
 4. Our company reserves the right to make changes. Please give priority to the customer confirmation chart.

■ 推力与速度曲线图 (DC bus voltage=330VDC) Graph of thrust and velocity [DC bus voltage = 330Vdc]



TPA 动 定子尺寸图

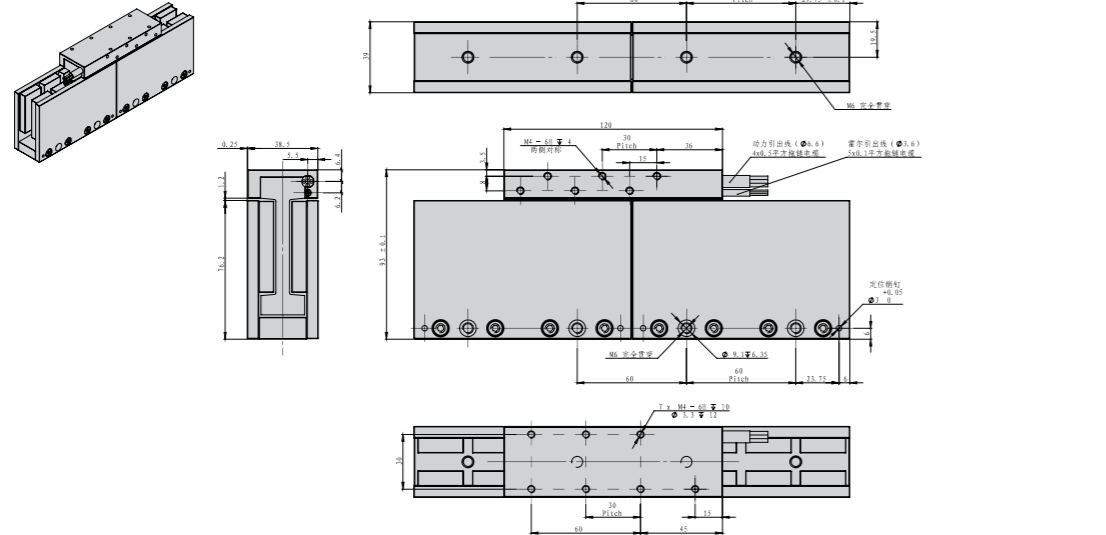
TPA Dimension diagram of Mover & stator



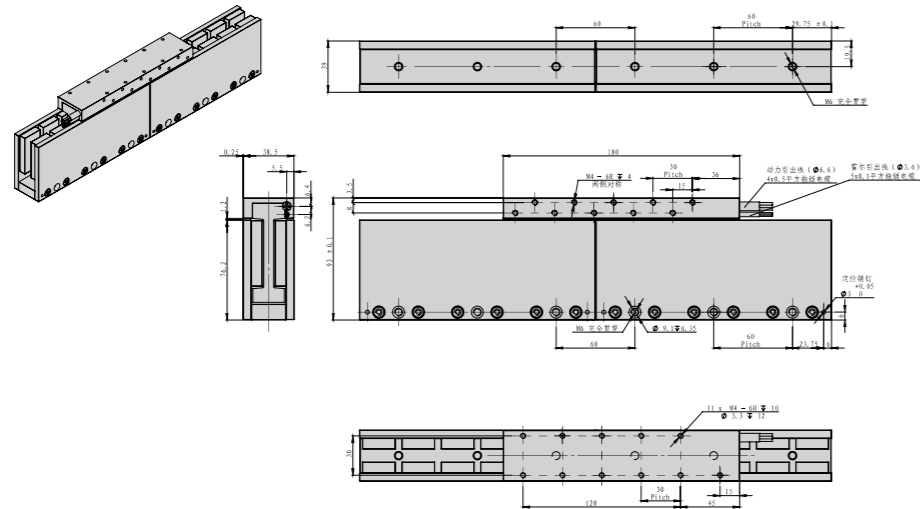
TPA动 定子尺寸图

TPA Dimension diagram of Mover & stator

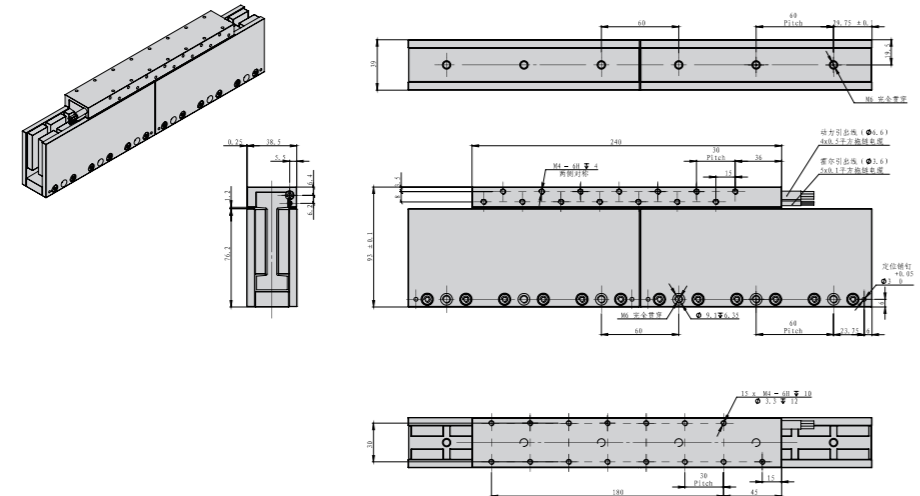
TPA-UH42-S2



TPA-UH43-S3



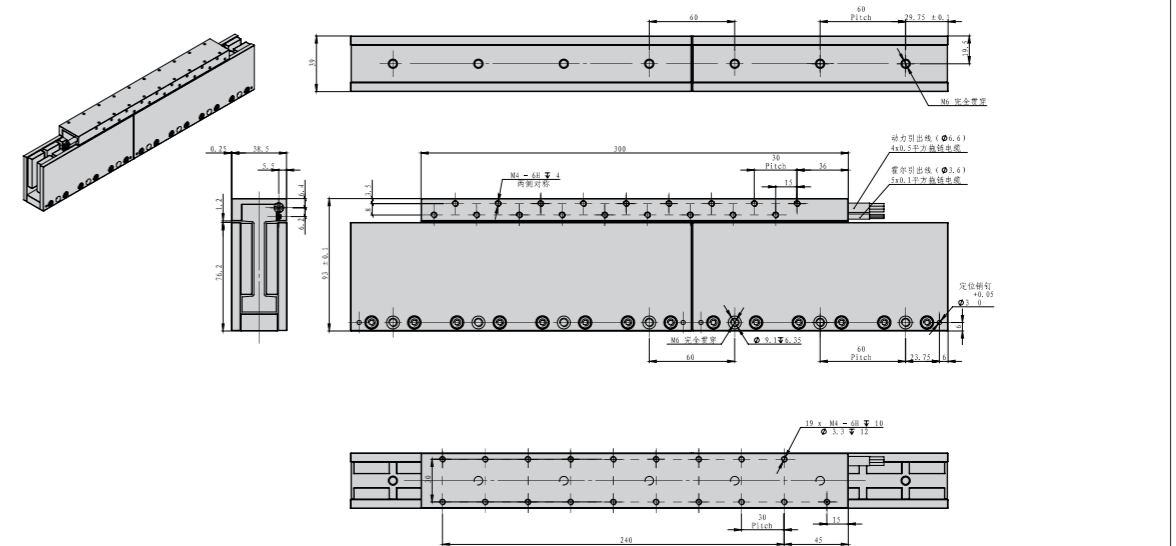
TPA-UH44-S4



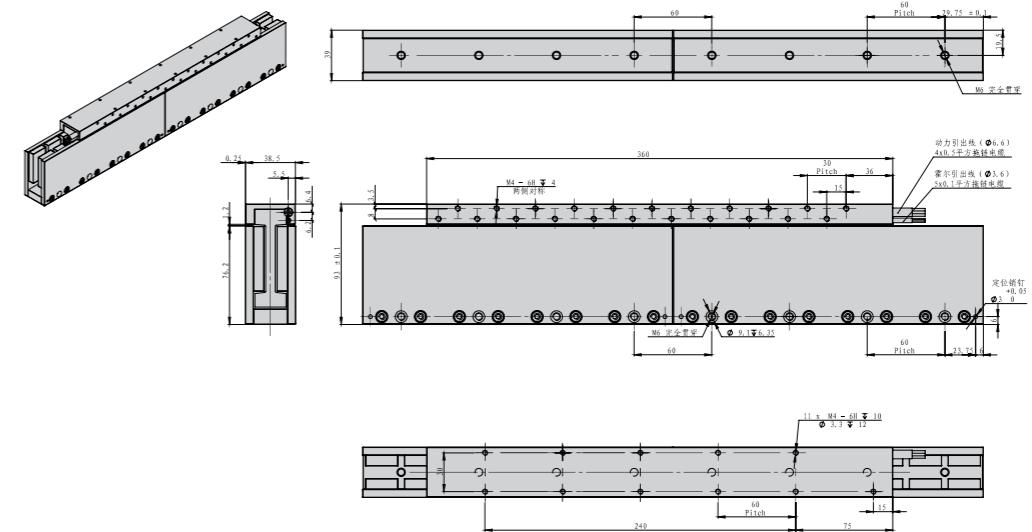
TPA动 定子尺寸图

TPA Dimension diagram of Mover & stator

TPA-UH45-S5



TPA-UH46-S6

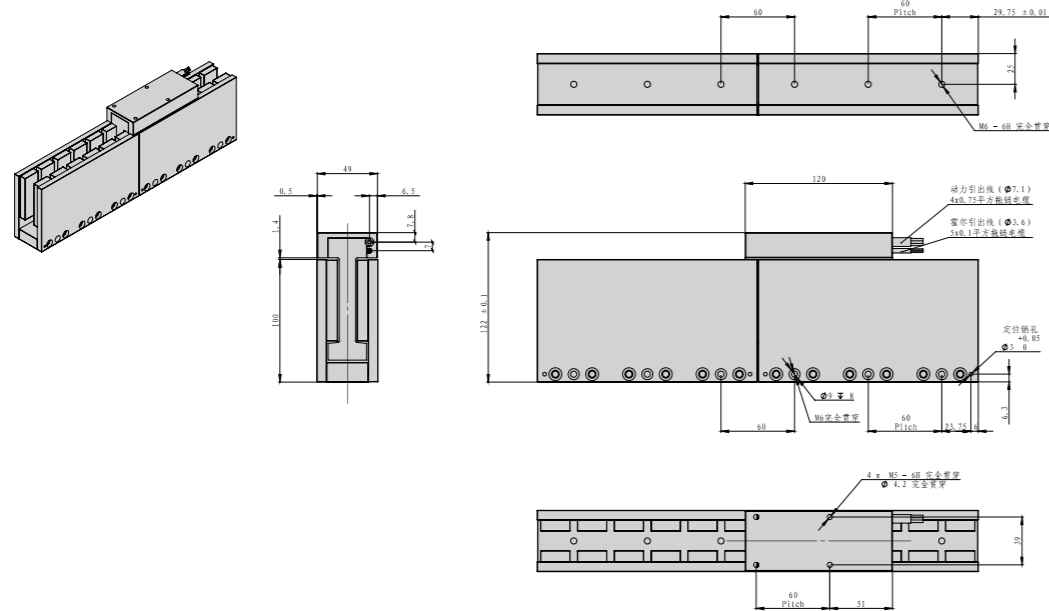




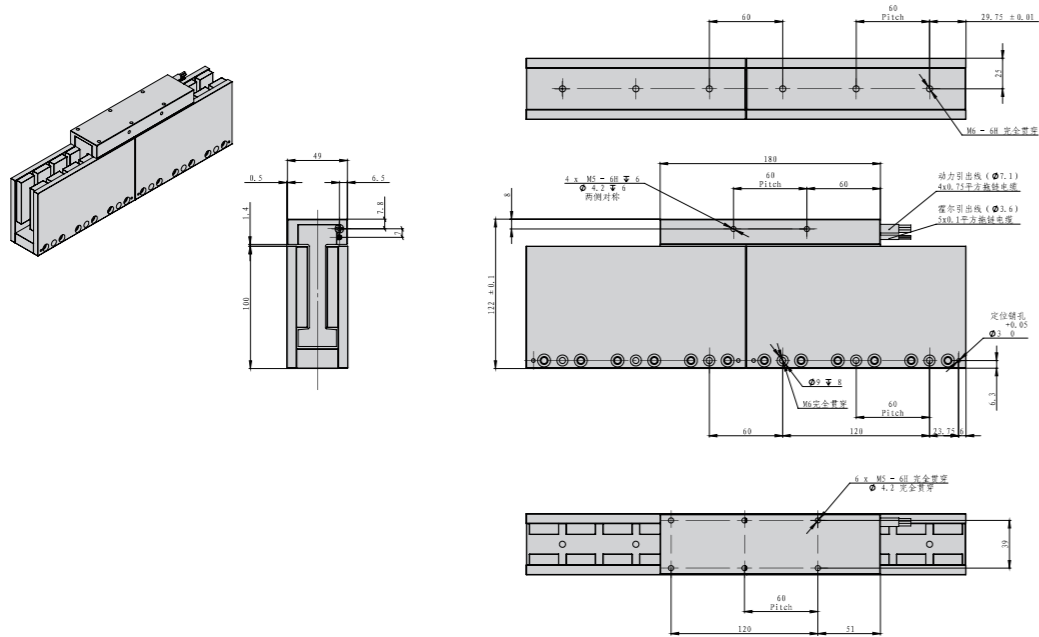
TPA动 定子尺寸图  
TPA Dimension diagram of Mover & stator

TPA-UH52-S2

单位:Unit:mm



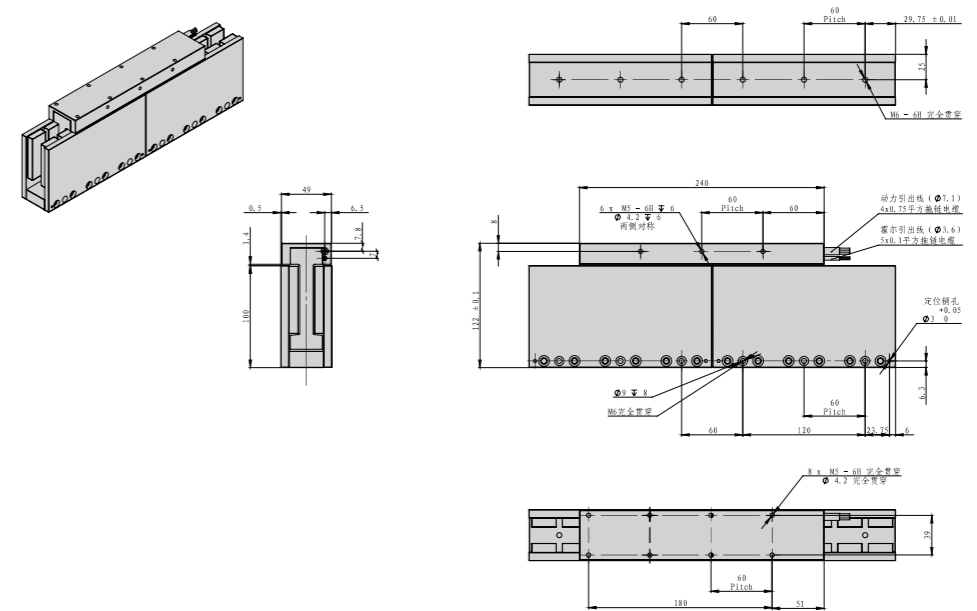
TPA-UH53-S3



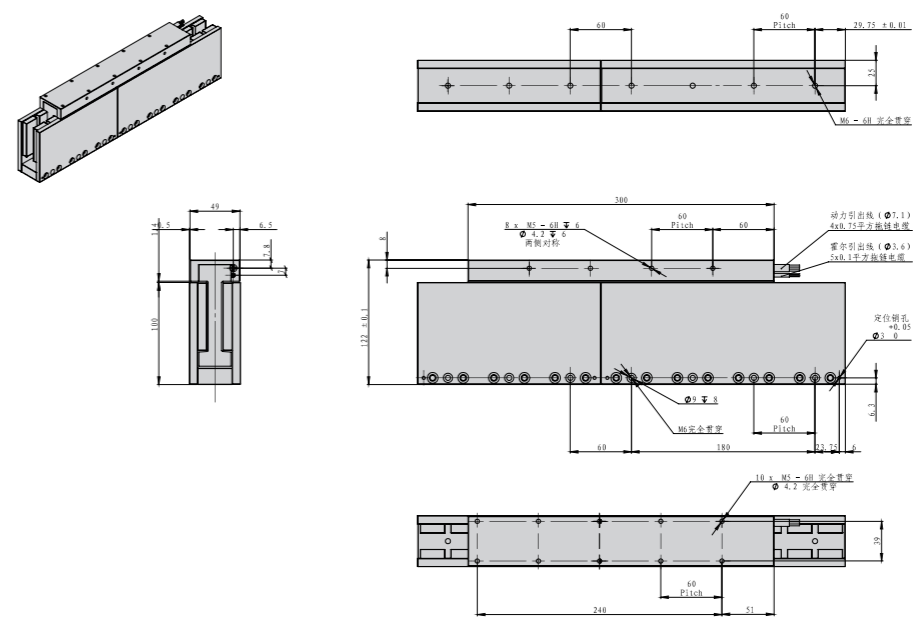
TPA动 定子尺寸图  
TPA Dimension diagram of Mover & stator

TPA-UH54-S4

单位:Unit:mm



TPA-UH55-S5



LNP3
LNP2
LNP
TPA-P
TPA-PQ
<b>TPA-UH</b>
DDR
参考资料 Reference data

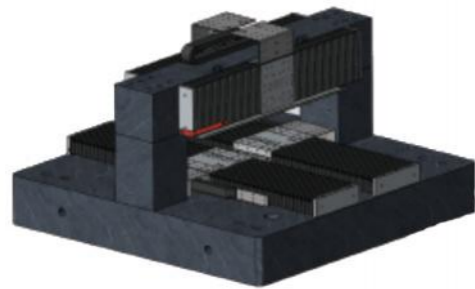




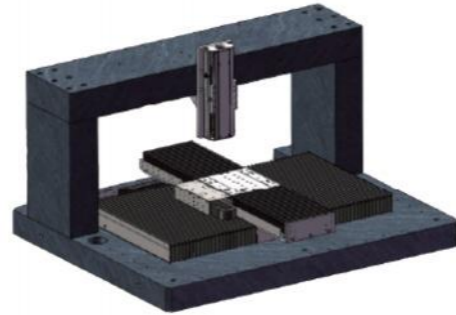
# 定制化精密直线电机平台

Customized Precise Linear Motor Actuator Stage

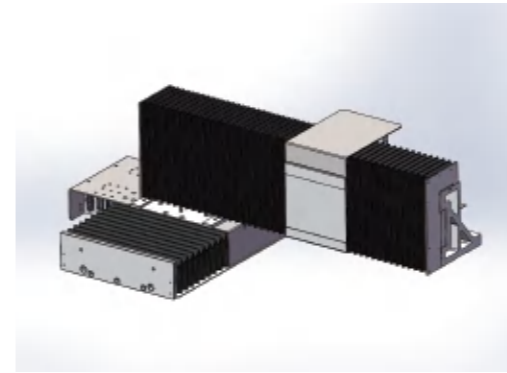
- LNP3
- LNP2
- LNP
- TPA-P
- TPA-PQ
- TPA-UH
- DDR
- 参考资料  
Reference data



双XY桥架平台  
Double XY bridge Stage



XYZ 轴平台  
XYZ Axis Stage



XY 悬臂  
Cantilever Type



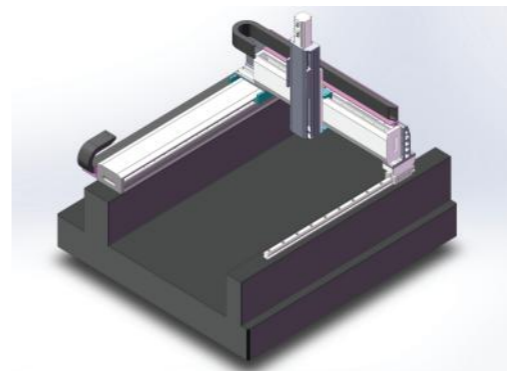
XY 平台  
Cross Type



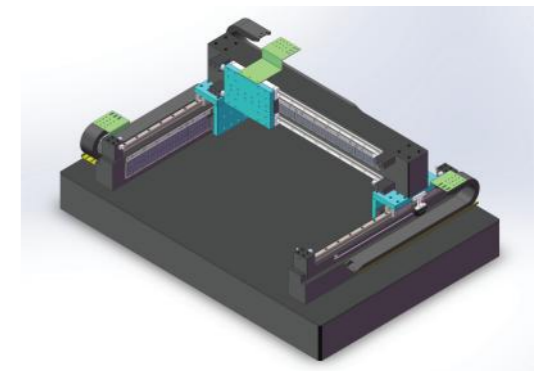
高精密运动控制平台  
High precision motion control platform



气浮平台  
Air floating Stage



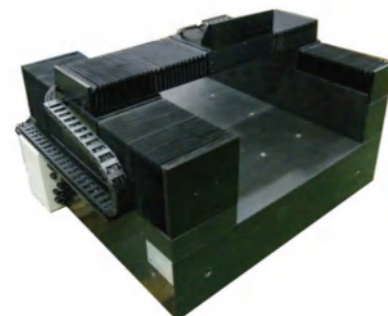
辅轨龙门式平台  
Gantry Linear Motor With Auxiliary Rails



双驱龙门式平台  
Double-drive Gantry Type



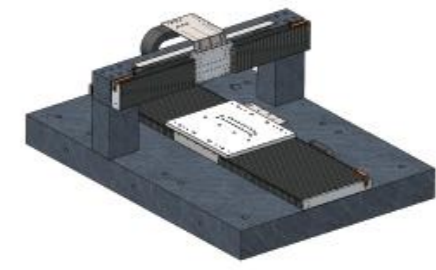
XY轴平台  
XY Stage



龙门双驱平台  
Double Drive Gantry Stage



XY 平台双动子  
XY Stage Double Movers



XY 桥架标准平台  
XY bridge standard stage

\*更多组合形式请咨询我司相关人员。For more combination forms, please consult relevant personnel of our company.

## 直驱旋转电机

Rotary Motor



- 精度高、响应快  
High precision and fast response.
- 节能、发热量低  
Energy saving and low calorific value.
- 能承受突变的外力  
Able to withstand sudden external forces.
- 惯量匹配范围大  
Large matching range of inertia.
- 简化机械设计, 缩小设备尺寸  
Simplify mechanical design and reduce equipment size.

## TPA-M-112系列规格 (外转子型)

TPA-M-112 series specifications (Outer rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-112-065	TPA-M-112-085	TPA-M-112-095
连续转矩 Continuous torque	N.m	3	3	8.5
连续电流 Continuous current	A rms	2.5	2.5	2.5
最大转矩 Maximum torque	N.m	9	9	26
最大电流 Maximum current	A rms	7.5	7.5	7.5
转矩常数 Torque constant	Nm/Arms	1.2	1.2	3.4
电阻 Resistance	ohms(25°C)	2.2	2.2	4.6
电感 Inductance	mH(25°C)	1.8	1.8	4.2
极数 Number of poles	-	28	28	28
反电动势常数 Back emf constant	Vrms/rad/s	1	1	2.8
电机常数 Motor constant	Nm/√W	0.6	0.6	1.1
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0026	0.003	0.0038
电机重量 Motor weight	Kg	2.7	3	4.5
最高转速 Maximum speed	rmp	350	350	250
定位精度 Positioning accuracy	Arc sec	±20	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±2.5	±1.5
分辨率 DPI	lines/Rev, sin/cos	8192 (lines/Rev)	11740 (sin/cos)	8192 (sin/cos)
最大轴向载荷 Maximum axial load	N	2500	2000	2500
最大径向载荷 Maximum radial load	N.m	20	20	20
轴向偏摆 Axial deflection	mm	0.005	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005	0.005

### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.

### 安装尺寸图

Installation dimension drawing

单位:Unit:mm

#### TPA-M-112-065

电机反馈线  
Motor feedback line  
电机动力线  
Motor power line  
电机hall线  
Hall line of motor

#### TPA-M-112-085

转子 Rotor  
定子 Stator  
视图 A View A

备注:  
1、测量时环境温度为25°C, 取决于散热环境。  
2、括号内为可选跳动。  
3、工作温度:0-40°C (无结冰), 工作湿度10%RH-80%RH (无冷凝)。

Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram

正常安装 Normal installation  
倒装 Inverted installation  
侧装 Side mounting

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## TPA-M-140系列规格(外转子型)

### TPA-M-140 series specifications (Outer rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-140-050	TPA-M-140-080
连续转矩 Continuous torque	N.m	6	10.5
连续电流 Continuous current	A rms	2.8	2.5
最大转矩 Maximum torque	N.m	16	28
最大电流 Maximum current	A rms	7	7
转矩常数 Torque constant	Nm/Arms	2.4	4.2
电阻 Resistance	ohms(25°C)	4.5	6.6
电感 Inductance	mH(25°C)	6.6	5.7
极数 Number of poles	-	28	28
反电动势常数 Back emf constant	Vrms/rad/s	2	3.4
电机常数 Motor constant	Nm/√W	0.8	1.2
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0045	0.0076
电机重量 Motor weight	Kg	3.4	5.6
最高转速 Maximum speed	rmp	600	350
定位精度 Positioning accuracy	Arc sec	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5
分辨率 DPI	lines/Rev, sin/cos	8192 (lines/round)	8192 (lines/round)
最大轴向载荷 Maximum axial load	N	1500	200
最大径向载荷 Maximum radial load	N.m	10	20
轴向偏摆 Axial deflection	mm	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.

