

SERVO PRESS MACHINE SYSTEM SOLUTION

伺服压力机系统解决方案

直驱技术 · 集成化 · 全套伺服解决方案

Direct-drive technology · Integrated design · Complete servo solution tailored



PHSC2609-V02



微信公众号

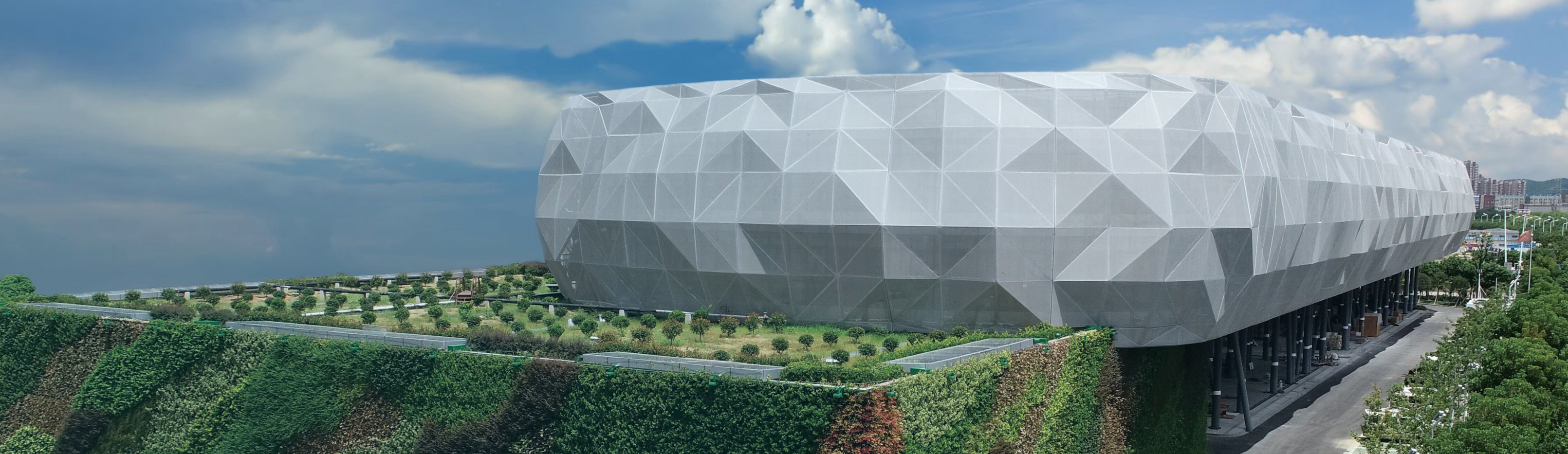
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宁波菲仕技术股份有限公司



6 大生产基地
Manufacturing bases



2 大研发中心
R&D center



19 个海内外分支机构
Subsidiaries



40+ 远销国家和地区
Sold in countries and regions

Company Profile 企业简介

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

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

Global presence 全球布局

立足全国 放眼全球

总部“永动谷”落户中国宁波北仑，在国内产业链完善的宁波、株洲、赣州、济南、宜宾建立大型生产基地。建立国内外分子公司 19 家，合作伙伴百余家，形成覆盖全国、面向全球市场的营销服务网络，逐步落地国际化战略。

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

It has established 19 domestic and foreign subsidiaries and more than 100 partners, formed a marketing service network covering the whole country and facing the global market, and gradually implemented the internationalization strategy.

Servo Motor Code

UPEK 系列伺服电机代码

UPEK 450 – B 040 – 06 F N3 (-**)