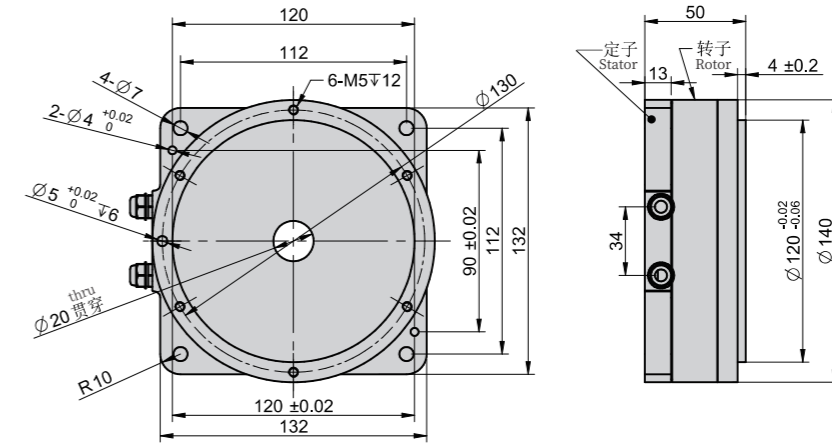


**安装尺寸图**

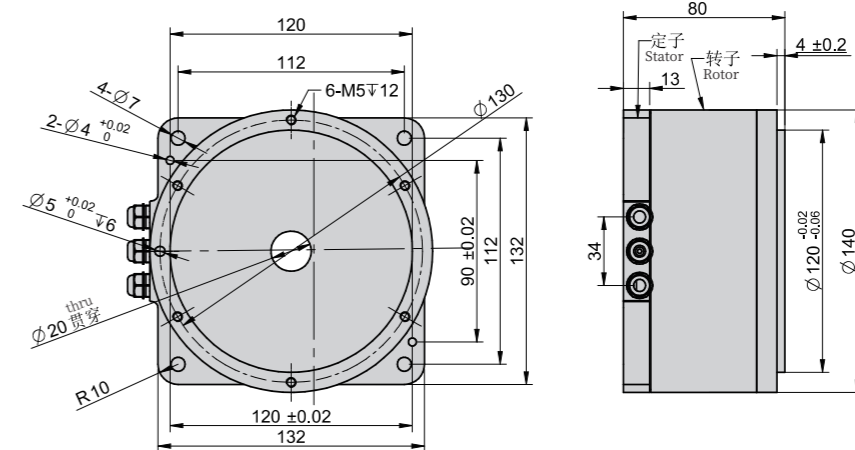
Installation dimension drawing

TPA-M-140-050

单位:Unit:mm



TPA-M-140-080



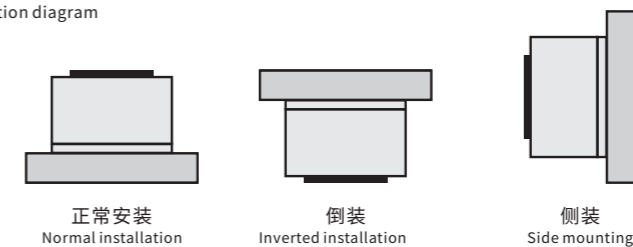
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-170系列规格(外转子型)

### TPA-M-170 series specifications (Outer rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model					
		TPA-M-170-050	TPA-M-170-095	TPA-M-170-110	TPA-M-170-125	TPA-M-170-130	TPA-M-170-155
连续转矩 Continuous torque	N.m	4.5	23.8	23.8	41.8	41.8	59.5
连续电流 Continuous current	A rms	1.4	2.5	2.5	2.5	2.5	2.5
最大转矩 Maximum torque	N.m	14	71	71	125	125	179
最大电流 Maximum current	A rms	4.2	7.5	7.5	7.5	7.5	7.5
转矩常数 Torque constant	Nm/Arms	3.4	9.5	9.5	16.7	16.7	23.8
电阻 Resistance	ohms(25°C)	6	2.52	9.4	3.96	14.4	5.22
电感 Inductance	mH(25°C)	7.6	5.4	17.9	32.0	34.7	30
极数 Number of poles	-	30	30	30	30	30	30
反电动势常数 Back emf constant	Vrms/rad/s	2.8	7.8	7.8	13.6	13.6	19.4
电机常数 Motor constant	Nm/√W	0.9	4.3	2.2	6.1	3.2	7.5
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0068	0.018	0.023	0.028	0.032	0.037
电机重量 Motor weight	Kg	3.9	9.5	10.5	13.5	14.2	17.6
最高转速 Maximum speed	rmp	450	190	190	150	150	120
定位精度 Positioning accuracy	Arc sec	±20	±20	±20	±20	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5	±1.5	±1.5	±1.5	±1.5
分辨率 DPI	sin/cos	11740	11740	11740	11740	11740	11740
最大轴向载荷 Maximum axial load	N	4000	15000	15000	15000	15000	15000
最大径向载荷 Maximum radial load	N.m	40	150	150	150	150	150
轴向偏摆 Axial deflection	mm	0.005	0.005	0.005	0.005	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005	0.005	0.005	0.005	0.005

**注:【通用规格】**

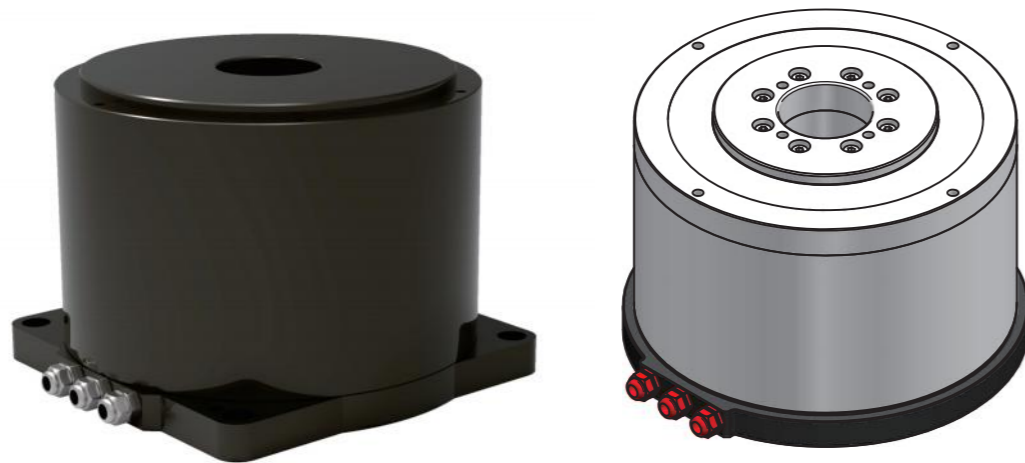
Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.

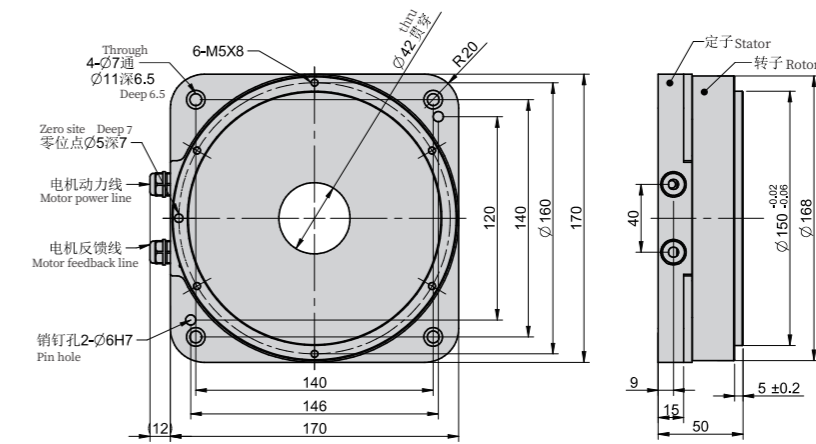


**安装尺寸图**

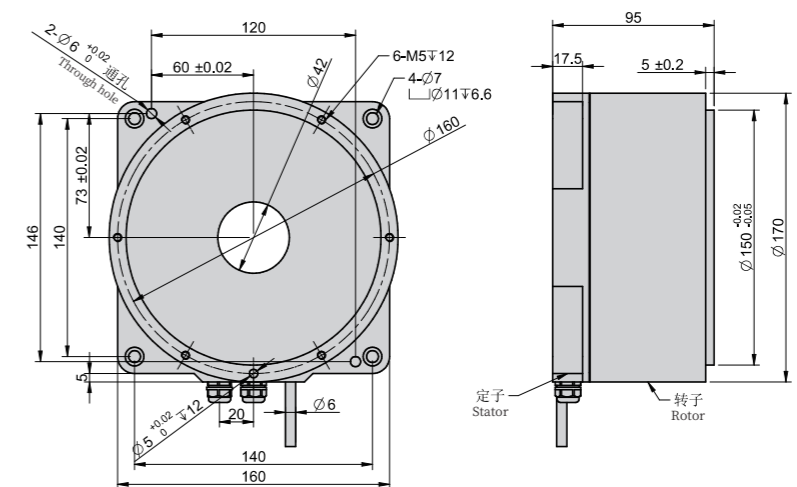
Installation dimension drawing

### TPA-M-170-050

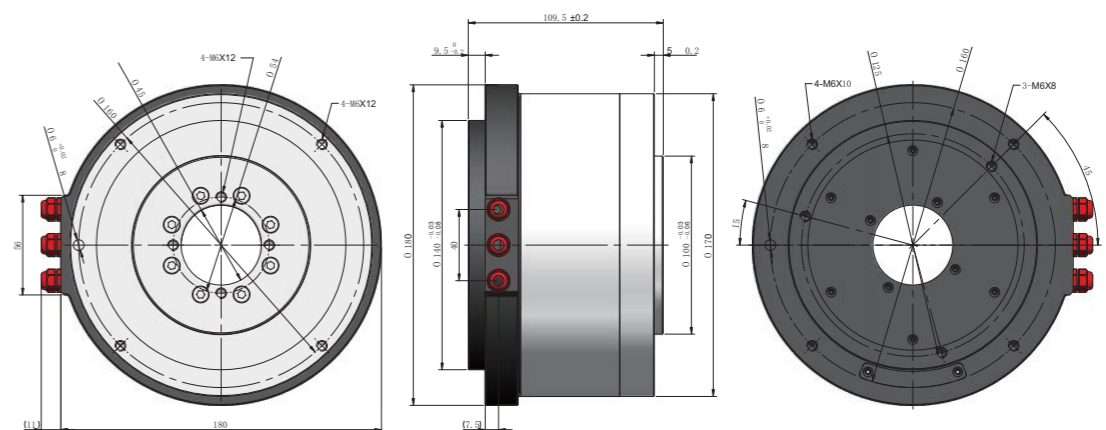
单位:Unit:mm



### TPA-M-170-095



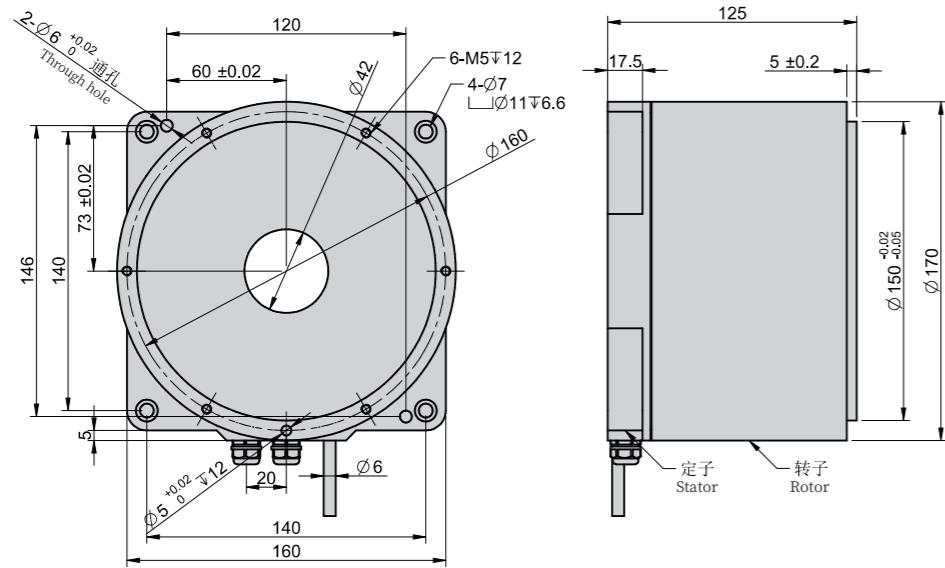
### TPA-M-170-110



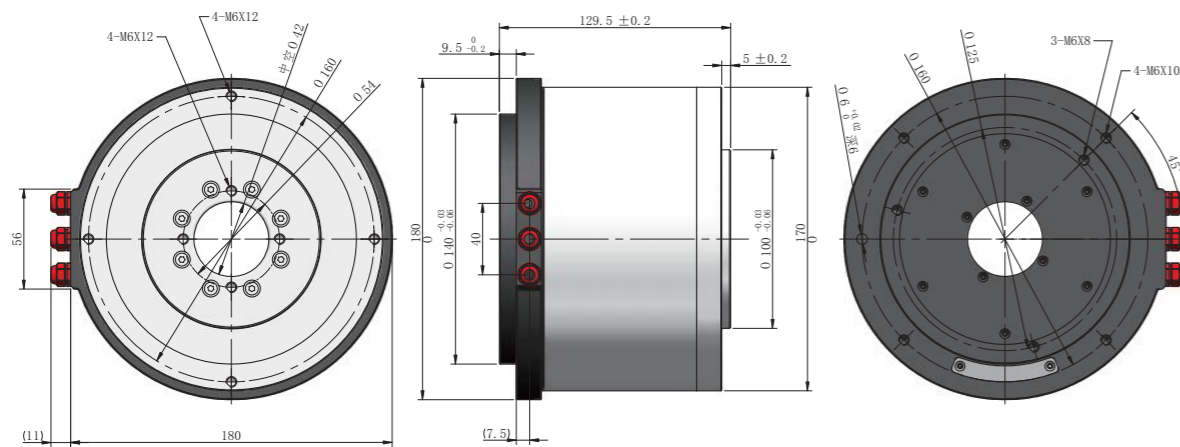
安装尺寸图  
Installation dimension drawing

单位:Unit: mm

TPA-M-170-125



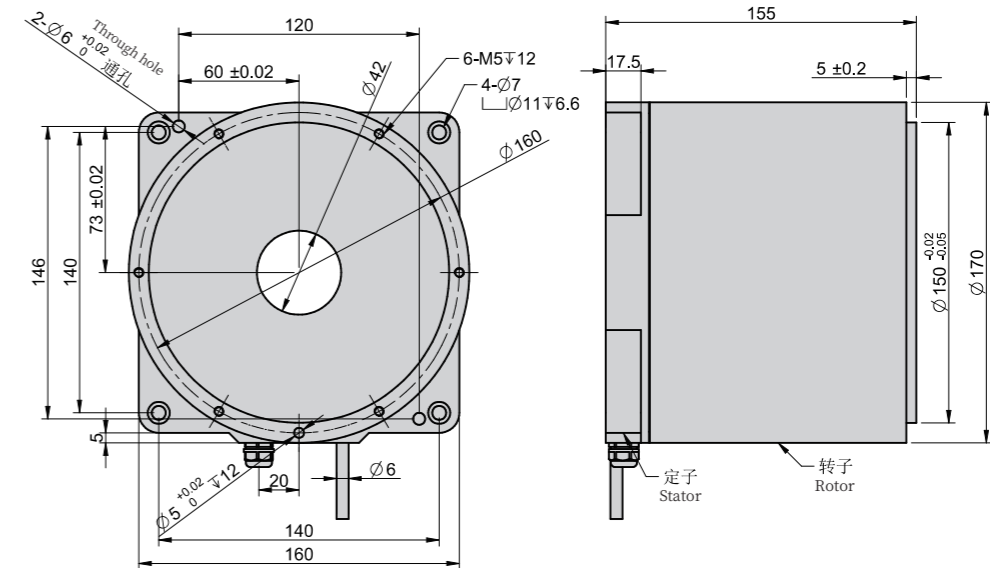
TPA-M-170-130



安装尺寸图  
Installation dimension drawing

单位:Unit: mm

TPA-M-170-155



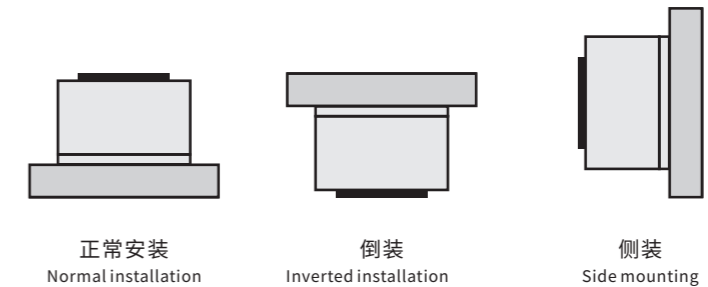
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-190系列规格(外转子型)

### TPA-M-190 series specifications (Outer rotor type)

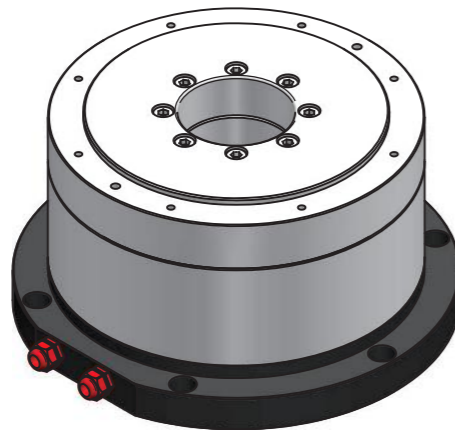
性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-190-100
连续转矩 Continuous torque	N.m	20.0
连续电流 Continuous current	A rms	3
最大转矩 Maximum torque	N.m	60
最大电流 Maximum current	A rms	9
转矩常数 Torque constant	Nm/Arms	6.7
电阻 Resistance	ohms(25°C)	9.4
电感 Inductance	mH(25°C)	17.9
极数 Number of poles	-	30
反电动势常数 Back emf constant	Vrms/rad/s	5.5
电机常数 Motor constant	Nm/√W	1.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.018
电机重量 Motor weight	Kg	9.5
最高转速 Maximum speed	rmp	200
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	11740
最大轴向载荷 Maximum axial load	N	6000
最大径向载荷 Maximum radial load	N.m	60
轴向偏摆 Axial deflection	mm	0.005/0.002
径向偏摆 Radial deflection	mm	0.005/0.002

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

其他构造:外转子型, 励磁方式:三相  
Other structures: Outer rotor type, excitation mode: three-phase.

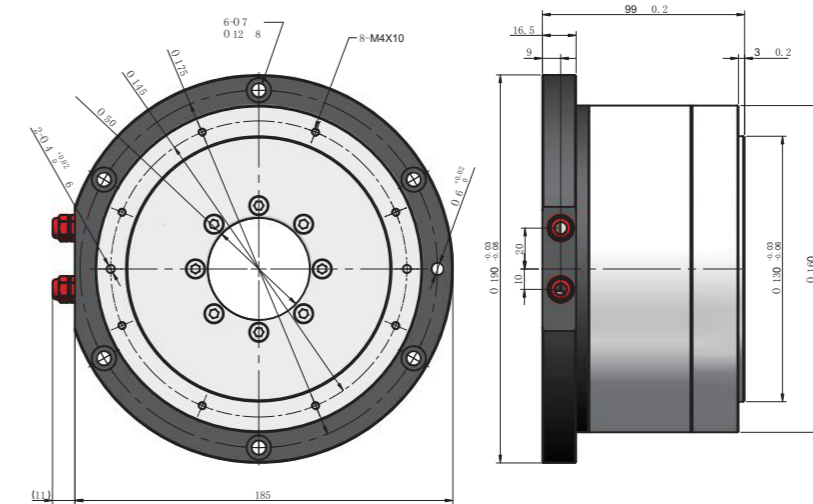


#### 安装尺寸图

Installation dimension drawing

### TPA-M-190-100

单位:Unit:mm



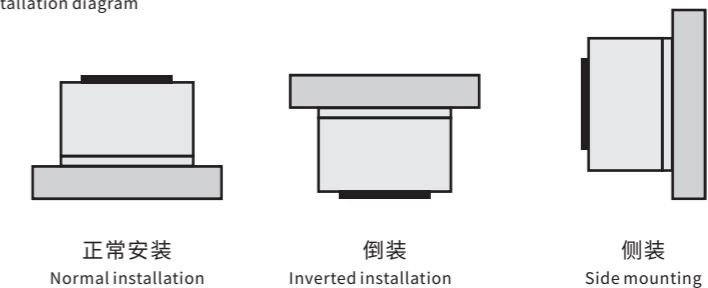
#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



正常安装  
Normal installation

倒装  
Inverted installation

侧装  
Side mounting

## TPA-M-220系列规格(外转子型)

### TPA-M-220 series specifications (Outer rotor type)

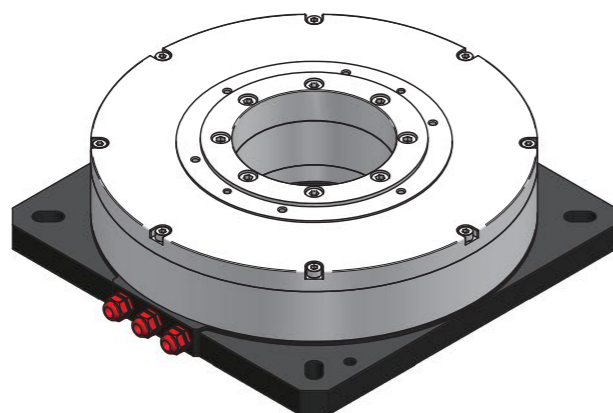
性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-220-062
连续转矩 Continuous torque	N.m	10.2
连续电流 Continuous current	A rms	3
最大转矩 Maximum torque	N.m	30.6
最大电流 Maximum current	A rms	9
转矩常数 Torque constant	Nm/Arms	3.4
电阻 Resistance	ohms(25°C)	13.6
电感 Inductance	mH(25°C)	7.8
极数 Number of poles	-	40
反电动势常数 Back emf constant	Vrms/rad/s	2.8
电机常数 Motor constant	Nm/√W	5.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.032
电机重量 Motor weight	Kg	8.9
最高转速 Maximum speed	rmp	320
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	16384
最大轴向载荷 Maximum axial load	N	5000
最大径向载荷 Maximum radial load	N.m	100
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

其他构造:外转子型, 励磁方式:三相  
 Other structures: Outer rotor type, excitation mode: three-phase.

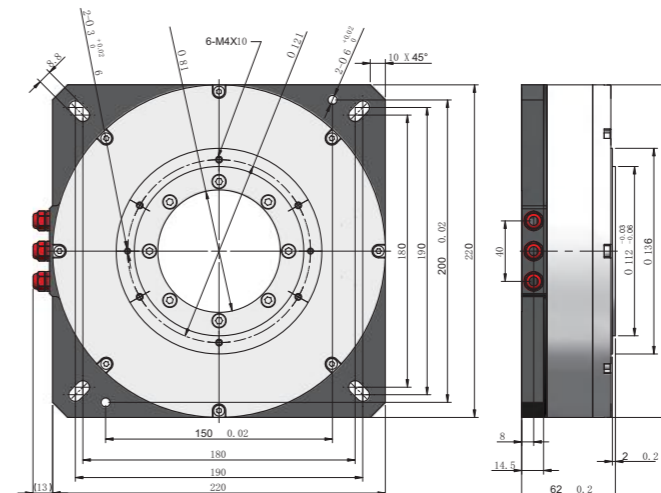


#### 安装尺寸图

Installation dimension drawing

### TPA-M-220-062

单位:Unit: mm



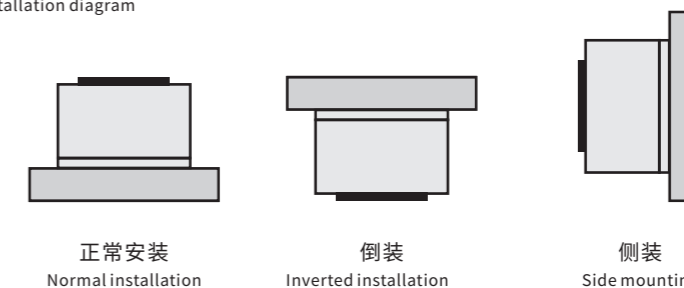
#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-224系列规格(外转子型)

### TPA-M-224 series specifications (Outer rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-224-042	TPA-M-224-062
连续转矩 Continuous torque	N.m	14.1	35
连续电流 Continuous current	A rms	2.2	2.2
最大转矩 Maximum torque	N.m	42.2	105
最大电流 Maximum current	A rms	6.6	6.6
转矩常数 Torque constant	Nm/Arms	6.4	15.7
电阻 Resistance	ohms(25°C)	8.4	13.2
电感 Inductance	mH(25°C)	15.5	36.5
极数 Number of poles	-	40	40
反电动势常数 Back emf constant	Vrms/rad/s	5.2	12.8
电机常数 Motor constant	Nm/√W	2.6	5.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.012	0.03
电机重量 Motor weight	Kg	5.5	9.2
最高转速 Maximum speed	rmp	380	200
定位精度 Positioning accuracy	Arc sec	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5
分辨率 DPI	L/rev, lines/rev	11740 (L/rev)	16384 (lines/rev)
最大轴向载荷 Maximum axial load	N	8000	10000
最大径向载荷 Maximum radial load	N.m	80	100
轴向偏摆 Axial deflection	mm	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005

**注:【通用规格】**

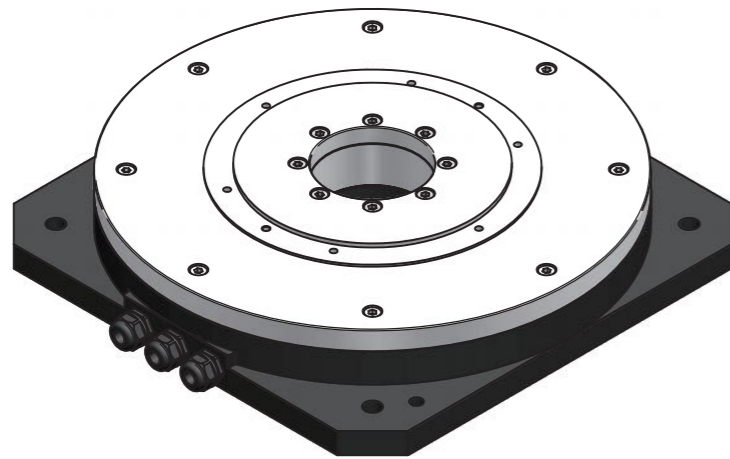
Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.

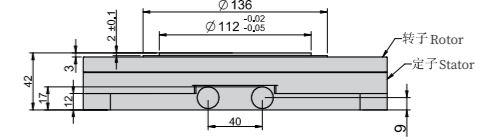
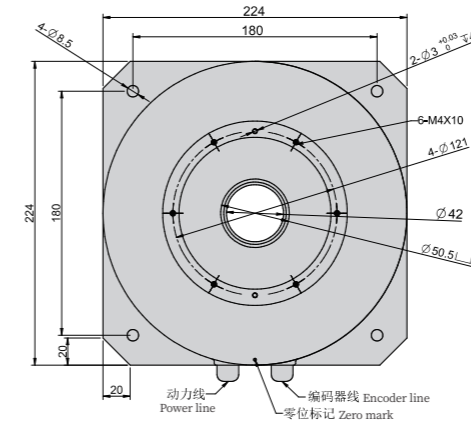


**安装尺寸图**

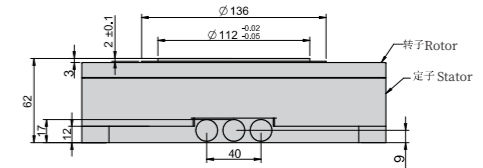
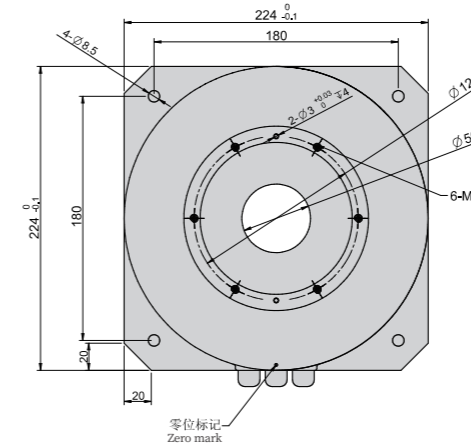
Installation dimension drawing

TPA-M-224-042

单位:Unit: mm



TPA-M-224-062



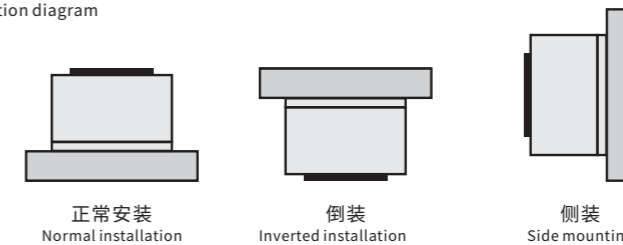
**备注:**

- 1、测量时环境温度为25°C, 取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C (无结冰), 工作湿度10%RH-80%RH (无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram







安装尺寸图  
Installation dimension drawing

单位:Unit: mm

**TPA-M-263-113**

6-M8X15 PCD $\varnothing$ 246  
 $\varnothing$ 246 thru  $\varnothing$ 80 轴承  
 $\varnothing$ 6 $\pm$ 0.02 $\pm$ 8 零位 Zero point

113  
10  $\pm$ 0.1 5  $\pm$ 0.2  
定子 Stator 转子 Rotor  
35.9  
 $\varnothing$ 263  $\varnothing$ 200  $\pm$ 0.06  $\varnothing$ 230  $\pm$ 0.06  $\varnothing$ 263

$\varnothing$ 6  $\pm$ 0.05  $\pm$ 8  
6-M8X10 PCD $\varnothing$ 170  $\varnothing$ 170  
20 85  $\pm$ 0.05 56 56

**TPA-M-263-138**

6-M8X15 PCD $\varnothing$ 246  
 $\varnothing$ 246 thru  $\varnothing$ 80 轴承  
 $\varnothing$ 6 $\pm$ 0.02 $\pm$ 8 零位 Zero point

138  
10  $\pm$ 0.2 5  $\pm$ 0.2  
定子 Stator 转子 Rotor  
35.9  
 $\varnothing$ 263  $\varnothing$ 200  $\pm$ 0.06  $\varnothing$ 230  $\pm$ 0.06  $\varnothing$ 263

$\varnothing$ 6  $\pm$ 0.05  $\pm$ 8  
6-M8X10 PCD $\varnothing$ 170  $\varnothing$ 170  
20 85  $\pm$ 0.05 112

**TPA-M-263-188**

6-M8X15 PCD $\varnothing$ 246  
 $\varnothing$ 246 thru  $\varnothing$ 80 轴承  
 $\varnothing$ 6 $\pm$ 0.02 $\pm$ 8 零位 Zero point

188  
10  $\pm$ 0.2 5  $\pm$ 0.2  
定子 Stator 转子 Rotor  
35.9  
 $\varnothing$ 263  $\varnothing$ 200  $\pm$ 0.06  $\varnothing$ 230  $\pm$ 0.06  $\varnothing$ 263

$\varnothing$ 6  $\pm$ 0.05  $\pm$ 8  
6-M8X10 PCD $\varnothing$ 170  $\varnothing$ 170  
20 85  $\pm$ 0.05 112


备注:

- 1、测量时环境温度为25°C, 取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C (无结冰), 工作湿度10%RH-80%RH (无冷凝)。

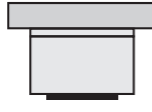
Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

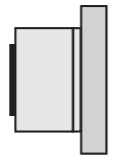
安装示意图 Installation diagram



正常安装  
Normal installation



倒装  
Inverted installation



侧装  
Side mounting

MEMO

LNP3
LNP2
LNP
TPA-P
TPA-PQ
TPA-UH
DDR
参考资料 Reference data

## TPA-M-280系列规格(外转子型)

### TPA-M-280 series specifications (Outer rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-280-145	TPA-M-280-170	TPA-M-280-231
连续转矩 Continuous torque	N.m	95.0	95.0	250.0
连续电流 Continuous current	A rms	7.1	7.1	7.1
最大转矩 Maximum torque	N.m	190	190	500
最大电流 Maximum current	A rms	14.2	14.2	14.2
转矩常数 Torque constant	Nm/Arms	13.4	13.4	35.2
电阻 Resistance	ohms(25°C)	3.4	3.4	6.7
电感 Inductance	mH(25°C)	10.8	10.8	22.8
极数 Number of poles	-	40	40	40
反电动势常数 Back emf constant	Vrms/rad/s	10.9	10.9	28.7
电机常数 Motor constant	Nm/√W	3.0	3.0	7.9
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.13	0.15	0.27
电机重量 Motor weight	Kg	27.3	31.5	56.6
最高转速 Maximum speed	rmp	150	150	100
定位精度 Positioning accuracy	Arc sec	±20	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±2.5	±1.5
分辨率 DPI	sin/cos	16384	16384	16384
最大轴向载荷 Maximum axial load	N	40000	40000	40500
最大径向载荷 Maximum radial load	N.m	400	400	400
轴向偏摆 Axial deflection	mm	0.005	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005	0.005

**注:【通用规格】**

Note: General Specification

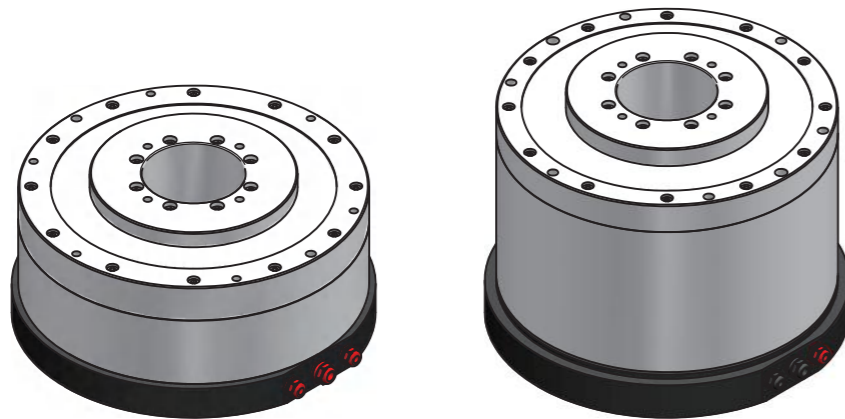
电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型,  
Other structures: inner rotor type,

励磁方式:三相  
excitation mode: three-phase.

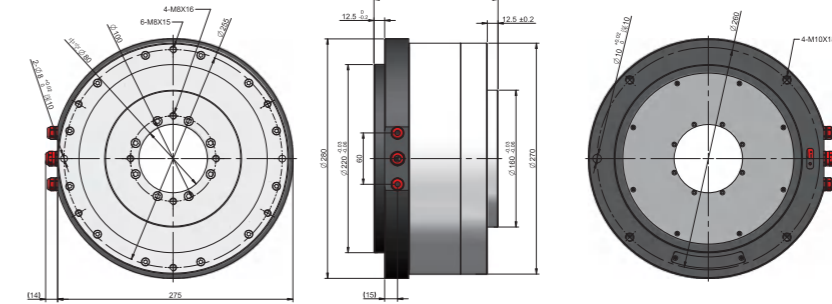


**安装尺寸图**

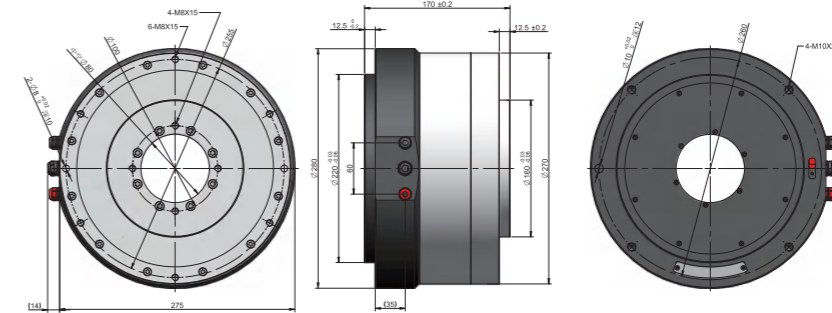
Installation dimension drawing

TPA-M-280-145

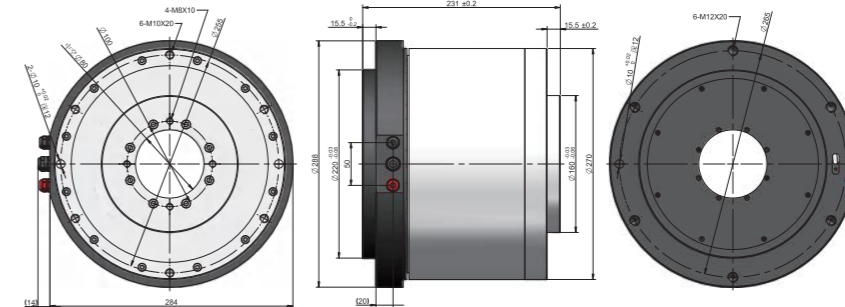
单位:Unit: mm



TPA-M-280-170



TPA-M-280-231



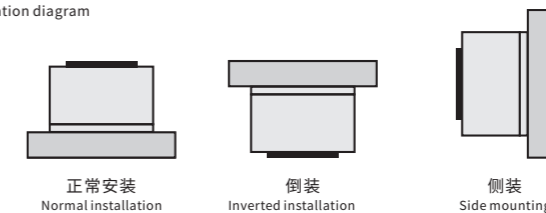
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



正常安装  
Normal installation

倒装  
Inverted installation

侧装  
Side mounting

## TPA-M-325系列规格 (外转子型)

### TPA-M-325 series specifications (Outer rotor type)

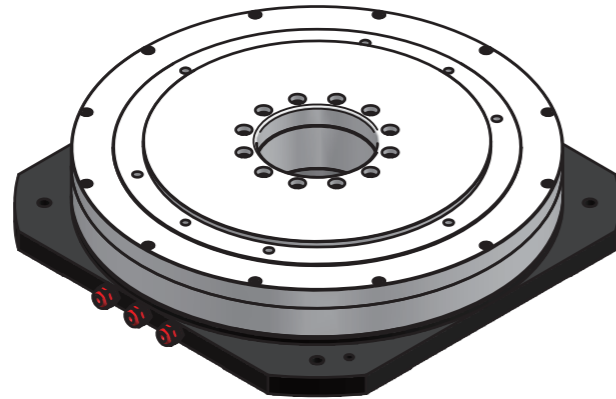
性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-325-065
连续转矩 Continuous torque	N.m	30
连续电流 Continuous current	A rms	1.1
最大转矩 Maximum torque	N.m	90.0
最大电流 Maximum current	A rms	3.4
转矩常数 Torque constant	Nm/Arms	27.3
电阻 Resistance	ohms(25°C)	13.6
电感 Inductance	mH(25°C)	42.4
极数 Number of poles	-	50
反电动势常数 Back emf constant	Vrms/rad/s	22.3
电机常数 Motor constant	Nm/√W	4.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.12
电机重量 Motor weight	Kg	15.5
最高转速 Maximum speed	rmp	120
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	31488
最大轴向载荷 Maximum axial load	N	50000
最大径向载荷 Maximum radial load	N.m	300
轴向偏摆 Axial deflection	mm	0.008
径向偏摆 Radial deflection	mm	0.008

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

其他构造:外转子型, 励磁方式:三相  
Other structures: Outer rotor type, excitation mode: three-phase.

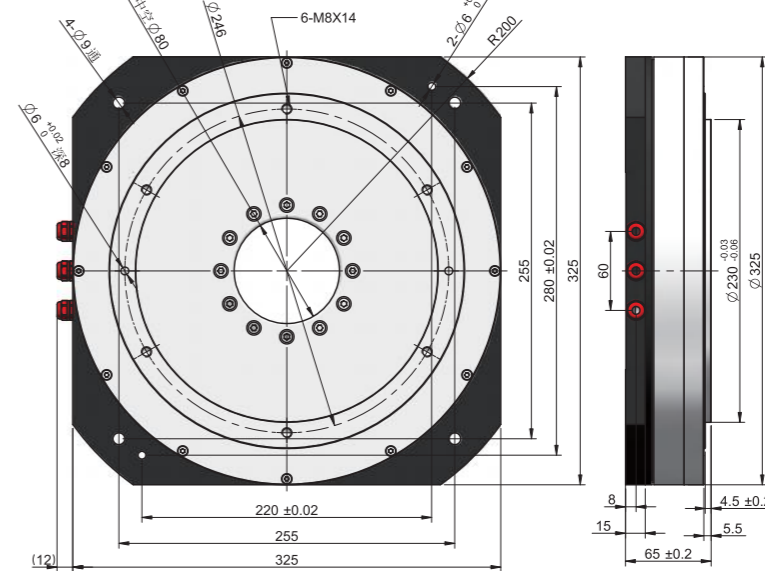


#### 安装尺寸图

Installation dimension drawing

### TPA-M-325-065

单位:Unit:mm



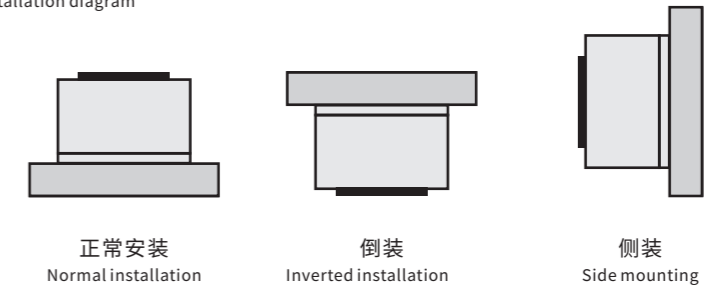
#### 备注:

- 1、测量时环境温度为25°C, 取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C (无结冰), 工作湿度10%RH-80%RH (无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-040系列规格(内转子型)

### TPA-M-040 series specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-040-038
连续转矩 Continuous torque	N.m	0.13
连续电流 Continuous current	A rms	0.63
最大转矩 Maximum torque	N.m	0.39
最大电流 Maximum current	A rms	1.9
转矩常数 Torque constant	Nm/Arms	0.21
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	7.5
电感 Inductance	mH(25 $^{\circ}$ C)	1.5
极数 Number of poles	-	22
反电动势常数 Back emf constant	Vrms/rad/s	460
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	$5 \times 10^{-6}$
电机重量 Motor weight	Kg	0.075
最高转速 Maximum speed	rmp	500
定位精度 Positioning accuracy	Arc sec	-
重复精度 Repeatability	Arc sec	-
分辨率 Resolution	Counts/Rev	819200 (Counts/Rev)
最大轴向载荷 Maximum axial load	N	20
最大径向载荷 Maximum radial load	N.m	0.4
轴向偏摆 Axial deflection	$\mu\text{m}$	15 (10,5 or less)
径向偏摆 Radial deflection	$\mu\text{m}$	15 (10,5 or less)

#### 注:【通用规格】

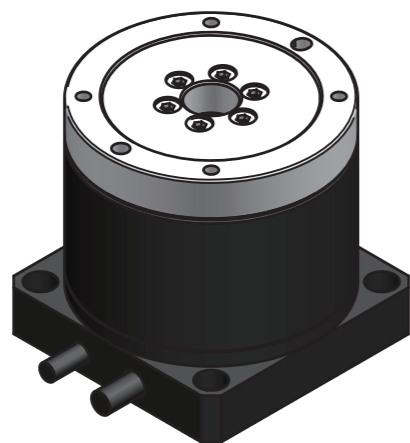
Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

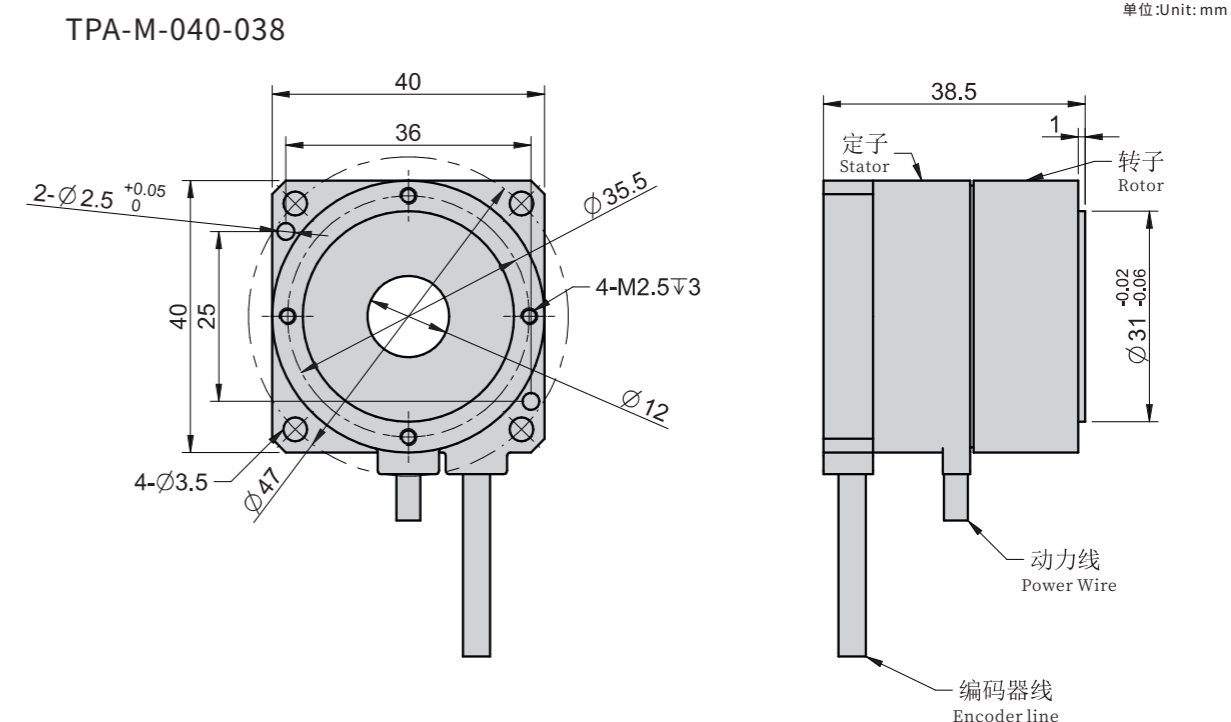
绝缘电阻: 10M $\Omega$ 以上(500VDC)  
Insulation resistance: more than 10M $\Omega$  (500VDC)

其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.