电机类型
Series identify

450
615
740

平台代码
Platform code

制动器
Brake

扭矩代码
Torque

转速代码
Speed code

冷却方式
Cooling

编码器类型
Encoder type

特殊指定
Special cification

B: 配制制动器
无: 无制动器
B: Equipped with brake
None: Without brake

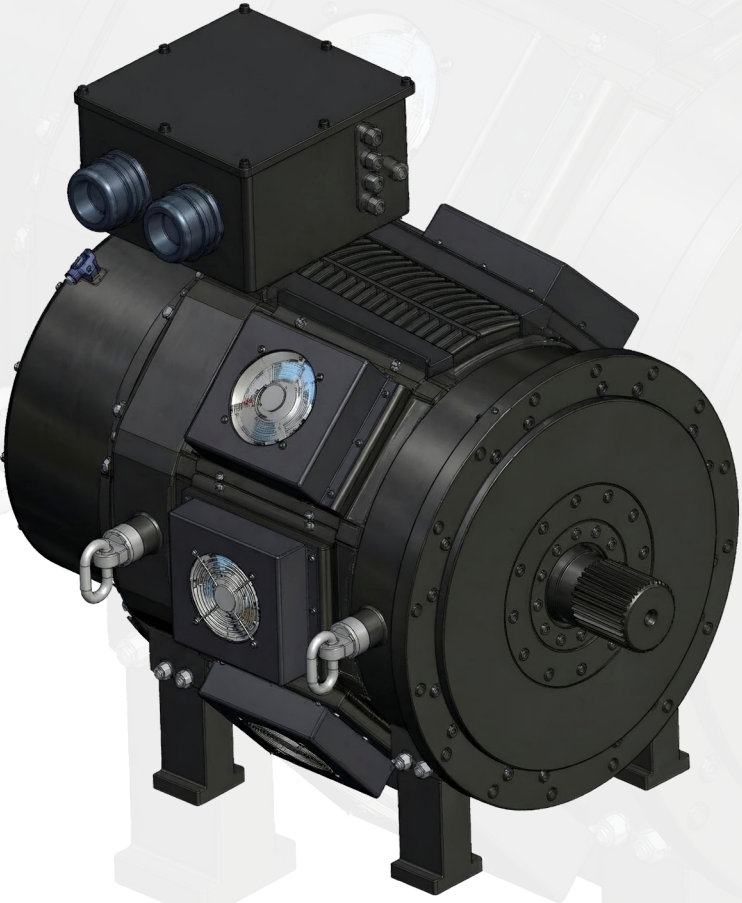
040: 40*100
=4000N·M
(峰值扭矩)
Peak Torque

06: 06*100
=600rpm
(峰值转速)
Peak speed

F = 风冷却
Air cooling

N3: 标配海德汉多圈绝对值编码器
(可选配其他类型编码器)
N3: Heidenhain multiturn absolute encoder as standard
(Other encoder types optional)