#### 安装尺寸图

Installation dimension drawing



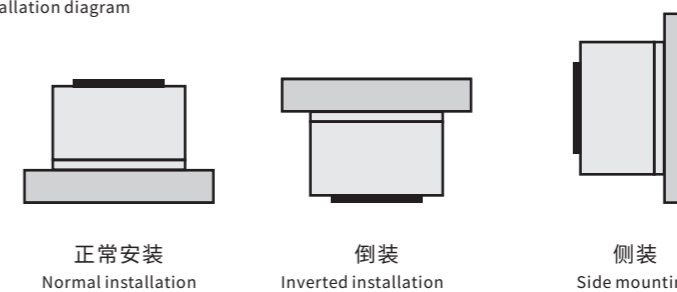
#### 备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-062系列规格(内转子型)

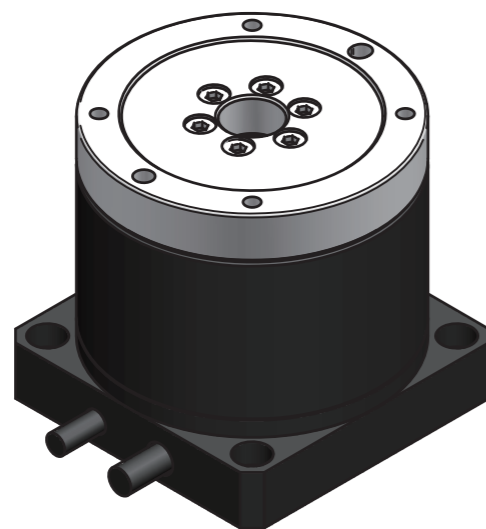
### TPA-M-062 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-062-060
连续转矩 Continuous torque	N.m	0.3
连续电流 Continuous current	A rms	1.6
最大转矩 Maximum torque	N.m	1.0
最大电流 Maximum current	A rms	4.8
转矩常数 Torque constant	Nm/Arms	0.2
电阻 Resistance	ohms(25°C)	5.3
电感 Inductance	mH(25°C)	2.4
极数 Number of poles	-	14
反电动势常数 Back emf constant	Vrms/rad/s	0.2
电机常数 Motor constant	Nm/√W	0.1
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	6.5×10 <sup>-5</sup>
电机重量 Motor weight	Kg	0.65
最高转速 Maximum speed	rmp	600
定位精度 Positioning accuracy	Arc sec	±30
重复精度 Repeatability	Arc sec	±2.5
分辨率 DPI	sin/cos	5000
最大轴向载荷 Maximum axial load	N	50
最大径向载荷 Maximum radial load	N.m	/
轴向偏摆 Axial deflection	mm	0.03
电机高度 Motor height	mm	60

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

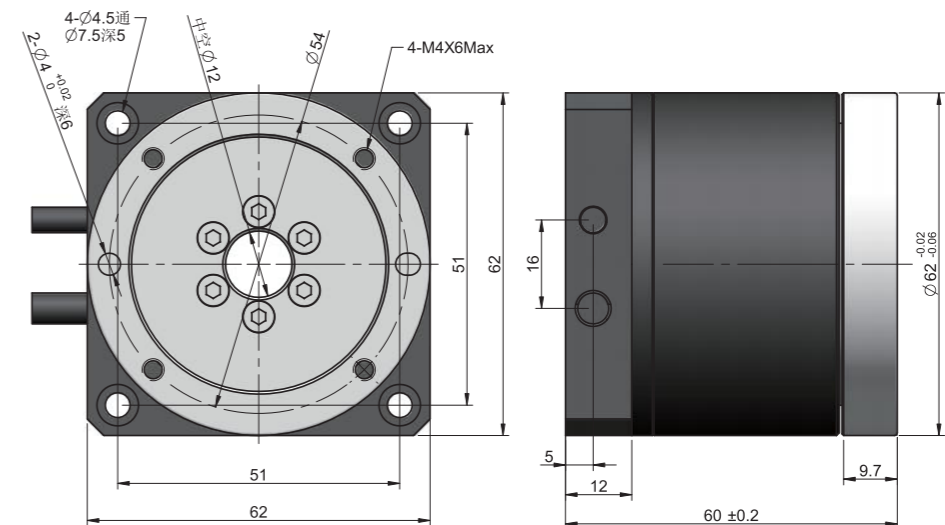


#### 安装尺寸图

Installation dimension drawing

#### TPA-M-062-060

单位:Unit: mm



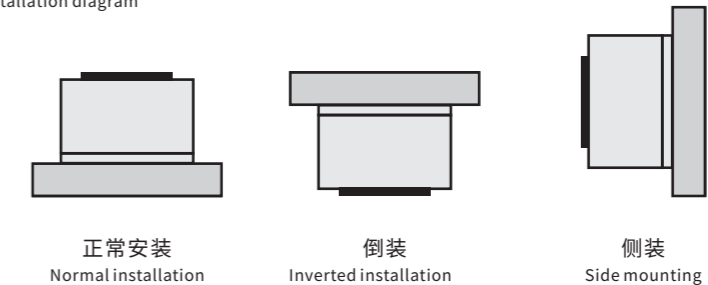
#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



正常安装  
Normal installation

倒装  
Inverted installation

侧装  
Side mounting

## TPA-M-080系列规格(内转子型)

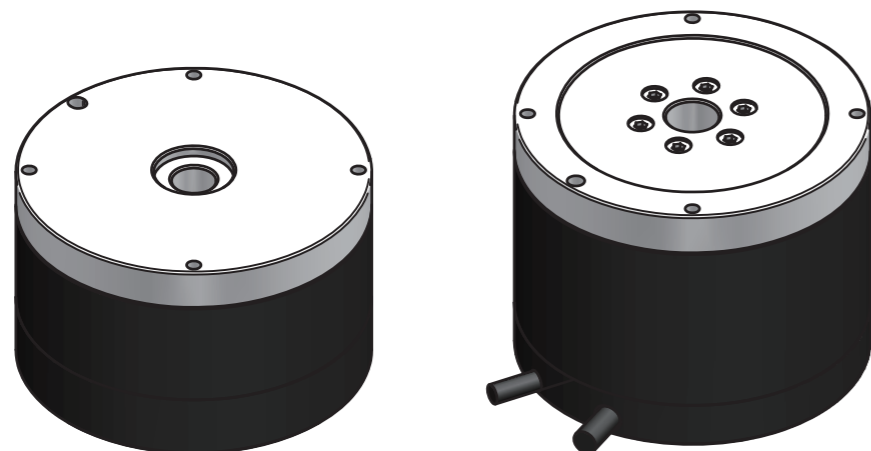
### TPA-M-080 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-080-050	TPA-M-080-067
连续转矩 Continuous torque	N.m	0.6	1
连续电流 Continuous current	A rms	3.2	3.2
最大转矩 Maximum torque	N.m	1.9	3
最大电流 Maximum current	A rms	9.6	9.6
转矩常数 Torque constant	Nm/Arms	0.2	0.31
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	1.2	1.5
电感 Inductance	mH(25 $^{\circ}$ C)	1	1.5
极数 Number of poles	-	10	10
反电动势常数 Back emf constant	Vrms/rad/s	0.2	0.26
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.1	0.21
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	$1.5 \times 10^{-4}$	$2.2 \times 10^{-4}$
电机重量 Motor weight	Kg	1.2	1.6
最高转速 Maximum speed	rmp	600	300
定位精度 Positioning accuracy	Arc sec	$\pm 50$	$\pm 50$
重复精度 Repeatability	Arc sec	$\pm 2.5$	$\pm 2.5$
分辨率 DPI	sin/cos	5000	20
最大轴向载荷 Maximum axial load	N	50	50
最大径向载荷 Maximum radial load	N.m	-	-
轴向偏摆 Axial deflection	mm	0.03	0.03
径向偏摆 Radial deflection	mm	0.03	0.03

注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10M $\Omega$ 以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10M $\Omega$  (500VDC)

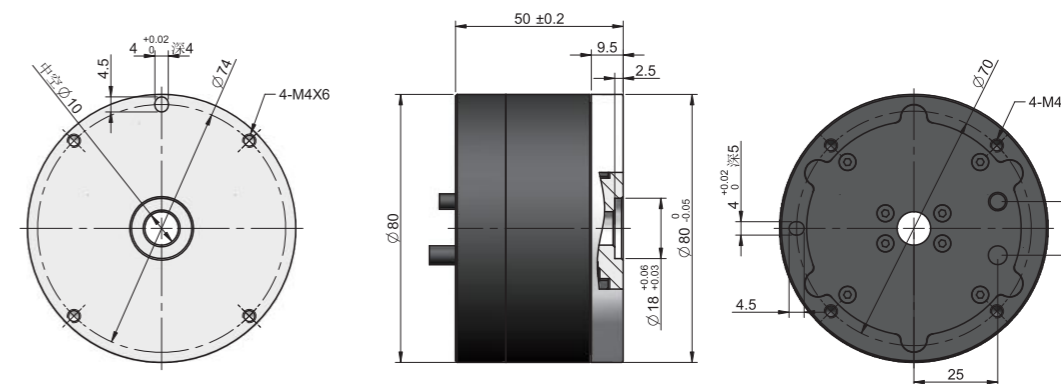


安装尺寸图

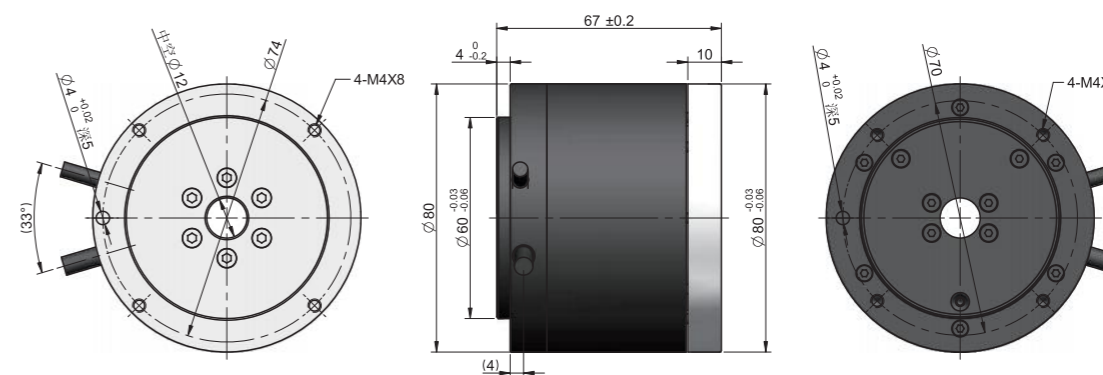
Installation dimension drawing

### TPA-M-080-050

单位:Unit:mm



### TPA-M-080-067



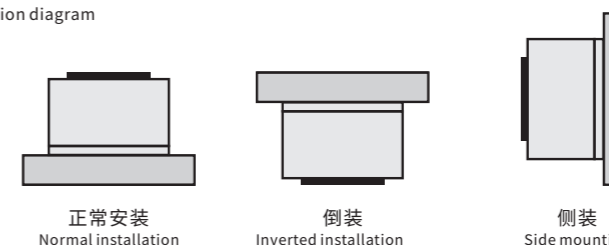
备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-100系列规格(内转子型)

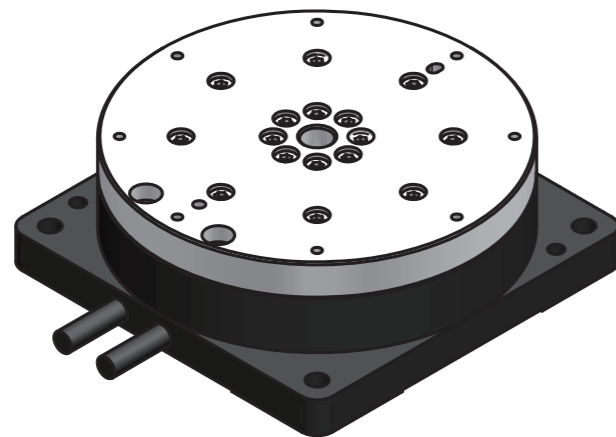
### TPA-M-100 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-100-035
连续转矩 Continuous torque	N.m	0.6
连续电流 Continuous current	A rms	3.2
最大转矩 Maximum torque	N.m	19
最大电流 Maximum current	A rms	9.6
转矩常数 Torque constant	Nm/Arms	0.2
电阻 Resistance	ohms(25°C)	1.2
电感 Inductance	mH(25°C)	1
极数 Number of poles	-	10
反电动势常数 Back emf constant	Vrms/rad/s	0.2
电机常数 Motor constant	Nm/√W	0.1
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	1.5×10 <sup>-5</sup>
电机重量 Motor weight	Kg	1.2
最高转速 Maximum speed	rmp	600
定位精度 Positioning accuracy	Arc sec	±50
重复精度 Repeatability	Arc sec	±2.5
分辨率 DPI	sin/cos	5000
最大轴向载荷 Maximum axial load	N	50
最大径向载荷 Maximum radial load	N.m	/
轴向偏摆 Axial deflection	mm	0.03
径向偏摆 Radial deflection	mm	0.03

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

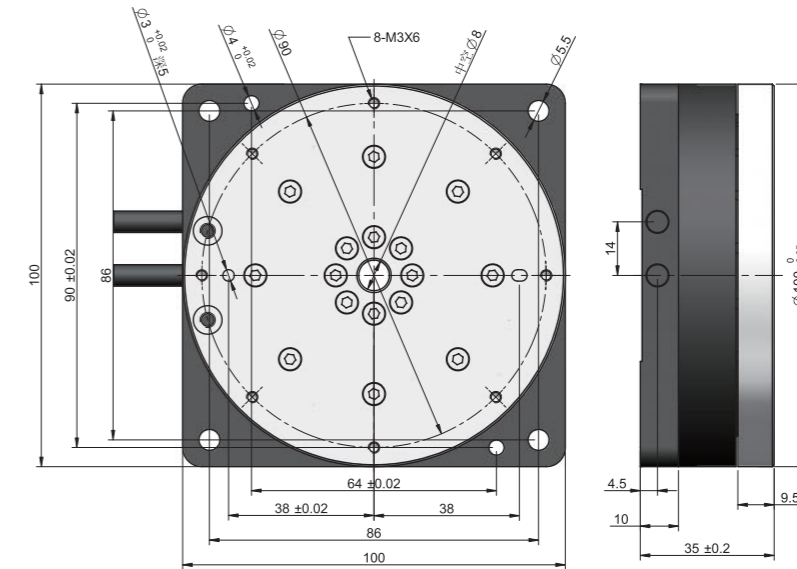


**安装尺寸图**

Installation dimension drawing

TPA-M-100-035

单位:Unit:mm



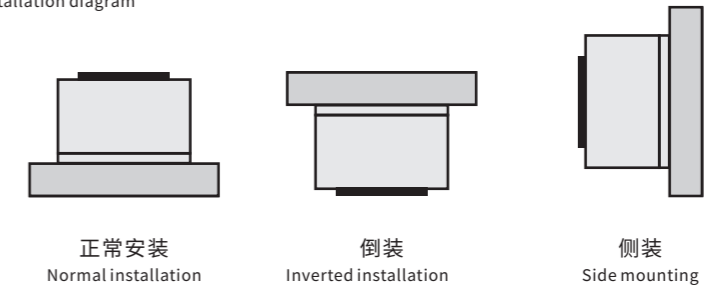
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram





## TPA-M-120系列规格(内转子型)

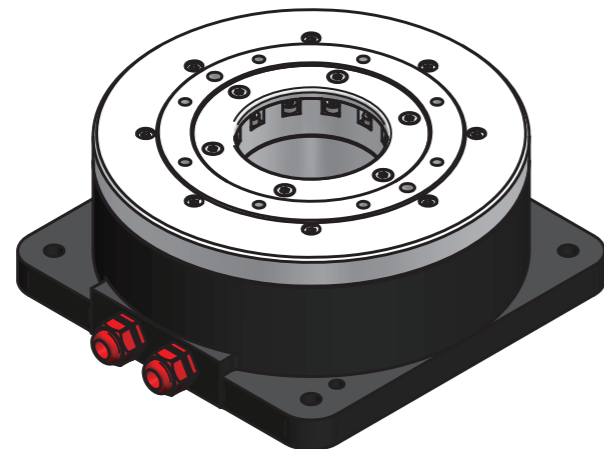
### TPA-M-120 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-120-050
连续转矩 Continuous torque	N.m	3.5
连续电流 Continuous current	A rms	1.5
最大转矩 Maximum torque	N.m	10.5
最大电流 Maximum current	A rms	4.5
转矩常数 Torque constant	Nm/Arms	2.33
电阻 Resistance	ohms(25°C)	2.2
电感 Inductance	mH(25°C)	1.8
极数 Number of poles	-	20
反电动势常数 Back emf constant	Vrms/rad/s	1.9
电机常数 Motor constant	Nm/√W	1.1
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0016
电机重量 Motor weight	Kg	2.3
最高转速 Maximum speed	rmp	350
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	11740
最大轴向载荷 Maximum axial load	N	500
最大径向载荷 Maximum radial load	N.m	10
轴向偏摆 Axial deflection	mm	0.005
电机高度 Motor height	mm	50

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

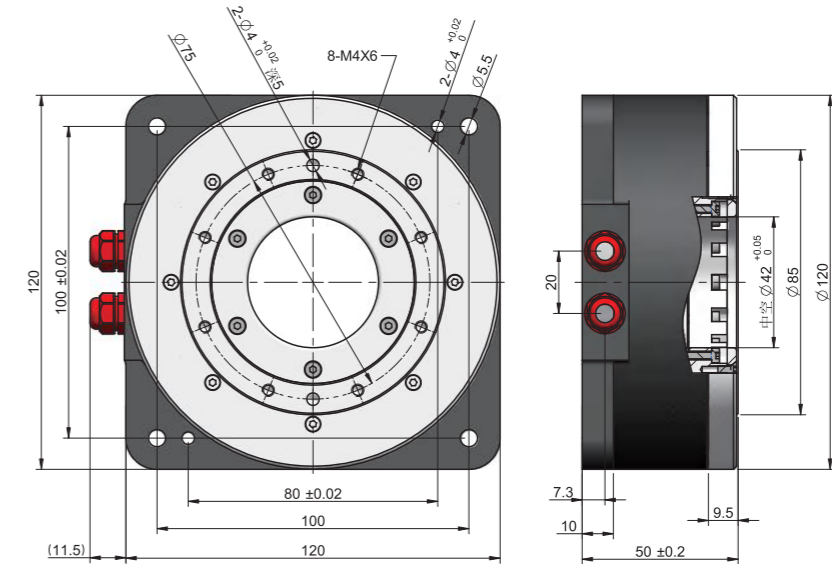


**安装尺寸图**

Installation dimension drawing

TPA-M-120-050

单位:Unit:mm



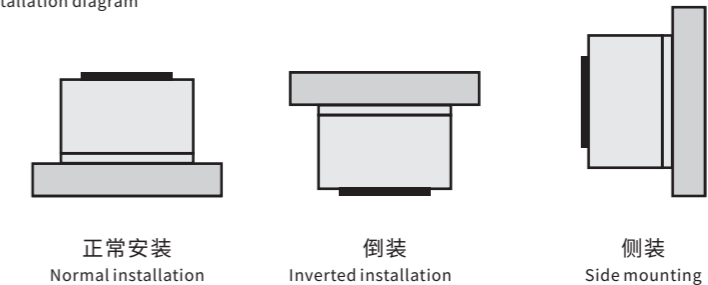
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



正常安装  
Normal installation

倒装  
Inverted installation

侧装  
Side mounting

## TPA-M-140系列规格(内转子型)

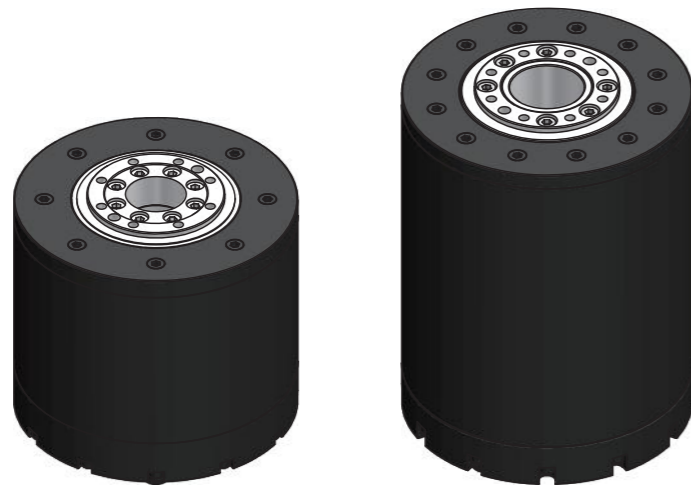
### TPA-M-140 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-140-129	TPA-M-140-189
连续转矩 Continuous torque	N.m	18.0	40.0
连续电流 Continuous current	A rms	5	5
最大转矩 Maximum torque	N.m	47	104
最大电流 Maximum current	A rms	13	13
转矩常数 Torque constant	Nm/Arms	3.6	8
电阻 Resistance	ohms(25°C)	53	15.8
电感 Inductance	mH(25°C)	93	21.9
极数 Number of poles	-	30	30
反电动势常数 Back emf constant	Vrms/rad/s	2.9	6.5
电机常数 Motor constant	Nm/√W	1.1	1.5
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0027	0.0043
电机重量 Motor weight	Kg	7.3	10.8
最高转速 Maximum speed	rmp	250	250
定位精度 Positioning accuracy	Arc sec	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5
分辨率 DPI	sin/cos	11740	11740
最大轴向载荷 Maximum axial load	N	5000	5000
最大径向载荷 Maximum radial load	N.m	50	50
轴向偏摆 Axial deflection	mm	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005

注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

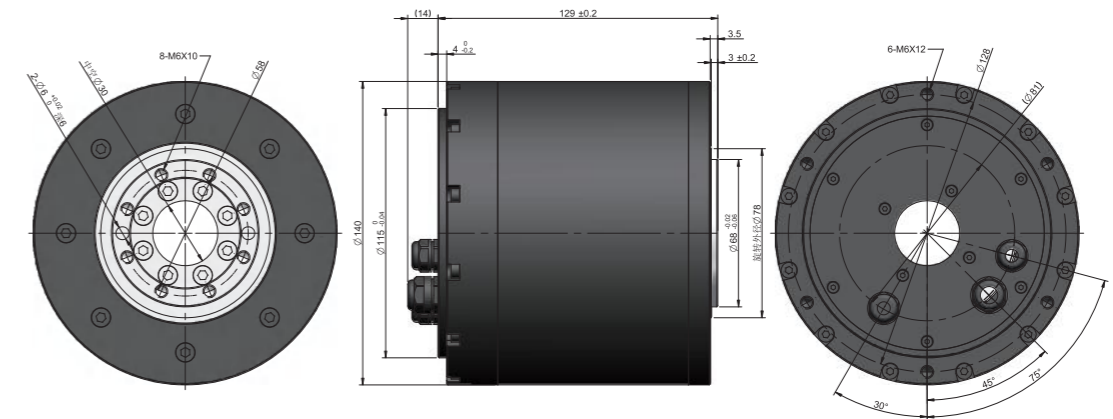


安装尺寸图

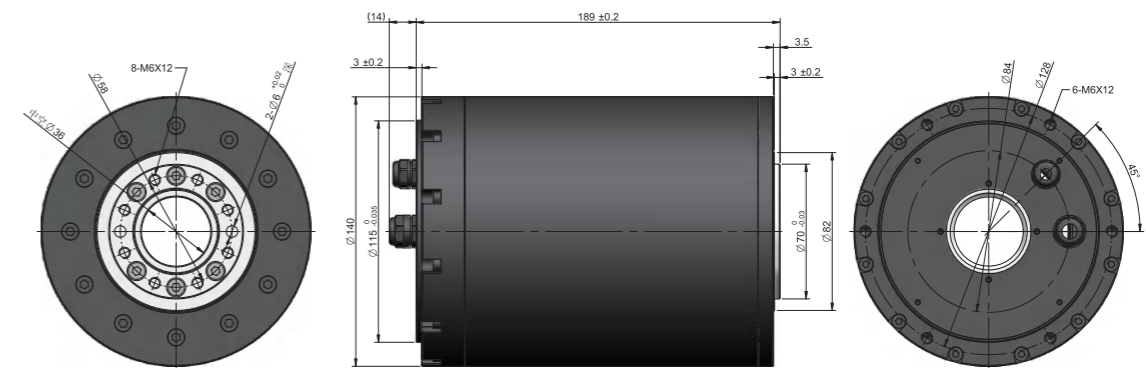
Installation dimension drawing

### TPA-M-140-129

单位:Unit:mm



### TPA-M-140-189



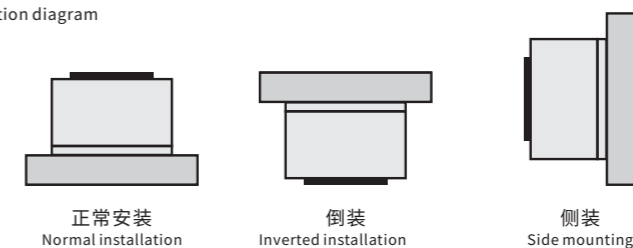
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-170系列规格(内转子型)

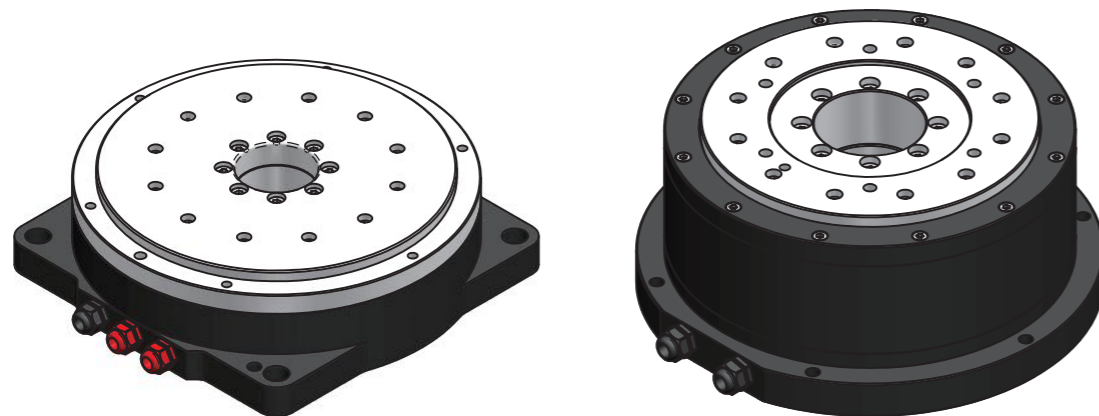
### TPA-M-170 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-170-050	TPA-M-170-075
连续转矩 Continuous torque	N.m	40.0	16.8
连续电流 Continuous current	A rms	5	3.5
最大转矩 Maximum torque	N.m	104	50
最大电流 Maximum current	A rms	13	10.5
转矩常数 Torque constant	Nm/Arms	8	4.8
电阻 Resistance	ohms(25°C)	15.8	11.7
电感 Inductance	mH(25°C)	21.9	16.3
极数 Number of poles	-	30	32
反电动势常数 Back emf constant	Vrms/rad/s	6.5	3.9
电机常数 Motor constant	Nm/√W	1.5	1.0
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0043	0.004
电机重量 Motor weight	Kg	10.8	5.2
最高转速 Maximum speed	rmp	250	500
定位精度 Positioning accuracy	Arc sec	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5
分辨率 DPI	sin/cos	11740	11740
最大轴向载荷 Maximum axial load	N	5000	2500
最大径向载荷 Maximum radial load	N.m	50	20
轴向偏摆 Axial deflection	mm	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	0.005

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

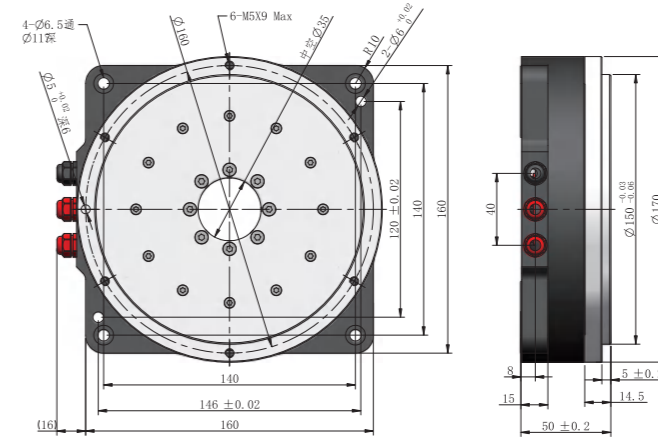


**安装尺寸图**

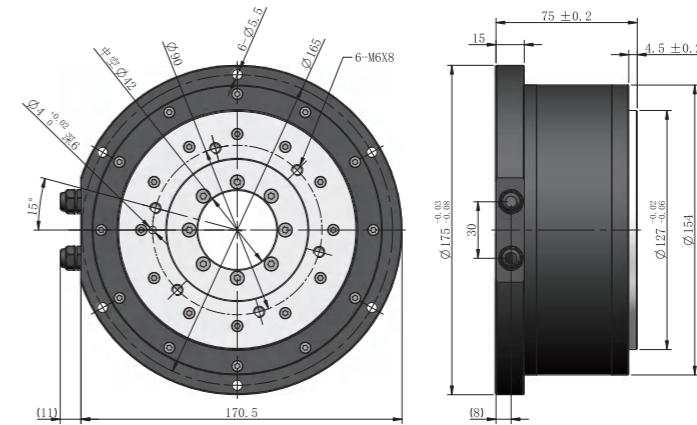
Installation dimension drawing

TPA-M-170-050

单位:Unit:mm



TPA-M-170-075



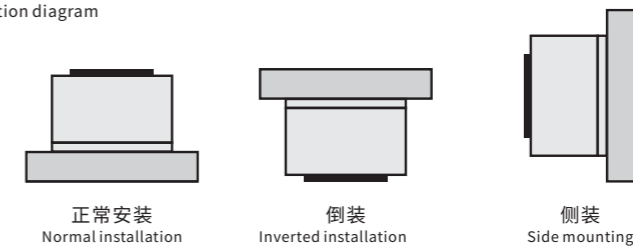
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-180系列规格(内转子型)

### TPA-M-180 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-180-055	TPA-M-180-095	TPA-M-180-125
连续转矩 Continuous torque	N.m	14.0	25.2	40.1
连续电流 Continuous current	A rms	4.5	4.5	4.5
最大转矩 Maximum torque	N.m	42	76	120
最大电流 Maximum current	A rms	13.5	13.5	13.5
转矩常数 Torque constant	Nm/Arms	3.1	5.6	8
电阻 Resistance	ohms(25°C)	2.4	4.1	6.4
电感 Inductance	mH(25°C)	7.6	14	20
极数 Number of poles	-	32	32	32
反电动势常数 Back emf constant	Vrms/rad/s	2.5	4.6	7.3
电机常数 Motor constant	Nm/√W	1.4	2.0	2.5
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0039	0.008	0.01
电机重量 Motor weight	Kg	5.4	10.3	13
最高转速 Maximum speed	rmp	250	300	250
定位精度 Positioning accuracy	Arc sec	±20	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5	±1.5
分辨率 DPI	sin/cos	11740	11740	11740
最大轴向载荷 Maximum axial load	N	2500	40000	2500
最大径向载荷 Maximum radial load	N.m	20	40	20
轴向偏摆 Axial deflection	mm	0.005	0.005	0.005
径向偏摆 Radial deflection	mm	0.005	-	0.005

**注:【通用规格】**

Note: General Specification

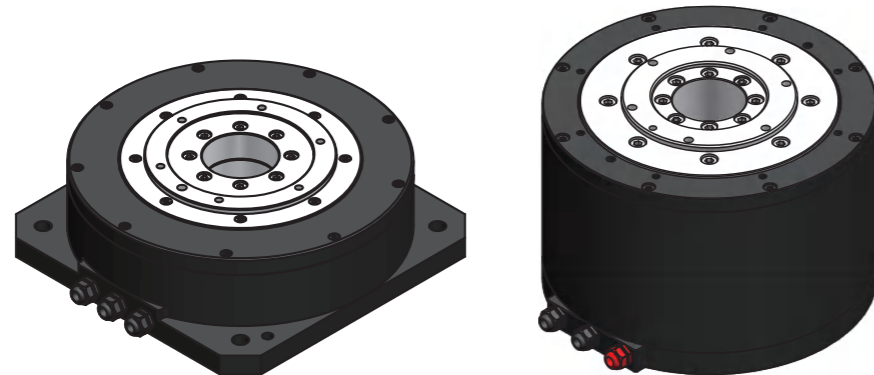
电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型,  
Other structures: inner rotor type,

励磁方式:三相  
excitation mode: three-phase.

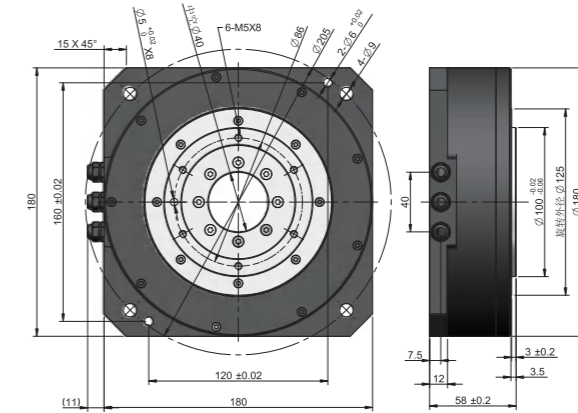


**安装尺寸图**

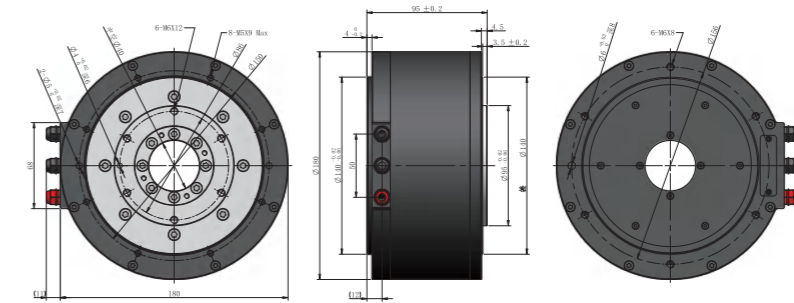
Installation dimension drawing

TPA-M-180-055

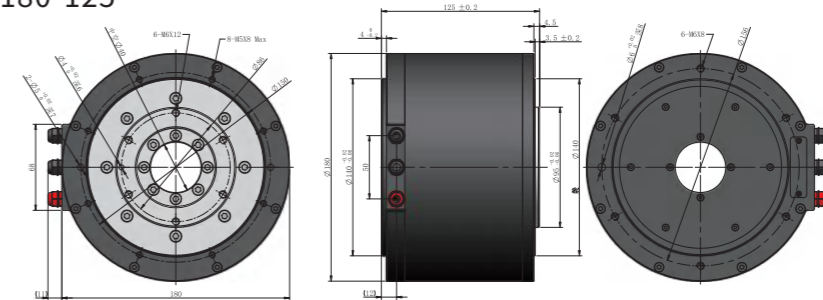
单位:Unit: mm



TPA-M-180-095



TPA-M-180-125



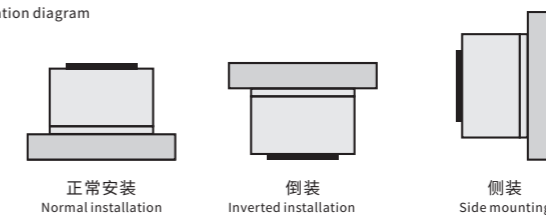
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-220系列规格(内转子型)

### TPA-M-220 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-220-123	TPA-M-220-168	TPA-M-220-208
连续转矩 Continuous torque	N.m	50.6	87.4	115.0
连续电流 Continuous current	A rms	5.5	11.5	5.75
最大转矩 Maximum torque	N.m	152	266	350
最大电流 Maximum current	A rms	16.5	35	17.5
转矩常数 Torque constant	Nm/Arms	9.2	7.6	20
电阻 Resistance	ohms(25°C)	3.2	2.6	5.2
电感 Inductance	mH(25°C)	10.5	8.4	16.8
极数 Number of poles	-	40	40	40
反电动势常数 Back emf constant	Vrms/rad/s	8.3	6.3	6.3
电机常数 Motor constant	Nm/√W	3.7	3.4	6.3
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.034	0.036	0.058
电机重量 Motor weight	Kg	22.7	10.3	13
最高转速 Maximum speed	rmp	200	250	200
定位精度 Positioning accuracy	Arc sec	±20	±20	±20
重复精度 Repeatability	Arc sec	±1.5	±1.5	±1.5
分辨率 DPI	sin/cos	11740	11740	11740
最大轴向载荷 Maximum axial load	N	8000	8000	8000
最大径向载荷 Maximum radial load	N.m	80	40	20
轴向偏摆 Axial deflection	mm	0.005	0.005	0.005
电机高度 Motor height	mm	123	168	208

**注:【通用规格】**

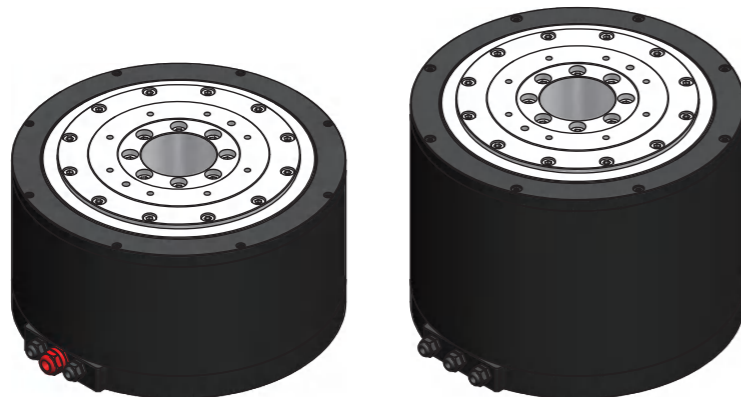
Note: General Specification

电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

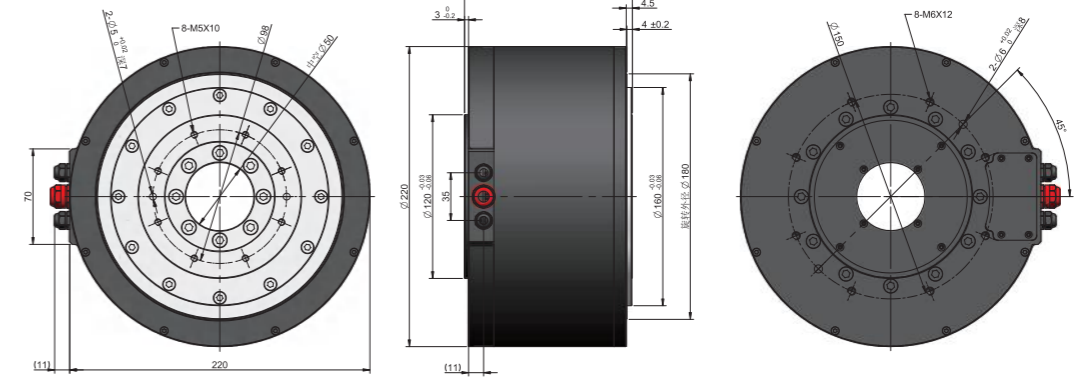
其他构造:内转子型, 励磁方式:三相  
Other structures: inner rotor type, excitation mode: three-phase.



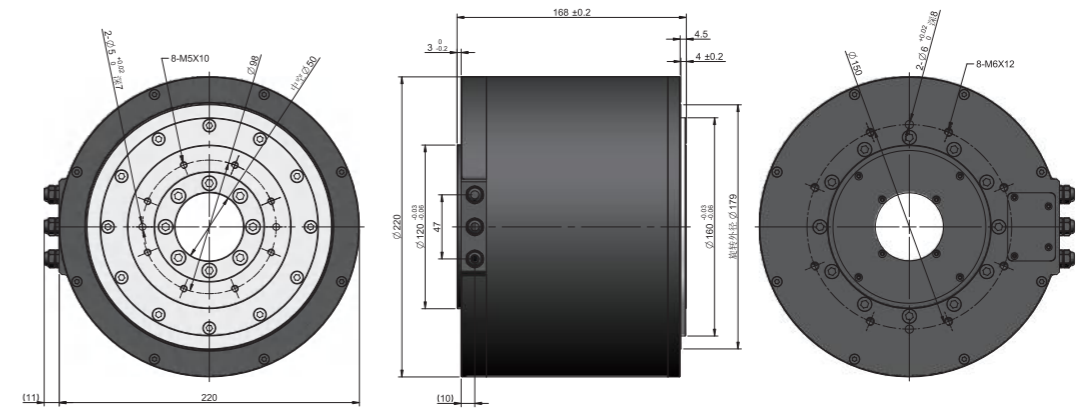
**安装尺寸图**  
Installation dimension drawing

TPA-M-220-123

单位:Unit:mm



TPA-M-220-168



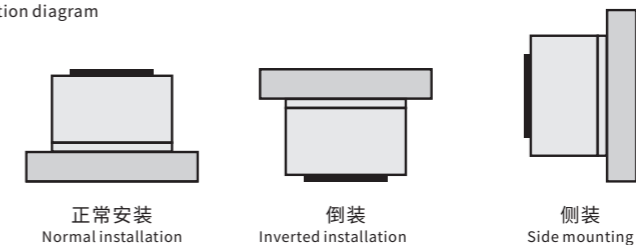
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-224系列规格(内转子型)

### TPA-M-224 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-224-042
连续转矩 Continuous torque	N.m	9.9
连续电流 Continuous current	A rms	2.3
最大转矩 Maximum torque	N.m	30
最大电流 Maximum current	A rms	7
转矩常数 Torque constant	Nm/Arms	4.3
电阻 Resistance	ohms(25°C)	22.5
电感 Inductance	mH(25°C)	12
极数 Number of poles	-	40
反电动势常数 Back emf constant	Vrms/rad/s	3.5
电机常数 Motor constant	Nm/√W	0.7
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.0072
电机重量 Motor weight	Kg	6.2
最高转速 Maximum speed	rmp	250
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	11740
最大轴向载荷 Maximum axial load	N	2500
最大径向载荷 Maximum radial load	N.m	20
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

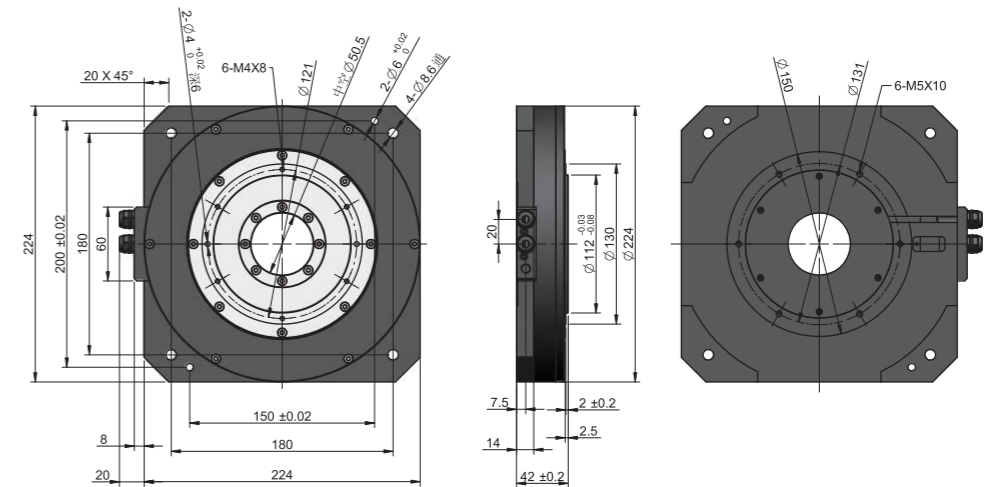


**安装尺寸图**

Installation dimension drawing

TPA-M-224-042

单位:Unit: mm



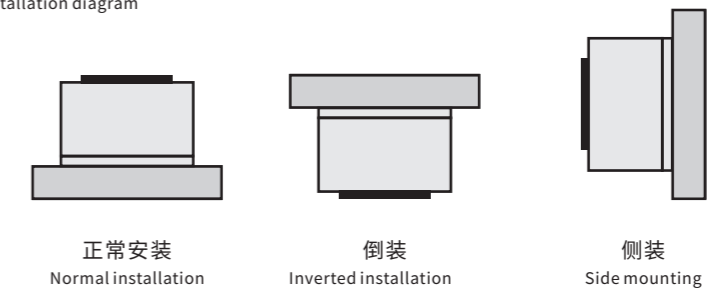
**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-380系列规格(内转子型)

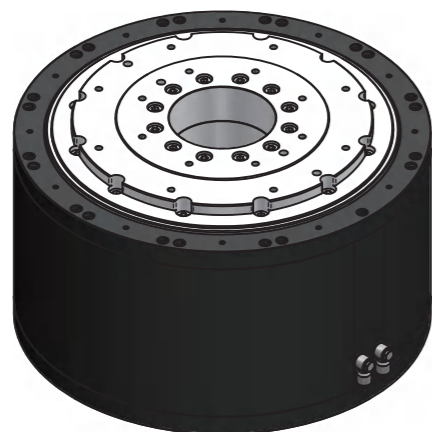
### TPA-M-380 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-380-230
连续转矩 Continuous torque	N.m	600
连续电流 Continuous current	A rms	32
最大转矩 Maximum torque	N.m	1406
最大电流 Maximum current	A rms	75
转矩常数 Torque constant	Nm/Arms	18.75
电阻 Resistance	ohms(25°C)	1.1
电感 Inductance	mH(25°C)	3.5
极数 Number of poles	-	60
反电动势常数 Back emf constant	Vrms/rad/s	15.3
电机常数 Motor constant	Nm/√W	12.9
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.53
电机重量 Motor weight	Kg	81
最高转速 Maximum speed	rmp	150
定位精度 Positioning accuracy	Arc sec	±25
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	15744
最大轴向载荷 Maximum axial load	N	15000
最大径向载荷 Maximum radial load	N.m	300
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

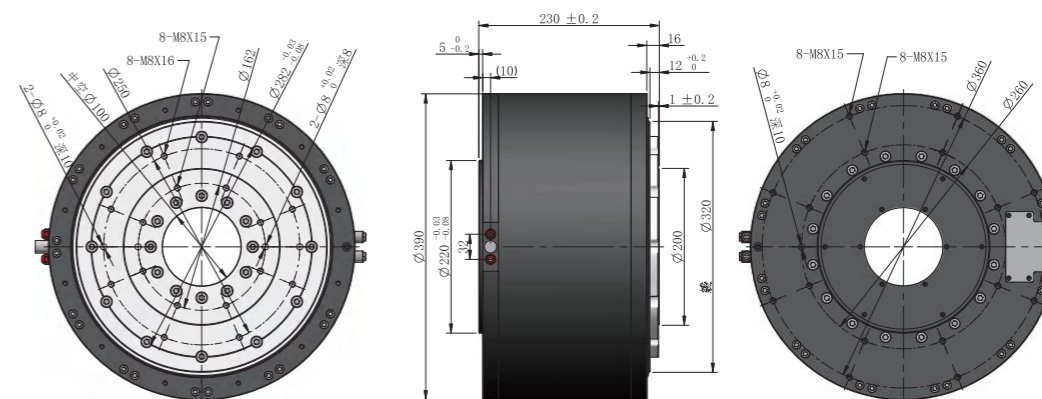


#### 安装尺寸图

Installation dimension drawing

### TPA-M-380-230

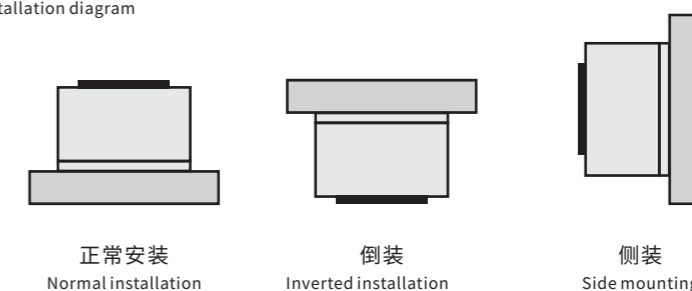
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-390系列规格(内转子型)

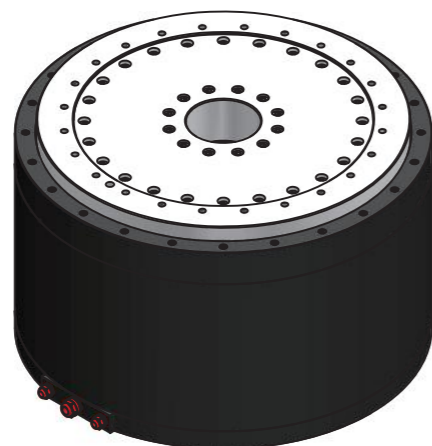
### TPA-M-390 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-390-245
连续转矩 Continuous torque	N.m	280.0
连续电流 Continuous current	A rms	5
最大转矩 Maximum torque	N.m	1400
最大电流 Maximum current	A rms	25
转矩常数 Torque constant	Nm/Arms	56
电阻 Resistance	ohms(25°C)	3.3
电感 Inductance	mH(25°C)	10.5
极数 Number of poles	-	66
反电动势常数 Back emf constant	Vrms/rad/s	45.7
电机常数 Motor constant	Nm/√W	22.3
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.7
电机重量 Motor weight	Kg	138
最高转速 Maximum speed	rmp	50
定位精度 Positioning accuracy	Arc sec	±30
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	15744
最大轴向载荷 Maximum axial load	N	50
最大径向载荷 Maximum radial load	N.m	2000
轴向偏摆 Axial deflection	mm	0.03/0.005
径向偏摆 Radial deflection	mm	0.03/0.005

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

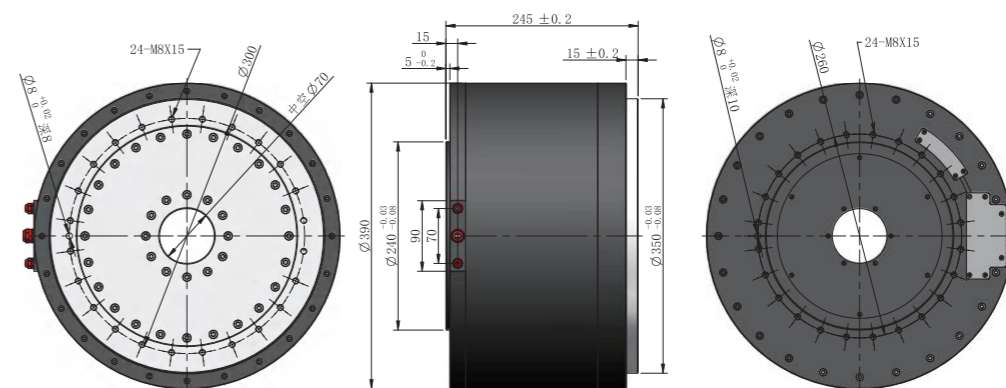


#### 安装尺寸图

Installation dimension drawing

### TPA-M-390-245

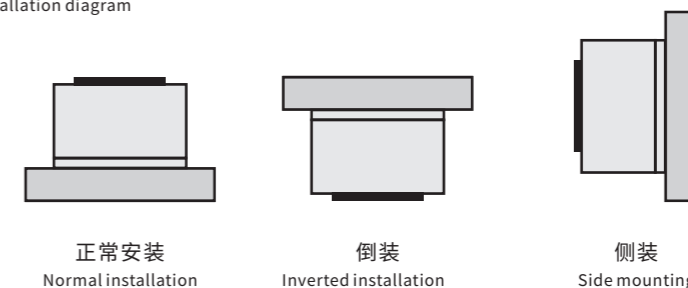
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram





## TPA-M-408系列规格(内转子型)

### TPA-M-408 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-408-077	TPA-M-408-102	TPA-M-408-165
连续转矩 Continuous torque	N.m	150.9	270.0	500.5
连续电流 Continuous current	A rms	4.3	6.0	8.6
最大转矩 Maximum torque	N.m	463.3	675.0	1501.6
最大电流 Maximum current	A rms	13.2	15	25.8
转矩常数 Torque constant	Nm/Arms	35.1	45.0	58.2
电阻 Resistance	ohms(25°C)	5.6	10.1	3.3
电感 Inductance	mH(25°C)	31.2	56.2	17.6
极数 Number of poles	-	40	40	40
反电动势常数 Back emf constant	Vrms/rad/s	28.7	36.7	47.5
电机常数 Motor constant	Nm/√W	17.6	17.6	17.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.18	0.25	0.43
电机重量 Motor weight	Kg	33.2	44.7	73.5
最高转速 Maximum speed	rmp	120	80	60
定位精度 Positioning accuracy	Arc sec	±20	±15	±15
重复精度 Repeatability	Arc sec	±1.5	±1.5	±1.5
分辨率 DPI	sin/cos	16384	16384	16384
最大轴向载荷 Maximum axial load	N	40000	40000	15
最大径向载荷 Maximum radial load	N.m	400	400	500
轴向偏摆 Axial deflection	mm	0.008	0.008	0.008
电机高度 Motor height	mm	0.008	0.008	0.008

**注:【通用规格】**

Note: General Specification

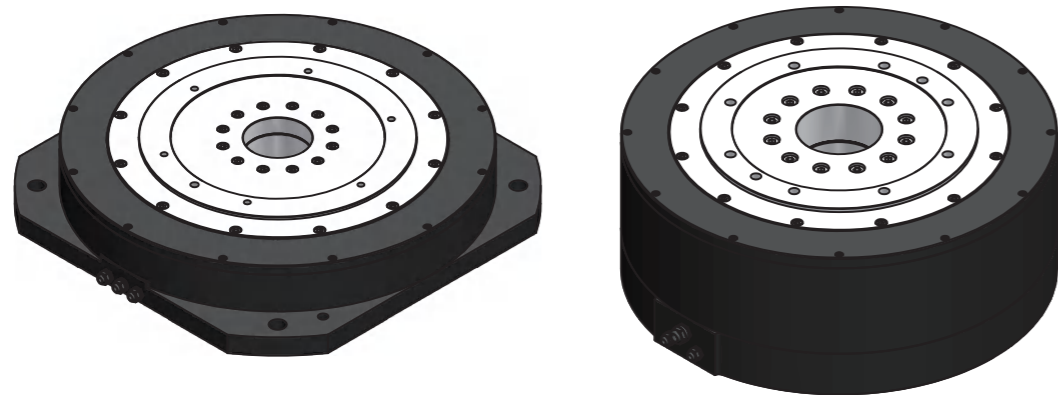
电机卷线部 绝缘等级:F类,  
Motor winding part Insulation grade: Class F,

绝缘耐压:60秒@1500V,  
Withstand voltage: 60s @1500V

绝缘电阻: 10MΩ以上(500VDC)  
Insulation resistance: more than 10MΩ (500VDC)

其他构造:内转子型,  
Other structures: inner rotor type,

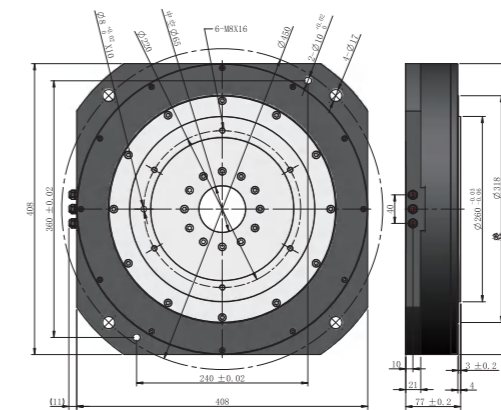
励磁方式:三相  
excitation mode: three-phase.