作为特殊指定备注
Special cification



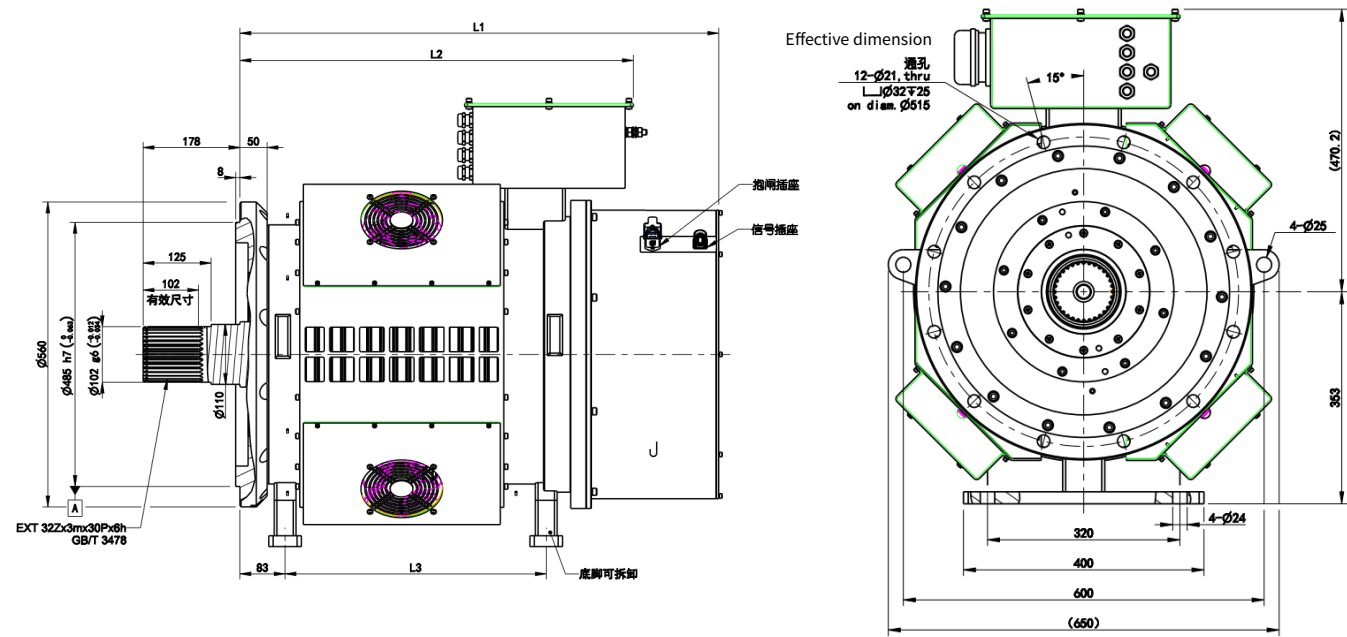
Servo Motor Code

伺服压力机直驱电机选型手册

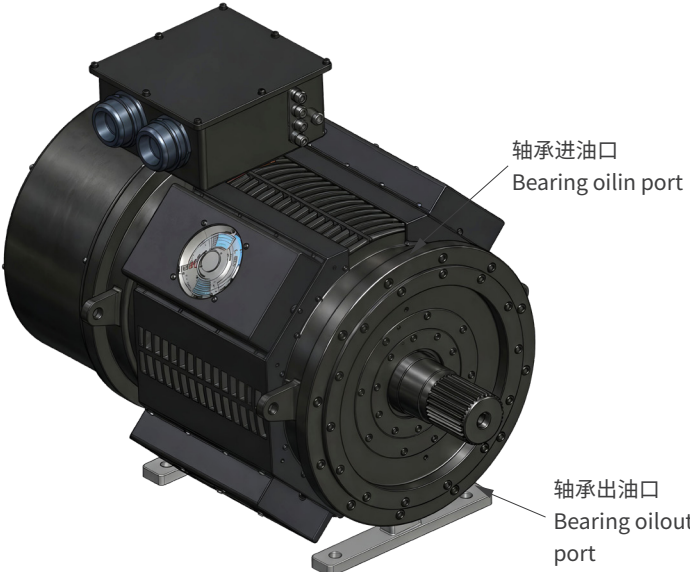
系列 Series	型号 Model	额定扭矩 Rated Torque	额定转速 Rated Speed	额定电流 Rated Current	峰值扭矩 Peak Torque	峰值转速 Peak Speed	峰值电流 Peak Current	驱动器配置参考 Drive Configuration Reference
		[Nm]	[rpm]	[A]	[Nm]	[rpm]	[A]	
UPEK450F (风冷) (Air Cooled)	UPEK450-040-06F	1100	300	67	4000	600	250	AXN 150.300
	UPEK450-040-10F	1100	500	112	4000	1000	410	AXN 200.500
	UPEK450-040-15F	1100	750	170	4000	1500	600	AXN 200.600
	UPEK450-055-06F	1500	300	91	5500	600	360	AXN 200.400
	UPEK450-055-10F	1500	500	152	5500	1000	600	AXN 200.600
	UPEK450-055-15F	1500	750	229	5500	1500	900	AXN DC1200
	UPEK450-070-05F	2300	250	117	7000	500	400	AXN 200.400
	UPEK450-070-10F	2300	500	234	7000	1000	800	AXN DC800
UPEK615F (风冷) (Air Cooled)	UPEK615-091-04F	3000	200	138	9100	400	490	AXN 200.500
	UPEK615-091-06F	3000	300	207	9100	600	735	AXN DC800
	UPEK615-091-12F	3000	600	414	9100	1150	1331	AXN DC800 *2
	UPEK615-110-04F	3600	200	173	11000	400	600	AXN 200.600
	UPEK615-110-06F	3600	300	259	11000	600	900	AXN DC1200
	UPEK615-110-10F	3600	500	431	11000	1000	1500	AXN DC800*2
	UPEK615-130-04F	4300	200	206	13000	400	710	AXN DC800
	UPEK615-130-06F	4300	300	309	13000	600	1070	AXN DC1200
	UPEK615-130-10F	4300	500	515	13000	1000	1780	AXN DC1200*2
	UPEK615-160-04F	5300	200	270	16000	400	900	AXN DC1200
	UPEK615-160-06F	5300	300	350	16000	600	1100	AXN DC1200
	UPEK615-160-10F	5300	500	509	16000	1000	1950	AXN DC1200*2
UPEK740F (风冷) (Air Cooled)	UPEK740-200-03F	6600	150	190	20000	300	750	AXN DC800
	UPEK740-200-06F	6600	300	380	20000	600	1250	AXN DC800*2
	UPEK740-250-03F	8300	150	239	25000	300	900	AXN DC1200
	UPEK740-250-05F	8300	250	399	25000	500	1600	AXN DC800*2
	UPEK740-300-03F	10000	150	288	30000	300	1100	AXN DC1200
	UPEK740-300-05F	10000	250	480	30000	500	1900	AXN DC1200*2
	UPEK740-350-03F	11500	150	331	35000	300	1200	AXN DC800*2
	UPEK740-350-05F	11500	250	552	35000	500	2200	AXN DC1200*2
	UPEK740-400-03F	13000	150	375	40000	300	1550	AXN DC800*2
	UPEK740-400-05F	13000	250	624	40000	500	2650	AXN DC1200*3

Servo Motor Code

UPEK450F 电机尺寸参考

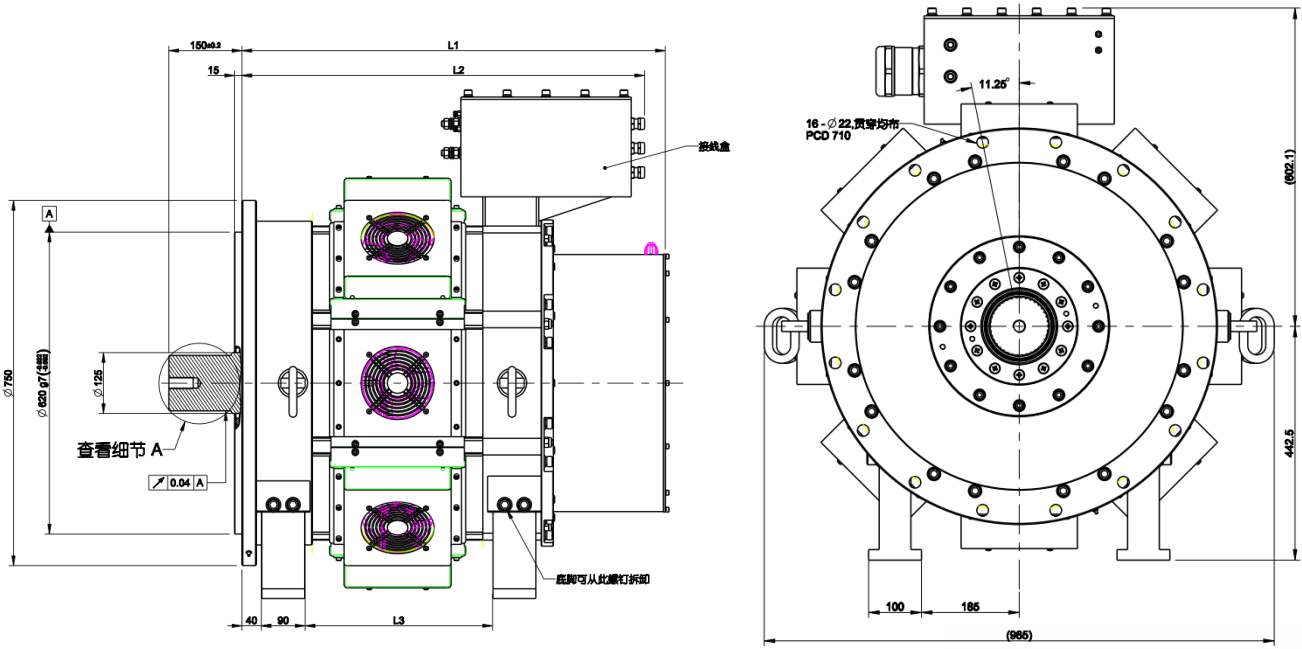


电机型号 Model	L1	L2	L3
UPEK450-070	980	825	580
UPEK450-055	880	725	480
UPEK450-040	800	645	400