**安装尺寸图**

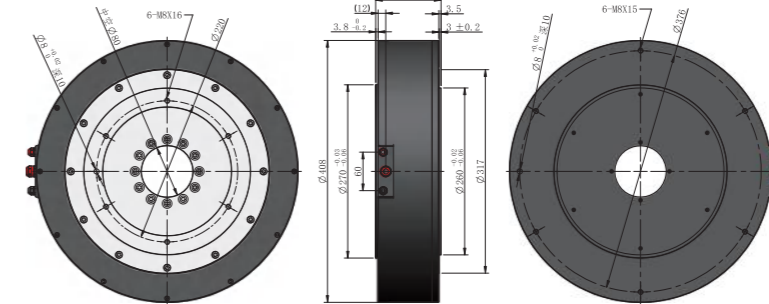
Installation dimension drawing

TPA-M-408-077

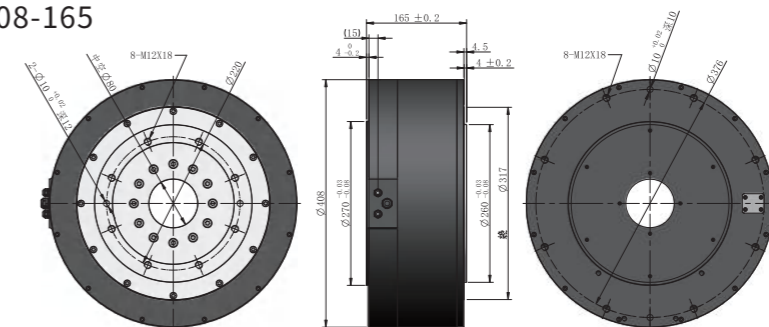


单位:Unit:mm

TPA-M-408-102



TPA-M-408-165



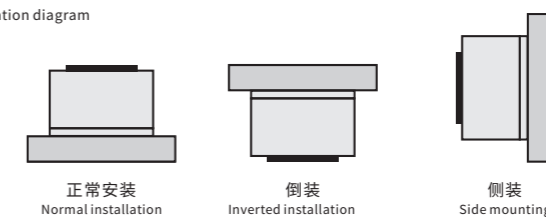
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



## TPA-M-660系列规格(内转子型)

### TPA-M-660 series Specifications (Inner rotor type)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-660-180	TPA-M-660-230
连续转矩 Continuous torque	N.m	1300.0	1950.0
连续电流 Continuous current	A rms	32.0	32.0
最大转矩 Maximum torque	N.m	2500.0	3600.0
最大电流 Maximum current	A rms	64	64
转矩常数 Torque constant	Nm/Arms	41.0	41.0
反电动势常数 Back emf constant	Vrms/rad/s	33.5	33.5
电机常数 Motor constant	Nm/ $\sqrt{W}$	17.6	17.6
转动惯量 Moment of inertia	Kg·m <sup>2</sup>	3.5	4.7
电机重量 Motor weight	Kg	245	328
最高转速 Maximum speed	rmp	60	60
定位精度 Positioning accuracy	Arc sec	±30	±30
重复精度 Repeatability	Arc sec	±2.5	±2.5
分辨率 DPI	sin/cos	31488	31488
最大轴向载荷 Maximum axial load	KN	100	100
最大径向载荷 Maximum radial load	N.m	5000	5000
轴向偏摆 Axial deflection	mm	0.02	0.02
电机高度 Motor height	mm	180	230

**注:【通用规格】**

Note: General Specification

电机卷线部 Motor winding part    绝缘等级:F类, Insulation grade: Class F,    绝缘耐压:60秒@1500V, Withstand voltage: 60s @1500V    绝缘电阻:10MΩ以上(500VDC) Insulation resistance: more than 10MΩ (500VDC)

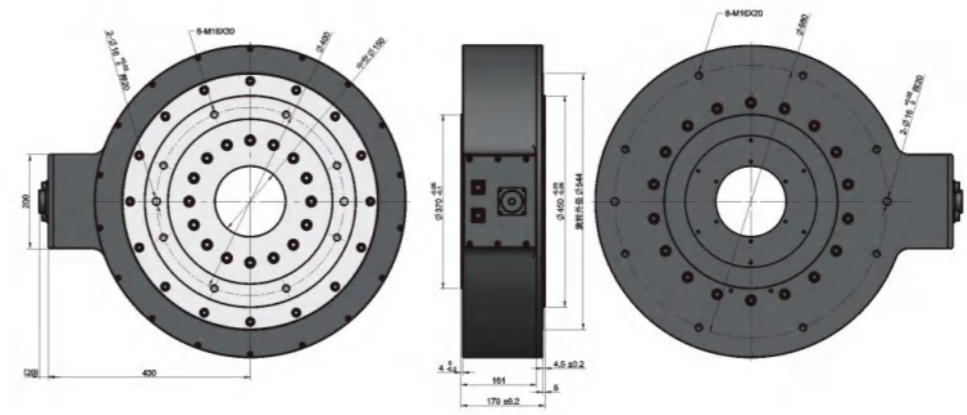


**安装尺寸图**

Installation dimension drawing

TPA-M-660

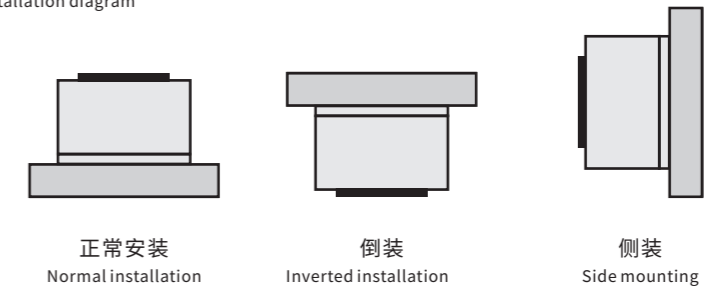
单位:Unit:mm



**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-100系列规格(定制)

### TPA-M-100 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-100-503(X轴/Y轴)	TPA-M-100-035(T轴)
连续推力 Continuous thrust	X	21.0	—
连续转矩 Continuous torque	N.m	—	1.0
连续电流 Continuous current	A rms	1.0	1.5
峰值推力 Peak thrust	N	63.0	—
最大转矩 Maximum torque	N.m	3.0	3.0
峰值电流 Maximum current	A rms	3.0	4.5
电阻 Resistance	ohms(25°C)	9	6.8
电感 Inductance	mH(25°C)	9.5	4.3
反电动势常数 Back emf constant	Vrms/rad/s	17.14	0.55
转矩常数 Torque constant	Nm/Arms	21.0	0.67
极距 Polar distance	mm	14.0	—
极数 Number of poles	—	—	20
转动惯量 Moment of inertia	Kg	—	4
总重量 Gross weight	Kg	—	2.6
最高转速 Maximum speed	rpm	—	350
分辨率 DPI	sin/cos	20μm	5000
工作行程 operating stroke	—	±5mm	±5°

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

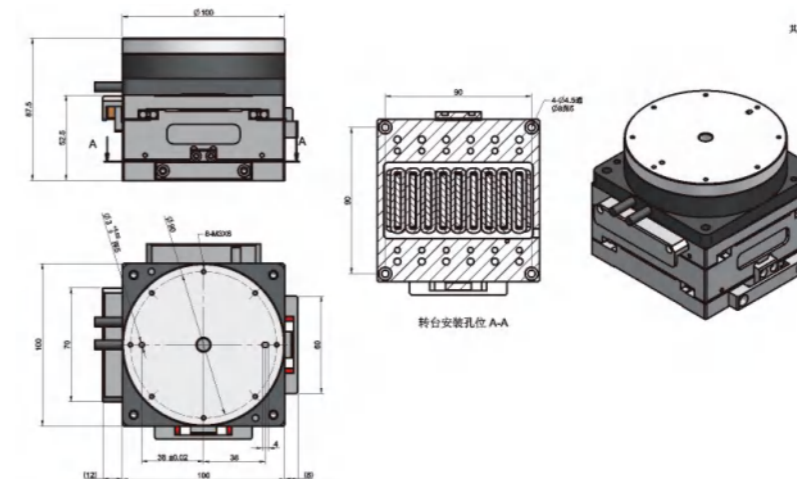


#### 安装尺寸图

Installation dimension drawing

### TPA-M-100

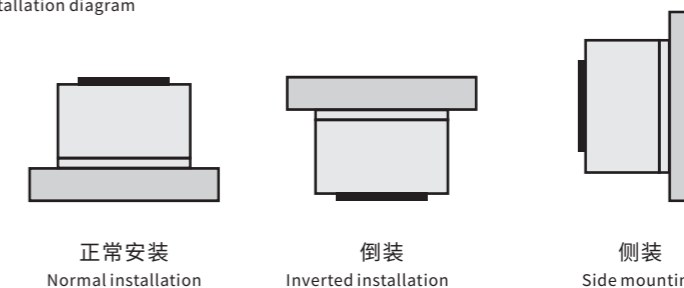
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-163系列规格(定制)

### TPA-M-163 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-163-092
连续转矩 Continuous torque	N.m	11.7
连续电流 Continuous current	A rms	3
最大转矩 Maximum torque	N.m	35
最大电流 Maximum current	A rms	9
转矩常数 Torque constant	Nm/Arms	3.9
电阻 Resistance	ohms(25°C)	6.2
电感 Inductance	mH(25°C)	12.5
极数 Number of poles	-	30
反电动势常数 Back emf constant	Vrms/rad/s	3.2
电机常数 Motor constant	Nm/√W	1.1
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.016
电机重量 Motor weight	Kg	1.1
最高转速 Maximum speed	rpm	200
定位精度 Positioning accuracy	Arc sec	±20
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	11740
最大轴向载荷 Maximum axial load	N	6000
最大径向载荷 Maximum radial load	N.m	60
轴向偏摆 Axial deflection	mm	0.002
径向偏摆 Radial deflection	mm	0.002

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

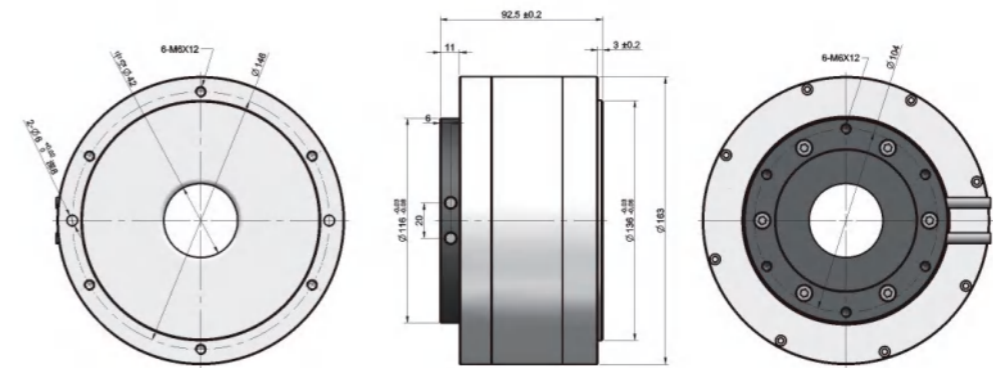


#### 安装尺寸图

Installation dimension drawing

### TPA-M-163

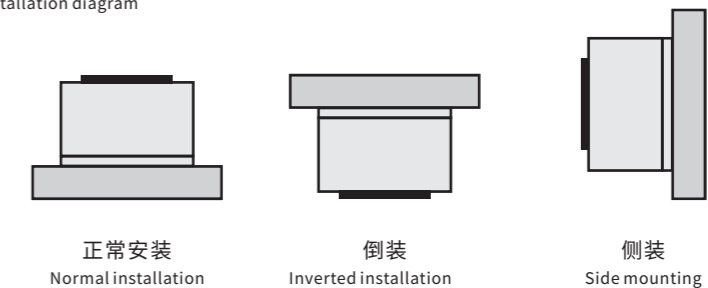
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
 1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
 2. Optional beats in brackets.  
 3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-170 规格(定制)

### TPA-M-170 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-170-080
连续转矩 Continuous torque	N.m	9.9
连续电流 Continuous current	A rms	3
最大转矩 Maximum torque	N.m	30
最大电流 Maximum current	A rms	9
转矩常数 Torque constant	Nm/Arms	3.3
电阻 Resistance	ohms(25°C)	1.4
电感 Inductance	mH(25°C)	1.8
极数 Number of poles	-	32
反电动势常数 Back emf constant	Vrms/rad/s	2.7
最大额定功耗 Maximum rated power consumption	W(25°C)	24.1
电机常数 Motor constant	Nm/√W	2.0
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.005
电机重量 Motor weight	Kg	6.5
最高转速 Maximum speed	rmp	250
重复精度 Repeatability	Arc sec	±2.5
分辨率(单圈绝对值) Resolution (absolute value per turn)	sin/cos	23
最大轴向载荷 Maximum axial load	N	1500
最大径向载荷 Maximum radial load	N.m	20
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005

#### 注:【通用规格】

Note: General Specification

电机卷线部 Motor winding part    绝缘等级:F类, Insulation grade: Class F,    绝缘耐压:60秒@1500V, Withstand voltage: 60s @1500V    绝缘电阻:10MΩ以上(500VDC) Insulation resistance: more than 10MΩ (500VDC)

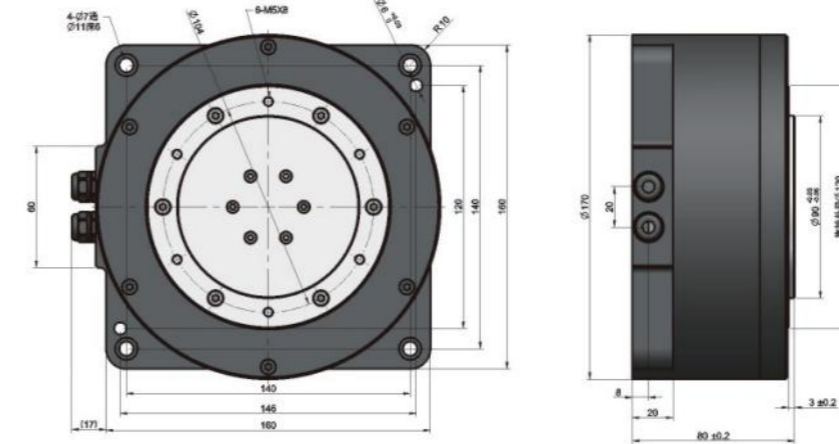


#### 安装尺寸图

Installation dimension drawing

### TPA-M-170

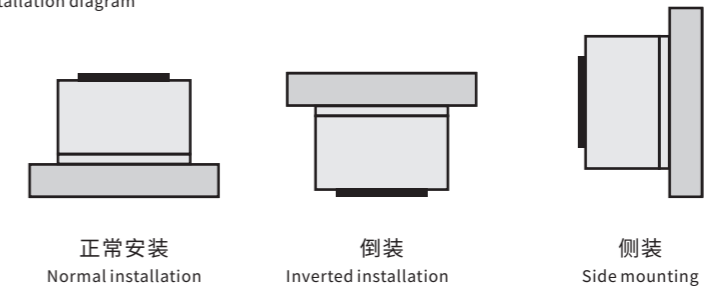
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## TPA-M-230 规格(定制)

### TPA-M-230 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-230-075
连续转矩 Continuous torque	N.m	10.2
连续电流 Continuous current	A rms	3.0
最大转矩 Maximum torque	N.m	30.6
最大电流 Maximum current	A rms	9
转矩常数 Torque constant	Nm/Arms	3.4
电阻 Resistance	ohms(25°C)	13.6
电感 Inductance	mH(25°C)	7.8
极数 Number of poles	-	40
反电动势常数 Back emf constant	Vrms/rad/s	2.8
最大额定功耗 Maximum rated power consumption	W(25°C)	233.7
电机常数 Motor constant	Nm/√W	5.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.032
电机重量 Motor weight	Kg	5.9
最高转速 Maximum speed	rmp	500
定位精度 Positioning accuracy	Arc sec	±30
重复精度 Repeatability	Arc sec	±1
分辨率 DPI	sin/cos	16384
轴向偏摆 Axial deflection	mm	0.002
径向偏摆 Radial deflection	mm	0.002
电机高度 Motor height	mm	75

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

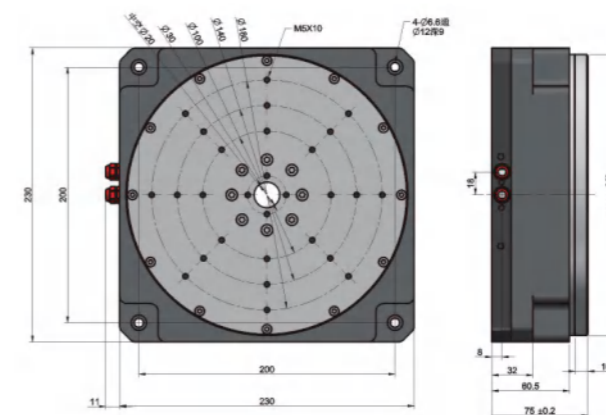


#### 安装尺寸图

Installation dimension drawing

### TPA-M-230

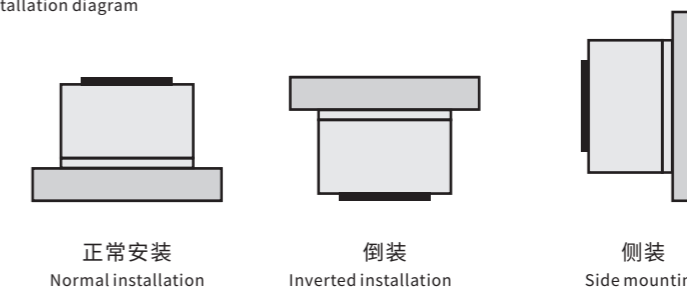
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
 1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
 2. Optional beats in brackets.  
 3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## TPA-M-408 规格(定制)

### TPA-M-408 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-408-102
连续转矩 Continuous torque	N.m	150.5
连续电流 Continuous current	A rms	8.6
最大转矩 Maximum torque	N.m	462.0
最大电流 Maximum current	A rms	26.4
转矩常数 Torque constant	Nm/Arms	17.5
电阻 Resistance	ohms(25°C)	2.8
电感 Inductance	mH(25°C)	15.6
极数 Number of poles	-	40
反电动势常数 Back emf constant	Vrms/rad/s	14.3
电机常数 Motor constant	Nm/√W	17.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.38
电机重量 Motor weight	Kg	43.5
最高转速 Maximum speed	rmp	300
定位精度 Positioning accuracy	Arc sec	±50
重复精度 Repeatability	Arc sec	±1.3
分辨率 DPI	sin/cos	47200
最大轴向载荷 Maximum axial load	N	40000
最大径向载荷 Maximum radial load	N.m	400
轴向偏摆 Axial deflection	mm	0.008
径向偏摆 Radial deflection	mm	0.008

**注:【通用规格】**

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

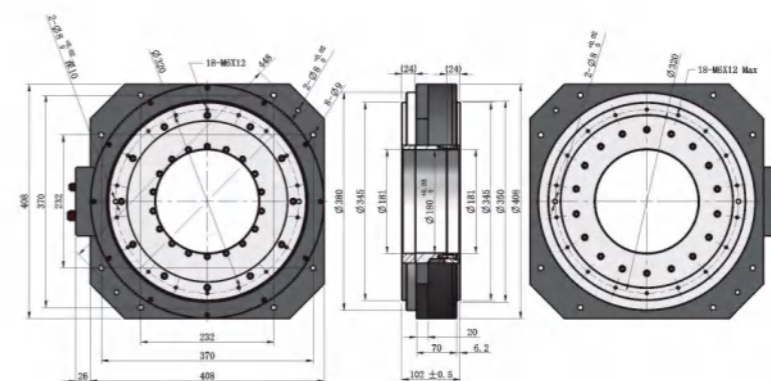


**安装尺寸图**

Installation dimension drawing

TPA-M-408

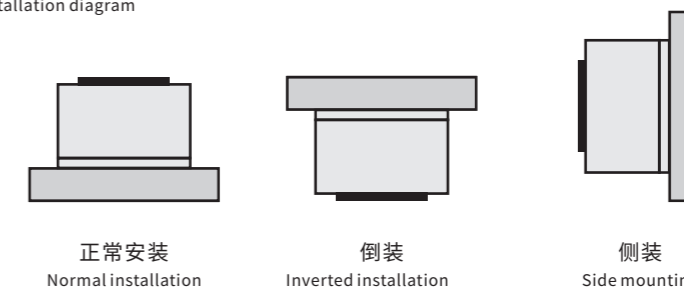
单位:Unit:mm



**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
 1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
 2. Optional beats in brackets.  
 3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-480 规格(定制)

### TPA-M-480 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-480-118
连续转矩 Continuous torque	N.m	270.0
连续电流 Continuous current	A rms	6.0
最大转矩 Maximum torque	N.m	675.0
最大电流 Maximum current	A rms	15
转矩常数 Torque constant	Nm/Arms	45.0
电阻 Resistance	ohms(25°C)	10.1
电感 Inductance	mH(25°C)	56.2
极数 Number of poles	-	40
反电动势常数 Back emf constant	Vrms/rad/s	36.7
电机常数 Motor constant	Nm/√W	17.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.25
电机重量 Motor weight	Kg	44.7
最高转速 Maximum speed	rmp	80
定位精度 Positioning accuracy	Arc sec	±30
重复精度 Repeatability	Arc sec	±1.5
分辨率 DPI	sin/cos	47200
最大轴向载荷 Maximum axial load	N	40000
最大径向载荷 Maximum radial load	N.m	400
轴向偏摆 Axial deflection	mm	0.008
径向偏摆 Radial deflection	mm	0.008

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

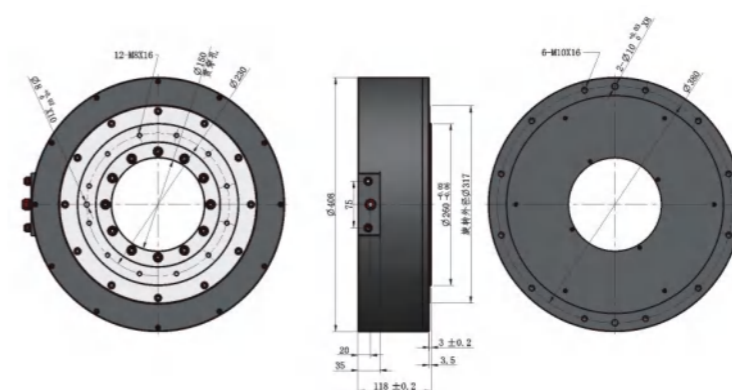


#### 安装尺寸图

Installation dimension drawing

### TPA-M-480

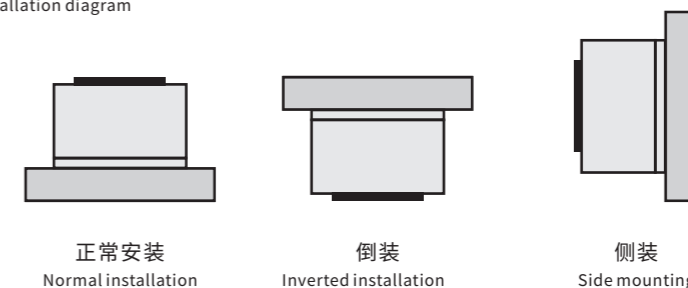
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
 1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
 2. Optional beats in brackets.  
 3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram