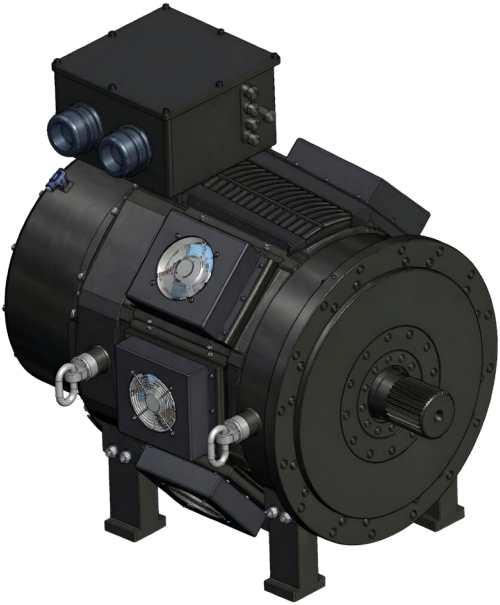


Servo Motor Code

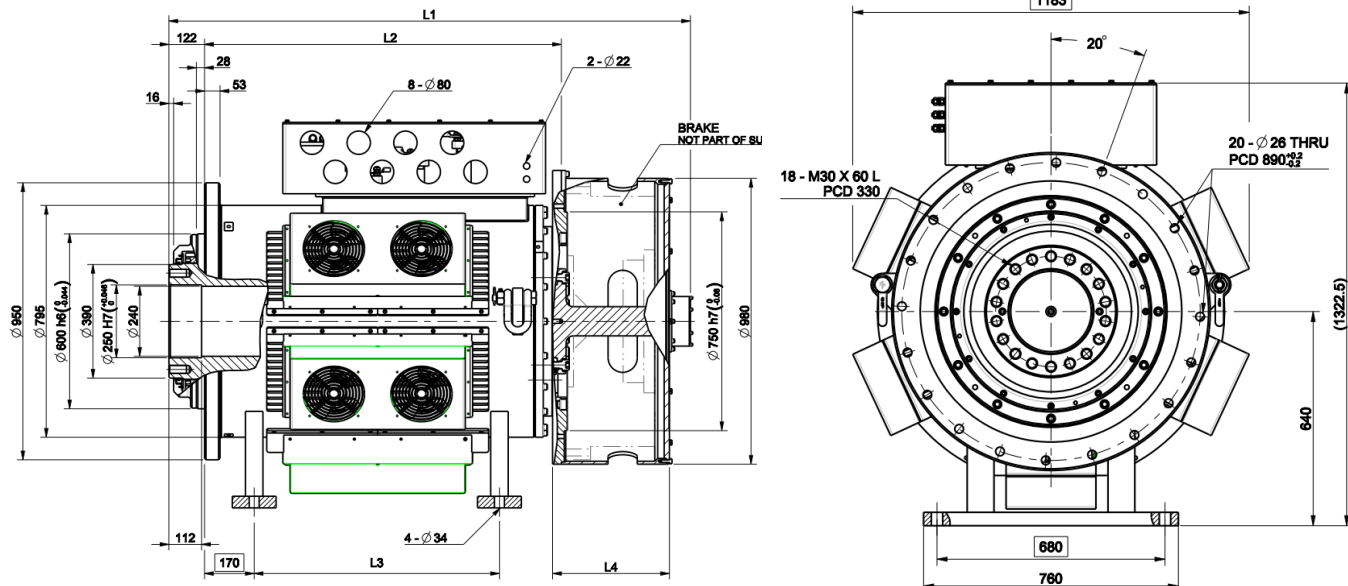
UPEK615F 电机尺寸参考



电机型号 Model	L1	L2	L3
UPEK615-160	1110	1055	597
UPEK615-130	1050	995	537
UPEK615-110	990	935	477
UPEK615-091	895	817	374



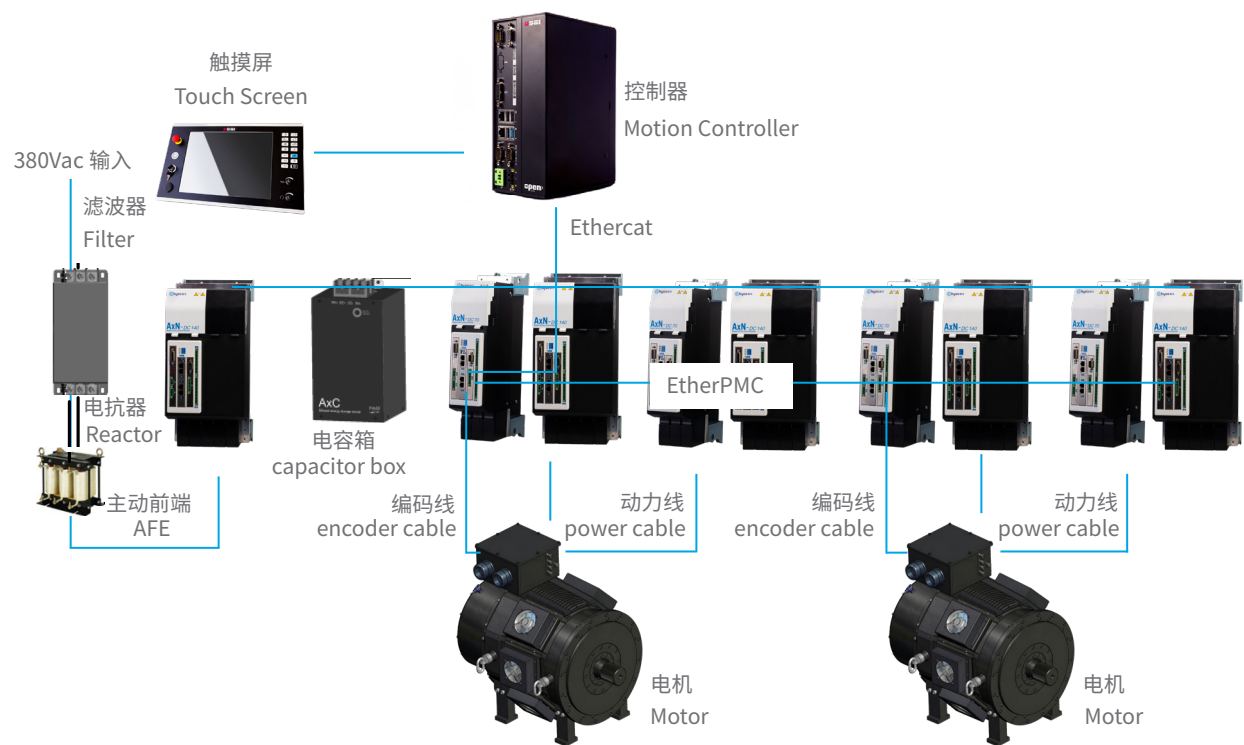
UPEK740F 电机尺寸参考



电机型号 Model	L1	L2	L3	L4
UPEK740-350	1856	1292	910	400
UPEK740-300	1856	1292	910	400
UPEK740-250	1756	1192	810	400
UPEK740-200	1756	1192	810	400