## TPA-M-503 规格(定制)

### TPA-M-503 series Specifications (Custom)

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-503
连续推力 Continuous thrust	X	21.0
连续电流 Continuous current	A rms	1.0
峰值推力 Peak thrust	N	63.0
峰值电流 Maximum current	A rms	3.0
电阻 Resistance	ohms(25°C)	9
电感 Inductance	mH(25°C)	9.5
反电动势常数 Back emf constant	Vrms/rad/s	17.14
转矩常数 Torque constant	Nm/Arms	21.0
极距 Polar distance	mm	14.0
总重量 Gross weight	Kg	1
分辨率 DPI	sin/cos	20μm
工作行程 operating stroke		+7mm

#### 注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

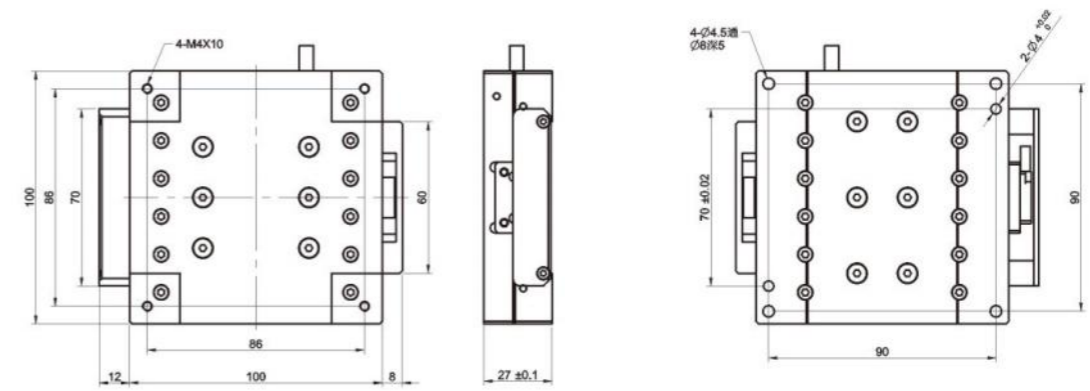


#### 安装尺寸图

Installation dimension drawing

### TPA-M-503

单位:Unit:mm



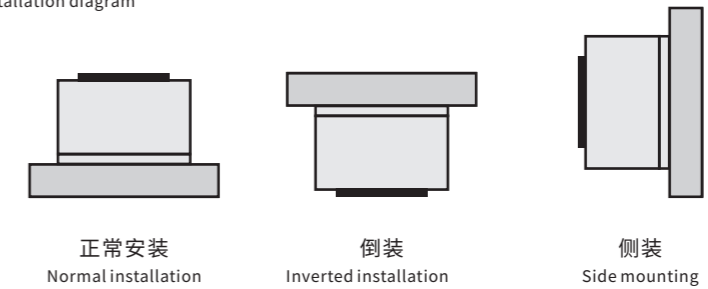
#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

#### Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data

## TPA-M-100大中空电机

### TPA-M-100 Large hollow motor

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-100-035
连续转矩 Continuous torque	N.m	1.0
连续电流 Continuous current	A rms	1.5
最大转矩 Maximum torque	N.m	3
最大电流 Maximum current	A rms	4.5
转矩常数 Torque constant	Nm/Arms	0.67
电阻 Resistance	ohms(25°C)	6.8
电感 Inductance	mH(25°C)	4.3
极数 Number of poles	-	20
反电动势常数 Back emf constant	Vrms/rad/s	0.55
最大额定功耗 Maximum rated power consumption	W(25°C)	29.2
电机常数 Motor constant	Nm/√W	0.2
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	4
电机重量 Motor weight	Kg	1.1
最高转速 Maximum speed	rmp	350
定位精度 Positioning accuracy	Arc sec	±50
重复精度 Repeatability	Arc sec	±2.5
分辨率 DPI	sin/cos	5000
最大轴向载荷 Maximum axial load	N	50
轴向偏摆 Axial deflection	mm	0.02
电机高度 Motor height	mm	35

#### 注:【通用规格】

Note: General Specification

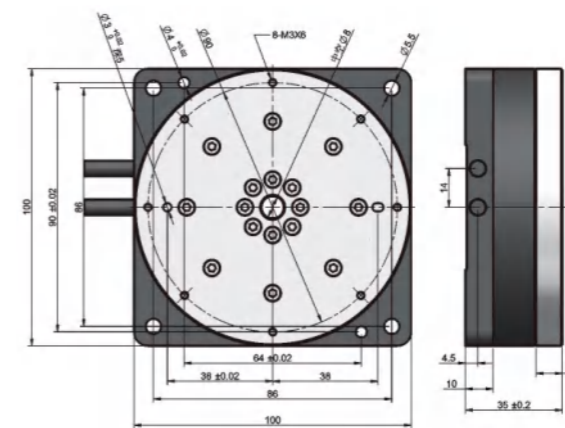
电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

#### 安装尺寸图

Installation dimension drawing

### TPA-M-100

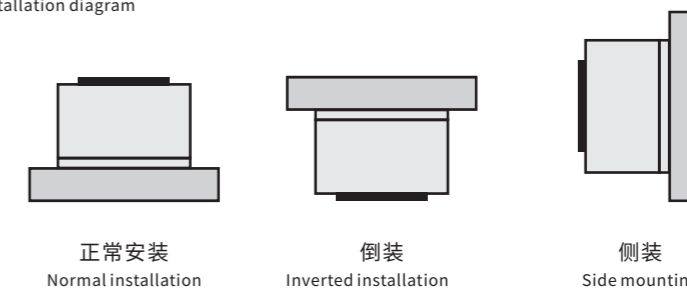
单位:Unit:mm



#### 备注:

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

#### 安装示意图 Installation diagram



## TPA-M-400大中空电机

### TPA-M-400 Large hollow motor

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-400-052
连续转矩 Continuous torque	N.m	30
连续电流 Continuous current	A rms	1.2
最大转矩 Maximum torque	N.m	80
最大电流 Maximum current	A rms	3
转矩常数 Torque constant	Nm/Arms	26.7
电阻 Resistance	ohms(25°C)	28.9
电感 Inductance	mH(25°C)	38
极数 Number of poles	-	60
反电动势常数 Back emf constant	Vrms/rad/s	21.8
最大额定功耗 Maximum rated power consumption	W(25°C)	79.5
电机常数 Motor constant	Nm/√W	1.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.13
电机重量 Motor weight	Kg	16.9
定位精度 Positioning accuracy	Arc sec	±15
重复精度 Repeatability	Arc sec	±1.5
最大轴向载荷 Maximum axial load	N	5000
最大径向载荷 Maximum radial load	N.m	50
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005
电机高度 Motor height	mm	52

**注：【通用规格】**

Note: General Specification

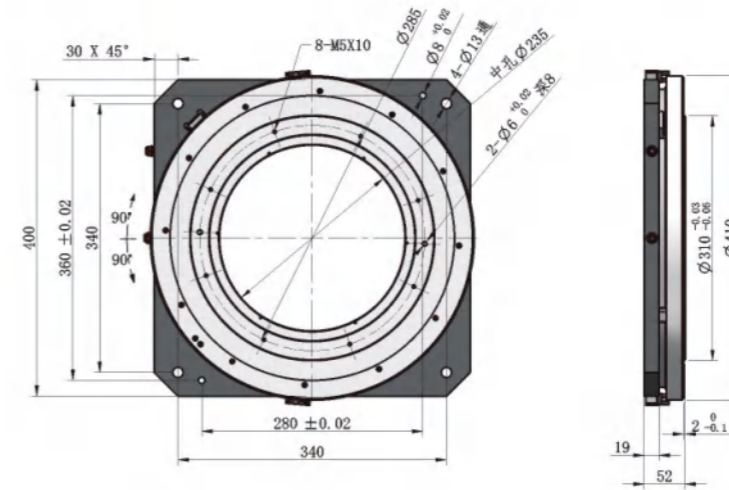
电机卷线部 Motor winding part    绝缘等级:F类, Insulation grade: Class F,    绝缘耐压:60秒@1500V, Withstand voltage: 60s @1500V    绝缘电阻: 10MΩ以上(500VDC) Insulation resistance: more than 10MΩ (500VDC)

**安装尺寸图**

Installation dimension drawing

TPA-M-400

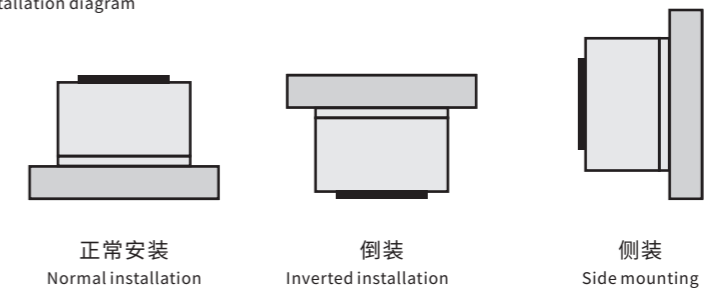
单位:Unit: mm



**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
  2. Optional beats in brackets.
  3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图 Installation diagram**



正常安装  
Normal installation

倒装  
Inverted installation

侧装  
Side mounting



# TPA-M-500大中空电机

## TPA-M-500 Large hollow motor

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-500-065
连续转矩 Continuous torque	N.m	43.0
连续电流 Continuous current	A rms	2.0
最大转矩 Maximum torque	N.m	60.2
最大电流 Maximum current	A rms	2.8
转矩常数 Torque constant	Nm/Arms	21.5
电阻 Resistance	ohms(25°C)	6.50
电感 Inductance	mH(25°C)	10.00
极数 Number of poles	-	80
反电动势常数 Back emf constant	Vrms/rad/s	18.5
最大额定功耗 Maximum rated power consumption	W(25°C)	49.6
电机常数 Motor constant	Nm/√W	1.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.6
电机重量 Motor weight	Kg	27.9
定位精度 Positioning accuracy	Arc sec	±15
重复精度 Repeatability	Arc sec	±1.5
电机有效行程 Effective stroke of motor	deg	±100
最大轴向载荷 Maximum axial load	N	5000
最大径向载荷 Maximum radial load	N.m	50
轴向偏摆 Axial deflection	mm	0.008
电机高度 Motor height	mm	65

**注：【通用规格】**

Note: General Specification

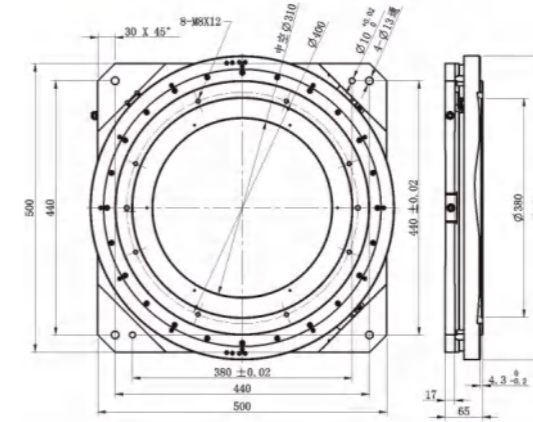
电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10MΩ以上(500VDC)  
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10MΩ (500VDC)

**安装尺寸图**

Installation dimension drawing

TPA-M-400

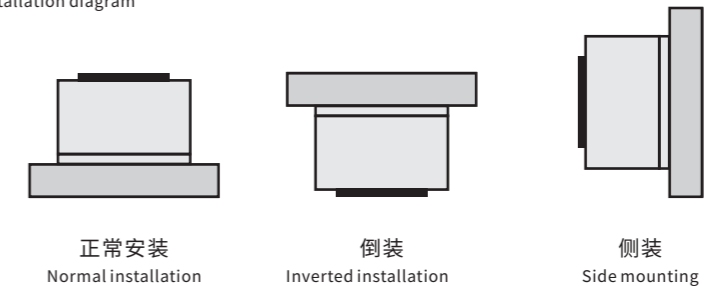
单位:Unit:mm



**备注:**

- 1、测量时环境温度为25°C,取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。
- Remarks:  
 1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
 2. Optional beats in brackets.  
 3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图** Installation diagram



## TPA-M-560大中空电机

TPA-M-560 Large hollow motor

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-560-067
连续转矩 Continuous torque	N.m	50.0
连续电流 Continuous current	A rms	1.0
最大转矩 Maximum torque	N.m	125.0
最大电流 Maximum current	A rms	2.5
转矩常数 Torque constant	Nm/Arms	50.0
电阻 Resistance	ohms(25°C)	23.10
电感 Inductance	mH(25°C)	33.00
极数 Number of poles	-	104
反电动势常数 Back emf constant	Vrms/rad/s	40.8
最大额定功耗 Maximum rated power consumption	W(25°C)	44.1
电机常数 Motor constant	Nm/√W	1.6
转动惯量 Moment of inertia	Kg.m <sup>2</sup>	0.72
电机重量 Motor weight	Kg	33.5
定位精度 Positioning accuracy	Arc sec	±30
重复精度 Repeatability	Arc sec	±2.5
最大轴向载荷 Maximum axial load	N	5000
最大径向载荷 Maximum radial load	N.m	50
轴向偏摆 Axial deflection	mm	0.005
径向偏摆 Radial deflection	mm	0.005
电机高度 Motor height	mm	67

**注：【通用规格】**

Note: General Specification

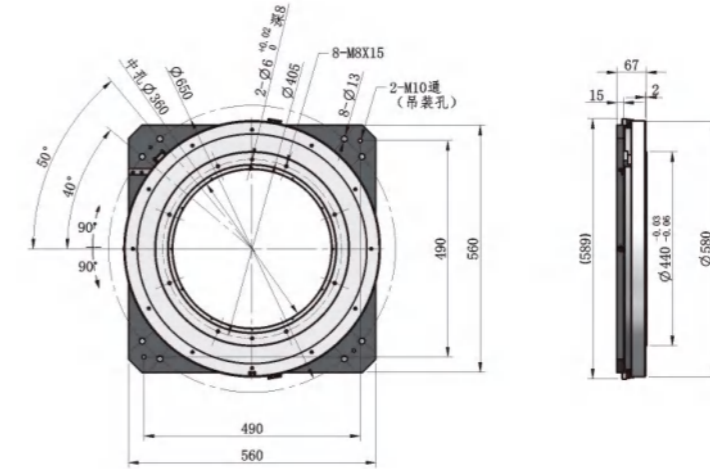
电机卷线部 Motor winding part    绝缘等级:F类, Insulation grade: Class F,    绝缘耐压:60秒@1500V, Withstand voltage: 60s @1500V    绝缘电阻: 10MΩ以上(500VDC), Insulation resistance: more than 10MΩ (500VDC)

**安装尺寸图**

Installation dimension drawing

TPA-M-560

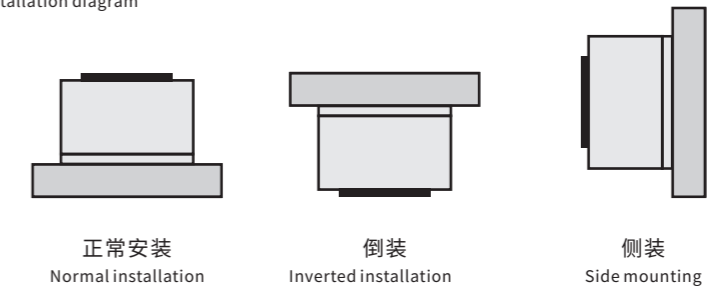
单位:Unit:mm



**备注：**

- 1、测量时环境温度为25°C，取决于散热环境。
  - 2、括号内为可选跳动。
  - 3、工作温度：0-40°C（无结冰），工作湿度10%RH-80%RH（无冷凝）。
- Remarks:  
1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.  
2. Optional beats in brackets.  
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

**安装示意图 Installation diagram**





## 直线电机选型指南

### Guide to linear motor selection

#### 1、直线电机的选型包括最大推力和持续推力需求的计算。

The selection of linear motor includes the calculation of maximum thrust and continuous force requirement.

#### 2、最大推力由移动负载质量和最大加速度大小决定。

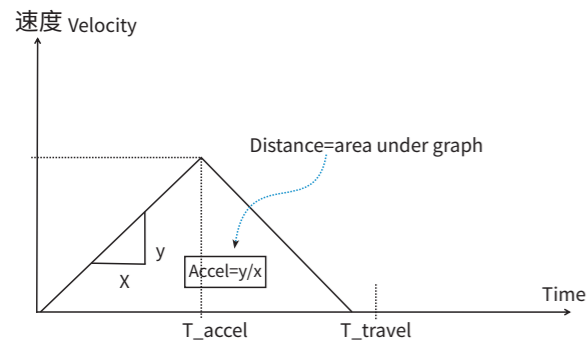
The maximum thrust is determined by the mass of moving load and the magnitude of maximum acceleration.

3、通常，我们不知道实际加速度需求。但是我们有电机运行时间要求。给定运动形成距离和所需行程时间，便可以此计算出所需的加速度。一般，对于短行程来说，我们推荐使用三角型速度模式(无匀速)，长行程的话，梯形速度模式会更有效率。在三角型速度模式中，电机的运动无匀速段。

In general, we don't know what the actual acceleration needs are. But we have the motor running time requirement. The desired acceleration can be calculated given the distance of motion and the required travel time. Generally, for short trips, we recommend using a triangular speed mode (no uniform speed). The trapezoidal speed mode is more efficient for long stroke. In the triangle speed mode, the motor motion has no uniform speed segment.

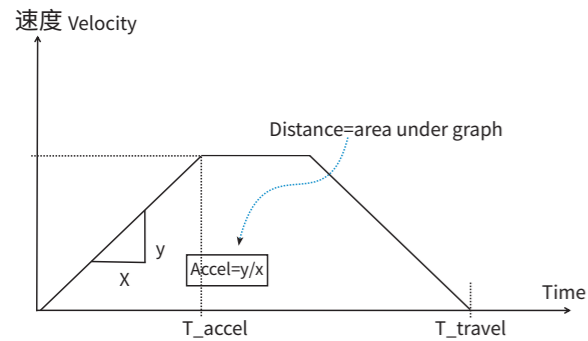
#### 4、三角模式，加速度=4\*位移/运动时间<sup>2</sup>

Triangular mode, Acceleration=4\*displacement/(time)<sup>2</sup>



#### 5、梯形模式，预设匀速度可以帮助解决加速度。

Trapezoidal mode, preset uniform speed can help solve acceleration.



加速度=匀速/(运动时间-位移/匀速)

Acceleration = uniform speed / (movement time - displacement / uniform speed)

#### 6、相类似的，计算减速度大小与计算加速度相类似。除非存在一个不平衡的力(重力)作用在电机上。

Similarly, calculating the deceleration is similar to calculating the acceleration. Unless there is an unbalanced force (gravity) acting on the motor.

#### 7、通常为了维持匀速过程和停滞阶段，摩擦力和外界应力的施力也需要计算。

注：为了维持匀速，电机会对抗摩擦力和外界应力。电机上伺服停滞时则会对抗外界应力。

Usually, in order to maintain the constant speed process and stagnation stage, the application of friction force and external stress also needs to be calculated.

Note: In order to maintain a constant speed, the motor will resist friction and external stress. When the upper servo of the motor stops, it will resist the external stress.

#### 8、计算持续推力的公式如下：

The formula for calculating the sustained thrust is as follows:

$$RMSForce = \sqrt{\frac{Fa^2 \times Ta + Fc^2 \times Tc + Fd^2 \times Td + Fw^2 \times Tw}{Ta + Tc + Td + Tw}}$$

RMSForce=持续推力 Sustained thrust

Fa=加速度力 Acceleration force

Tc=匀速时间 Uniform time

Fc=匀速段力 Uniform speed force

Ta=加速时间 Acceleration time

Fd=减速度力 Deceleration force

Td=减速时间 Deceleration time

Fw=停滞力 Stagnation force

Tw=停滞时间 Stagnation time

#### 9、根据最大推力和持续推力选择一个电机。客户应该将安全系数设为 20%-30% 以便将摩擦力和外界应力抵消为 0。

Select a motor according to the maximum thrust and Sustained thrust. Customers should set the safety factor to 20%-30% to offset the friction and external stress to zero.

#### 10、举个例子，一个应用中，电机需在三角模式下让电机在 0.2 秒内，让 4KG 的负载移动 0.3 米。电机同行程中返程前停滞时间为 0.15 秒。

假设摩擦力和其它不平衡力不存在。

Select a motor according to the maximum thrust and continuous thrust. Customers should set the safety factor to 20%-30% to offset the friction and external stress to zero.

$$RSMForce = \sqrt{\frac{(120)^2 \times (0.1) + (120)^2 \times (0.1)}{0.1 + 0.1 + 0.15}} = 90.7N$$

加速度 Acceleration=减速度 Deceleration=4x0.3 / (0.2)<sup>2</sup> = 30m/s<sup>2</sup>

最大推力=加速度力 Acceleration force=减速度力 Deceleration force=负载 Load x 加速度 Acceleration=4x30=120N



## 直驱马达选配

### Selection of direct drive motor

开始选配马达 Start matching motors.

以下内容将说明如何根据速度、行程、负载等需求来选择合适的马达。进行选配工作的基本流程如下三点：

The following will explain how to choose the appropriate motor according to the requirements of speed, stroke, load, etc. The basic process of matching is as follows:

- ◇ 决定运动规划及设定运动参数 Decide on sports planning and set sports parameters.
- ◇ 最大推力与持续推力的计算 Calculation of maximum thrust and sustained thrust.
- ◇ 选择合适的马达 Select the appropriate motor.

使用符号 Use symbols

X:行程 (mm) X: Stroke (mm)

T:移动时间 (sec) T: moving time (sec)

a:加速度 (mm/s<sup>2</sup>) a: Acceleration (mm/S<sup>2</sup>)

V:速度 (mm/s) V: Speed (mm/s)

ML:负载 (kg) ML: Load (kg)

g:重力加速度 (mm/s<sup>2</sup>) G: Acceleration of gravity (mm/S<sup>2</sup>)

Fp:瞬间推力 (N) Fp: Instantaneous thrust (N)

Fa:动定子间吸引力 (适用于LMS,LMF系列) (N)

Fa: Attraction between moving stator (applicable to LMS,LMF series) (N)

Fc:持续推力 (N) Fc: Sustained thrust (N)

Fi:惯性力 (N) Fi: Inertial force (N)

Kf:推力常数 (N/Arms) Kf: Thrust constant (N/Arms)

Ip:瞬间电流 (Arms) Ip: Instantaneous current (Arms)

Ie:等效电流 (Arms) Ie: Equivalent current (Arms)

Ic:连续电流 (Arms) Ic: Continuous Current (Arms)

V0:启动速度 (mm/s) V0: Starting speed (mm/s)

STEP1 决定运动速度规划与运动参数,为能正确的决定出适合使用者需求的马达,选用前必须了解下列运动公式的计算。

Decide the motion speed planning and motion parameters. In order to correctly determine the motor suitable for users' needs, you must know the calculation of the following

运动公式 Motion formula

常用的基本运动学方程式描述如下: Common basic kinematics equations are described as follows:

$$V=V_0+aT$$

$$X=V_0T+\frac{1}{2}aT^2$$

其中V是速度,a是加速度,T是移动时间X是移动距离。Where V is the speed, A is the acceleration, T is the moving time and X is the moving distance.

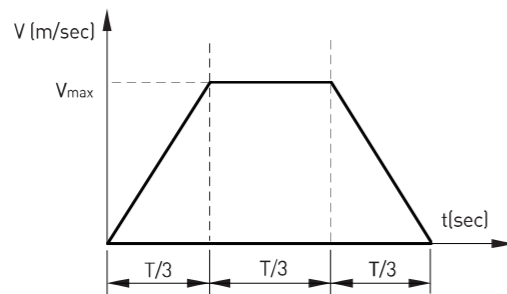
使用者可以选择这四个变数 (V,a,T与X) 中的任两个变数当设计值,剩下的两个变数可以由上述公式计算得到。

Users can choose any two of these four variables [V, A, T and X] as design values, and the remaining two variables can be calculated by the above formula.

速度规划 Speed planning

1、1/3-1/3-1/3梯形轨迹,若已先给定行程(X)与移动时间(T),则可以采用最常用也有效率的速度规划方式,也就是1/3-1/3-1/3梯形轨迹的点对点运动规划方式,因其可以提供一种最佳化运动方式同时只需要最少功率,其规划方式为将加速段、等速段、减速段分成三等阶段,其速度曲线如下:

1/3-1/3-1/3 trapezoidal track, if the travel [x] and moving time [t] are given first, the most commonly used and efficient speed planning method can be adopted, that is, 1/3-1/3 trapezoidal track. Trace point-to-point motion planning method, because it can provide an optimal motion mode and only need the least power, its planning method is to divide the acceleration section, the constant speed section and the deceleration section into three classes. By stages, its speed curve is as follows:



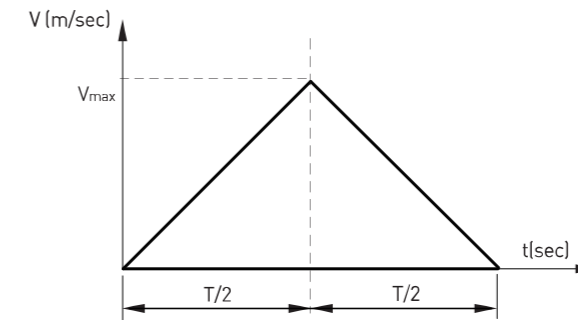
$$V_{\max} = 1.5 \times \frac{X}{T} \quad (\text{Because } X = \frac{V}{2} \times \frac{T}{3} + V \times \frac{T}{3} + \frac{V}{2} \times \frac{T}{3})$$

$$a_{\max} = \frac{V_{\max}}{T/3} = \frac{4.5X}{T^2}$$

在此用的参数定义同于运动公式里的描述 The parameter definitions used here are the same as those described in the motion formula.

2、1/2-1/2三角形轨迹若已先给定X与T,另一种常采用的运动规划方式亦即1/2-1/2三角形轨迹。其规划方式分成加速段与减速段两个部分。其速度曲线如下:

If x and t of 1/2-1/2 triangle trajectory are given first, another commonly used motion planning method is 1/2-1/2 triangle trajectory. The planning method is divided into two



$$V_{\max} = 2 \times \frac{X}{T}$$

$$a_{\max} = \frac{4X}{T^2}$$

第一种运动规划所计算出的加速度会大于第二种运动规划,因此采用第一种规划通常需要较大推力马达。而第二种规划的结果会选择较小的马达,可是因为其最大速度(Vmax)会比相对较大,所以需要确认是否足够。

The acceleration calculated by the first motion plan will be larger than that calculated by the second motion plan, so the first motion plan usually requires a larger thrust motor. The result of the second plan will be better. Small motor, but because its maximum speed (Vmax) will be relatively large, it is necessary to confirm whether it is enough.

3、常用公式 Common formula.

	1/3 -1/3-1/3 Trapezoid profile	Triangle profile
V (m/sec)	$1.5 \times \frac{X}{T}$	$2 \times \frac{X}{T}$ , or $\sqrt{a \times X}$
a	$\frac{4.5X}{T^2}$	$\frac{4X}{T^2}$
t	$\frac{X}{V_{\max}} + \frac{V_{\max}}{a}$ (if $\frac{X}{V_{\max}} \geq \frac{V_{\max}}{a}$ )	



## 直驱马达选配

### Selection of direct drive motor

STEP2 瞬间推力与等效推力计算 Calculation of instantaneous thrust and equivalent thrust.

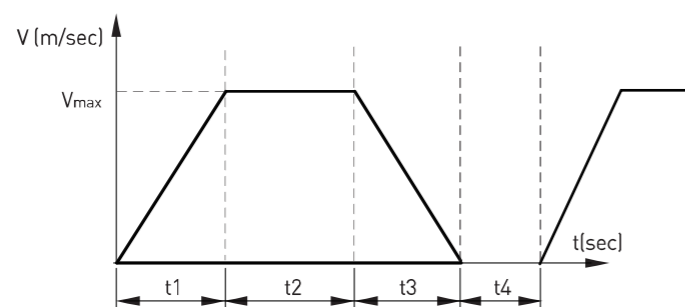
瞬间推力的计算可以由下式: The instantaneous thrust can be calculated by the following formula:

$$F_p = M_L \times a_{\max} + (M_L \times g + F_a) \times \mu = F_i + F_f$$

其中Fi是惯性力,而Ff是摩擦力,且μ是摩擦系数。在大部分的使用案例,运动方式常是周期性的点对点运动。假设一周期性运动,其中t4为运动完的停留时间,因此该周期运动的等效推力计算如下式:

Where Fi is inertia force, Ff is friction force, and μ is friction coefficient. In most use cases, the movement mode is often periodic point-to-point movement. Assume a periodic motion, where t4 is the residence time after exercise, so the equivalent thrust of this periodic exercise is calculated as follows:

$$F_e = \sqrt{\frac{(F_i + F_f)^2 t_1 + F_f^2 t_2 + (F_i - F_f)^2 t_3}{t_1 + t_2 + t_3 + t_4}}$$



对应的瞬间电流Ip与等效电流Ie可由马达推力常数代入下式计算得知。

The corresponding instantaneous current Ip and equivalent current Ie can be calculated by substituting the motor thrust constant into the following formula.

$$I_p = \frac{F_p}{K_f} \quad I_e = \frac{F_e}{K_f}$$

STEP3 由瞬间推力需求选择马达并确认驱动电流 Select the motor according to the instantaneous thrust demand and confirm the driving current.

透过TPA型录的马达规格表,使用者可以由瞬间推力需求选择适合的马达,之后使用者可以计算确认运动规划后所需供应电流是否有在规格限制内。

Through the motor specification table of TPA catalogue, the user can select a suitable motor according to the instantaneous thrust demand, and then the user can calculate and confirm whether the required supply current exists after the exercise planning. Within specifications.

$$I_p = \frac{F_p}{K_f} < I_p \text{ [查选用马达规格表] [Check the motor specification table]}$$

$$I_e = \frac{F_e}{K_f} < I_c \text{ [查选用马达规格表] [Check the motor specification table]}$$

使用者需要考量等效电流与连续电流的比值,通常规划后其比值(Ie/Ic)建议设计在0.7以内较安全。

Users need to consider the ratio of equivalent current to continuous current. Usually, after planning, its ratio [Ie/Ic] is recommended to be designed within 0.7, which is safer.

线性马达选用范例 Examples of linear motor selection.

举例来说,假设总负载有5公斤(移动机构1公斤与客户负载4公斤),摩擦系数μ为0.01,行程500mm,移动时间为400ms及停留时间为350ms。

For example, suppose that the total load is 5kg (1kg of mobile mechanism and 4kg of customer load), the friction coefficient μ is 0.01, the travel distance is 500mm, the moving time is 400ms and the residence time is 350ms.

一开始,我们可以计算这四项变数(Vmax、amax、Fp与Fe),在此列选择第一种运动规划方式,而马达选择LMC系列,推力计算结果如下:

At the beginning, we can calculate these four variables [Vmax, amax, Fp and Fe], select the first motion planning method in this column, and select LMC series for the motor. The thrust calculation results are as follows:

$$V_{\max} = 1.5 \times \frac{X}{T} = 1.5 \times \frac{0.5}{0.4} = 1.875 \text{ (m/sec)}$$

$$a_{\max} = \frac{4.5 \times X}{T^2} = \frac{4.5 \times 0.5}{(0.4)^2} = 14.06 \text{ (m/sec}^2\text{)}$$

$$F_p = M_L \times a_{\max} + (M_L \times g + F_a) \times \mu$$

$$= 5 \times 14.06 + 5 \times 9.81 \times 0.01 = 70.3 + 0.49 = 70.79 \text{ (N)}$$

$$F_e = \sqrt{\frac{[(70.3 + 0.49)^2 + 0.49^2 + (70.3 - 0.49)^2] \times 0.1333}{0.4 + 0.35}}$$

$$= 41.92 \text{ (N)}$$

在此列所得结果,可以选择瞬间推力有187N且连续推力有62N的LMCA6(p.46),其推力常数为33.8N/A(rms),驱动电流就可以随之得到:

I from the results obtained in this column, LMCA6(p.46) with instantaneous thrust of 187N and continuous thrust of 62N can be selected, and its thrust constant is 33.8 N/A (rms), and the driving current can be obtained as follows:

$$I_p = \frac{F_p}{K_f} = \frac{70.79}{33.8} = 2.09 \text{ (Arms)} < 5.4 \text{ (Arms)}$$

$$I_p = \frac{F_e}{K_f} = \frac{41.92}{33.8} = 1.24 \text{ (Arms)} < 1.8 \text{ (Arms)}$$

$$\frac{I_e}{I_c} = \frac{1.24}{1.8} \times 100\% = 68.89\% < 70\%$$

最后由电流计算结果,选择LMCA6可以符合此列的使用需求。



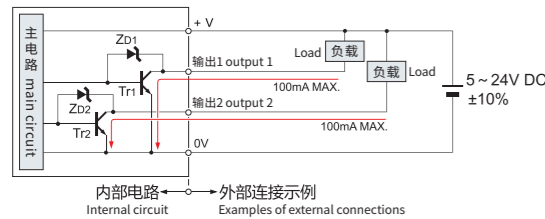
## 光电感应器接线说明

Wiring instructions of photoelectric sensor

### 直流4线式NPN输出 DC 4 wire NPN output

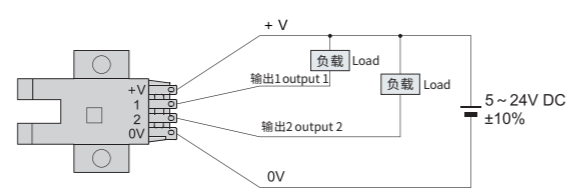
#### 输入、输出电路

Input and output circuits



#### 连接图

Connected graph



(注1): 对不使用的输出线, 请务必进行绝缘处理。

(Note 1): The unused output lines must be insulated.

符号... ZD1, ZD2: 电涌吸收齐纳二极管 Surge absorption zener diode  
Symbol... Tr1, Tr2: NPN输出晶体管 NPN output transistor

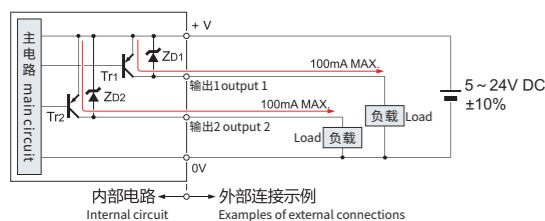
#### 输出动作 Output action

	输出动作 Output action
输出1 output 1	遮光时ON Shading time ON
输出2 output 2	入光时ON Incident light ON

### 直流4线式PNP输出 DC 4 wire PNP output

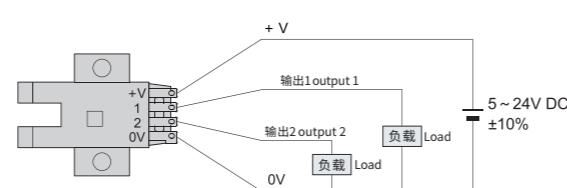
#### 输入、输出电路

Input and output circuits



#### 连接图

Connected graph



(注1): 对不使用的输出线, 请务必进行绝缘处理。

(Note 1): The unused output lines must be insulated.

符号... ZD1, ZD2: 电涌吸收齐纳二极管 Surge absorption zener diode  
Symbol... Tr1, Tr2: PNP输出晶体管 PNP output transistor

#### 输出动作 Output action

	输出动作 Output action
输出1 output 1	遮光时ON Shading time ON
输出2 output 2	入光时ON Incident light ON

## 使用安全注意事项

Safety precautions for use

◆ 以下为几条建议以防产品使用过程中产生问题。  
Here are a few Suggestions to prevent problems during product use.

为防止事故发生及安全维护, 请使用公司产品前, 必须了解产品的特性和使用条件、安装说明。

In order to prevent accidents and safety maintenance, before you use the company's product, you must understand the characteristics of the products and use conditions, installation instructions.

请在选型的参数范围内使用本型号的产品, 不可超出参数范围使用, 否则会造成不可预知的危险。如果是特殊条件使用, 必须确认在可控安全性能之内, 方能使用, 对产品参数如有疑问, 在未使用之前, 可咨询本公司相关技术。

Please use the product of this model within the selected parameter range, and do not use it beyond the parameter range, otherwise it will cause unpredictable danger. If it is used under special conditions, it must be confirmed that it is within the controllable safety performance before it can be used. If you have any questions about the product parameters, you can consult the relevant technology of our company before you use it.

请勿私自拆卸本产品结构, 功能做分解及改造, 如因人为造成的一切原因, 本公司不负责产品故障造成的损失。

Please do not disassemble the structure and function of this product without permission, and decompose and transform it. For all reasons caused by man-made, our company will not be responsible for the loss caused by product failure.

请注意: 当产品为垂直安装的时候, 请注意拆卸马达时, 滑座物件是否会自行下降, 建议拆卸的时候将滑座物件下降到最低端再拆卸。

Please note: When the product is installed vertically, please pay attention to whether the slide object will drop by itself when the motor is disassembled. It is

产品运行前, 先检查电缆线端子是否接触良好, 否则会导致电机发热发烫, 运行不畅。

Before running the product, check whether the cable terminals are in good contact or not, otherwise the motor will become hot and run poorly.

调试马达参数的时候需要考虑到惯性及加减速度等原因, 先手动控制, 来回点动, 防止调试不适当, 撞坏物件。不允许手及其它物体接触, 保持一定安全距离, 防止造成误伤。

When debugging the parameters of the motor, we need to consider the reasons of inertia, acceleration and deceleration. We should control the motor manually and move it back and forth to prevent the inappropriate debugging and damage the object. It is not allowed to contact hands and other objects to maintain a safe distance and prevent accidental injury.

当选用螺杆传动产品的时候, 如超出螺杆细长比参数, 可能会发生共振现象, 此时应降低移动速度。如选用皮带传动产品的时候, 如电机报警, 产品运行不动, 此时因加减速机, 调节电机刚性, 加大扭矩, 从而平稳运行。

When the screw drive product is selected, if the slenderness ratio parameter of the screw exceeds, resonance may occur, so the moving speed should be reduced. Choose a belt. When the product is driven, such as the motor alarm, the product will not move. At this time, the reducer is added to adjust the rigidity of the motor

安装本产品时, 请务必确认所有的螺丝均已按要求锁紧, 否则产品运行时可能会发生危险。

When installing this product, please make sure that all screws are locked as required, otherwise the product may be in danger during operation.



## 使用安全注意事项

### Safety precautions for use

请不要在接通电源的情况下进行产品拆装或零部件拆装, 否则可能发生触电、故障或其它危险。

Please do not disassemble the product or parts when the power is turned on, otherwise electric shock, malfunction or other dangers may occur.

禁止撕除警告标示, 或者警告标示被其它物品遮挡, 否则可能因为没有看到警告而导致事故发生。

It is forbidden to tear off the warning signs, or the warning signs are blocked by other objects, otherwise the accident may occur because you don't see the warning.

本注意事项无法完全涵盖所有的问题, 请务必详细了解产品及其使用说明, 并遵守相关安全守则, 做好必要保护措施, 以免造成产品损坏或导致人身安全问题。如有其它相关问题, 可咨询本公司。

This note can not cover all the problems. Please be sure to understand the product and its instructions in detail, comply with relevant safety codes, and take necessary protective measures to avoid product damage or personal safety problems. If you have any other related questions, you can consult us.

## MEMO

LNP3

LNP2

LNP

TPA-P

TPA-PQ

TPA-UH

DDR

参考资料  
Reference data



# 维护保养手册

## 一、日常检查项目

直驱电机滑台属于高精度全闭环控制运动结构,通常采用光栅编码器配套光栅尺,或者磁栅编码器配套磁栅尺作为模组的位置反馈,精密导轨做为导向支撑。所以关于直驱电机的维护、保养,会直接影响到模组的正常运行。

日常检查项目	
1. 检查部件表面是否有损伤,压痕和摩擦情况。	2. 在模组的搬运、安装及使用过程中,注意不要触摸到光栅尺表面,以防污染光栅尺,影响读数头读数。
3. 使用时确保动子运动范围内不能有异物。	4. 所见部位是否有不明粉尘、油渍、痕迹等。
5. 若编码器为磁栅编码器,要防止带磁性的物体接触和靠近磁栅尺,以免造成磁栅尺磁性消退或被磁化,导致磁栅尺报废。	6. 检查读数头窗口及光栅尺表面是否有污损,检查读数头与各部件之间的连接螺钉是否有松动,通电后读数头信号灯是否正常。

## 二、周期维护项目

配件	维护方案	维护周期	具体操作
线性滑轨	增加润滑脂(粘度:30-150cts)清理旧油污,注入新润滑脂。	每月一次或每行走100KM的距离。	用无尘布直接擦拭干净轨道表面及轨道珠槽,将新润滑脂直接注入油孔。
光栅尺 磁栅尺	可用无尘布,丙酮/酒精进行清洗。	2个月/次(工作环境恶劣,酌情缩短维护周期)。	带上橡胶手套,用沾有丙酮的无尘布轻度按压在光栅尺表面,从光栅尺的一端擦向光栅尺另一端,注意不要来回擦拭,防止刮花光栅尺面,要始终沿一个方向擦拭,一至两次即可。维护完成后,通电检查读数头在全程感应光栅尺信号灯是否正常。

## 三、异常问题以及解决方法

直驱滑台异常情况	维修、排除方法
电机超限	1. 电机超出极限位置; 2. 调整电机参数; a) 重启软件后整体复位。 b) 检查电机与行走臂之间的连接杆长度是否合适。
无法找到电机原点	1. 电机超出HM; 2. 手动移动行走臂,观察电机的位置; a) 更换读数头,重启复位。 b) 检查磁尺表面是否有损伤,若有则更换磁栅尺。
无法复位	1. 软件问题; 2. 重新下载电机板卡驱动程序试验; a) 更换驱动板卡。 b) 检查驱动板卡和电机外围接线是否有松动。
CAN总线通讯报警	a) 检查CAN Bus接线是否有松动。 b) 拔下PC板卡上的总线接头,如果有灰尘,清洁后重新插上试验。 c) 更换驱动板卡重新下载程序试验。
直驱电机运行有异响抖动	1. 检查相应机械部位,进行调整,必要时更换备件。 2. 调整电机PID参数。

另本公司负责自身商品的故障维修,并不负责因产品故障引起的其他损失。

# Maintenance manual

## 一、Daily inspection items

Direct driver slide table belongs to a high-precision full-closed-loop motion control structure, and usually adopts grating encoder with grating ruler or magnetic grating encoder with magnetic grating ruler as the position feedback of the module. Precision guide rails are used as guide supports. Therefore, the maintenance of direct driver will directly affect the normal operation of the module.

Daily inspection items	
1. Check the surface of parts for damage, indentation and friction.	2. Be careful not to touch the grating ruler during the handling, installation and use of the module. Surface, to prevent pollution grating ruler, affect the reading head reading.
3. When using, make sure that there is no foreign matter in the moving range of the Mover.	4. See if there are any unknown dust, oil stains, traces, etc.
5. If the encoder is a magnetic grid encoder, it is necessary to prevent objects with magnetism from contacting and approaching magnetism. Grid ruler, so as not to cause the magnetism of the magnetic grid ruler to fade or be magnetized, resulting in the scrapping of the magnetic grid ruler.	6. Check whether the window of the reading head and the surface of the grating ruler are stained, whether the connecting screws between the reading head and various parts are loose, and whether the signal lamp of the reading head is normal after being electrified.

## 二、Periodic maintenance project

Parts	Maintenance scheme	Maintenance cycle	Specific operation
Linear slide rail	Add grease (viscosity: 30-150cts) Clean up old grease and inject new grease.	Once a month or every 100KM.	Clean the track surface and track bead groove directly with a dust-free cloth, and directly inject new grease into the oil hole.
Grating ruler Magnetic grating ruler	Clean with lint-free cloth and acetone/alcohol. Wash.	2 months/time (the working environment is harsh, so it can be reduced as appropriate. Short maintenance period).	Wear rubber gloves, gently press them on the surface of the grating ruler with a dust-free cloth dipped in acetone, and wipe them from one end of the grating ruler to the other. Be careful not to wipe them back and forth to prevent scratching the grating ruler surface. Always wipe them in one direction, once or twice. After the maintenance is completed, electrify and check whether the reading head senses the grating ruler signal lamp in the whole process.

## 三、Exceptions and solutions

Abnormal situation of direct-drive sliding table	Maintenance and troubleshooting methods
Motor overrun	1. The motor exceeds the limit position; 2. Adjust motor parameters; a) The whole software is reset after restarting. b) Check whether the length of the connecting rod between the motor and the walking arm is appropriate.
Unable to find motor origin.	1. The motor exceeds HM; 2. Manually move the walking arm and observe the position of the motor; a) Replace the reading head and restart the reset. b) Check whether the surface of the magnetic ruler is damaged, and if so, replace the magnetic grid ruler.
Unable to reset	1. Software problems; 2. Download motor board driver test again; a) Replace the drive board. b) Check whether the peripheral wiring of the drive board and motor is loose.
CAN bus communication alarm	a) Check the CAN Bus wiring for looseness. b) Unplug the bus connector on the PC board. If there is dust, clean it and plug it in again for testing. c) Test of replacing drive board and downloading program again.
There is abnormal noise jitter in direct driver operation.	1. Check the corresponding mechanical parts, make adjustments, and replace spare parts if necessary. 2. Adjust the motor PID parameters.

In addition, the company is responsible for the fault maintenance of its own goods, and is not responsible for other losses caused by product failure.

Linear motor demand specification questionnaire

客户名称:		邮箱:	
电话:		:	
接洽人:		:	
应用产业			
	行程(mm):	(s):	(s):
	(mm/s):	(m/s <sup>2</sup> ):	kg      kg-m2
	m	m	
安装方式	水平 <input type="checkbox"/>	壁挂 <input type="checkbox"/>	倒挂 <input type="checkbox"/> 垂直 <input type="checkbox"/>
平台类型	单轴 <input type="checkbox"/>	XY轴 <input type="checkbox"/>	桥式 <input type="checkbox"/>
	龙门(单驱) <input type="checkbox"/>	龙门(双驱) <input type="checkbox"/>	其它_____
编码器类型			:_____ m
动子	:_____个	:_____m	
传感器位置	内置 <input type="checkbox"/> 外挂 <input type="checkbox"/>	: NPN    PNP	:_____个
应用方式	取放物料 <input type="checkbox"/>	CCD检测 <input type="checkbox"/>	加工物件 <input type="checkbox"/> 涂胶 <input type="checkbox"/>
	定点检测 <input type="checkbox"/>	位移检测 <input type="checkbox"/>	锁螺丝 <input type="checkbox"/> 其他:_____
应用环境			IP _____
	其它_____		
防尘装置	无 <input type="checkbox"/>		
	无 <input type="checkbox"/>		
用途	点到点运动 <input type="checkbox"/>	扫描 <input type="checkbox"/>	
特殊量测要求:			
建议规格:			
备注:			

Customer name		Email	
Telephone		Address	
Contact person		Title	
Applied industry			
Speed requirement	Stroke(mm)	Residence time(s)	Moving Time(s)
	maximum speed(mm/s)	Maximum acceleration(m/s <sup>2</sup> )	Load (kg) or moment of inertia (kg-m2)
Accuracy requirement	Straightness	Flatness	Verticality(s)
	Absolute accuracy( m)	Reproduction accuracy( m)	
Installation method	Horizontal <input type="checkbox"/>	Wall hangings <input type="checkbox"/>	Invert <input type="checkbox"/> Vertical <input type="checkbox"/>
Stage type	Single axis <input type="checkbox"/>	XY axis <input type="checkbox"/>	Bridge type <input type="checkbox"/>
	Gantry (single drive) <input type="checkbox"/>	Gantry (double drive) <input type="checkbox"/>	Other_____
Encoder type	Grating ruler <input type="checkbox"/>	Magnetic grating ruler <input type="checkbox"/>	DPI:_____ m
Mover	Quantity:_____ Pcs	Outlet length:_____m	
Sensor position	Inside <input type="checkbox"/> Outside <input type="checkbox"/>	Type: NPN <input type="checkbox"/> PNP <input type="checkbox"/>	Quantity:_____ Pcs
Application mode	Take and place materials <input type="checkbox"/>	CCD detection <input type="checkbox"/>	Machining material <input type="checkbox"/> Dispense <input type="checkbox"/> Handling <input type="checkbox"/>
	Fixed-point detection <input type="checkbox"/>	Displacement detection <input type="checkbox"/>	Lock screw <input type="checkbox"/> Other_____
Application environment	Dust free environment <input type="checkbox"/>	vacuum environment <input type="checkbox"/>	Temperature requirement: _____    IP level:_____
	Other_____		
Dustproof device	None <input type="checkbox"/>	Aluminum cover plate <input type="checkbox"/>	Sheet metal cover plate <input type="checkbox"/> Guideway Cover <input type="checkbox"/>
Square towing chain	None <input type="checkbox"/>	Yes <input type="checkbox"/>	
Type of drive	Pulse <input type="checkbox"/>	Bus <input type="checkbox"/>	Drive Brand _____    Brand:_____
Use	Point to point motion <input type="checkbox"/>	Scanning <input type="checkbox"/>	
Special measurement requirements			
Suggested specifications			
Remarks:			
Customer name:	Signature:	Date:	

LNP3
LNP2
LNP
TPA-P
TPA-PQ
TPA-UH
DDR
参考资料 Reference data