伺服压力机应用



- 主动前端：提升母线电压，提高电机弱磁特性；通过可调节动态电流限制，提升电能利用率
Active Front End: Boosts bus voltage, improves motor field weakening characteristics; through adjustable dynamic current limiting, improves power utilization efficiency
- EtherPMC 总线：125us 自研高速总线，为多绕组同步、多电机同步提供标准方案，提升同步效率，减少上位开发周期
EtherPMC Bus: 125μs self-developed high-speed bus, provides standard solution for multi-winding synchronization and multi-motor synchronization, improves synchronization efficiency, reduces upper-level development cycle
- 电容模块：储存提升的母线能量，减少装机功率；回收制动能量，提升能源利用率
Capacitor Module: Stores boosted bus energy, reduces installed power; recovers braking energy, improves energy utilization efficiency
- 运控：提供不同模式的运动曲线，通过 Ethercat 总线传输给驱动器实现相关动作
Motion Control: Provides motion curves in different modes, transmitted to drives via EtherCAT bus to achieve related actions

针对中小功率伺服压机，驱动器内置压机行业标准曲线方案，上位 PLC 或触摸屏可通过 Modbus 实现曲线点位控制，可适配不同类型 PLC，成本低、适配性广且开发方便。

For small and medium power servo presses, the drive has built-in press industry standard curve solutions. The upper-level PLC or touch screen can achieve curve point control via Modbus, compatible with different types of PLCs, low cost, wide adaptability, and easy development.

Servo Press Machine Tonnage Configuration Reference

伺服压力机吨位配置参考

吨位型号 Tonnage Model	需求参数 Required Parameters	配置 Configuration	电机和驱动器配置型号参考 Motor & Drive Configuration Model Reference	数量 Qty
200T	峰值扭矩：3300 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK450-040-10F (峰值扭矩 4000NM, 峰值转速 1000RPM, 额定电流 112A, 峰值电流 410A) (Peak Torque 4000NM,Peak Speed 1000RPM,Rated Current 112A,Peak Current 410A)	1
		驱动器 Drive	AXN 200.500F (额定电流 200A, 峰值电流 500A) (Rated Current 200A,Peak Current 500A)	1
300T	峰值扭矩：3900 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK450-040-10F (峰值扭矩 4000NM, 峰值转速 1000RPM, 额定电流 112A, 峰值电流 410A) (Peak Torque 4000NM,Peak Speed 1000RPM,Rated Current 112A,Peak Current 410A)	1
		驱动器 Drive	AXN 200.500F (额定电流 200A, 峰值电流 500A) (Rated Current 200A,Peak Current 500A)	1
400T	峰值扭矩：5500 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK450-055-10F (峰值扭矩 5500NM, 峰值转速 1000RPM, 额定电流 152A, 峰值电流 600A) (Peak Torque 5500NM,Peak Speed 1000RPM,Rated Current 152A,Peak Current 600A)	1
		驱动器 Drive	AXN 200.600F (额定电流 200A, 峰值电流 600A) (Rated Current 200A,Peak Current 600A)	1
500T	峰值扭矩：7000 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK450-070-10F (峰值扭矩 7000NM, 峰值转速 1000RPM, 额定电流 234A, 峰值电流 800A) (Peak Torque 7000NM,Peak Speed 1000RPM,Rated Current 234A,Peak Current 800A)	1
		驱动器 Drive	AXN DC 800 (额定电流 300A, 峰值电流 800A) (Rated Current 300A,Peak Current 800A)	1
600T	峰值扭矩：9100 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK615-091-12F (峰值扭矩 9100NM, 峰值转速 1150RPM, 额定电流 152A, 峰值电流 1331A) (Peak Torque 9100NM,Peak Speed 1150RPM,Rated Current 152A,Peak Current 1331A)	1
		驱动器 Drive	AXN DC 800*2 (额定电流 400A, 峰值电流 800A) (Rated Current 800A,Peak Current 1600A)	1
800T	峰值扭矩：10000 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK615-110-10F (峰值扭矩 11000NM, 峰值转速 1000RPM, 额定电流 431A, 峰值电流 1500A) (Peak Torque 11000NM,Peak Speed 1000RPM,Rated Current 431A,Peak Current 1500A)	1
		驱动器 Drive	AXN DC 800*2 (额定电流 400A, 峰值电流 800A) (Rated Current 800A,Peak Current 1600A)	1
1000T	峰值扭矩：11000 Peak Torque 峰值转速：1000 Peak Speed	电机 Motor	UPEK615-110-10F (峰值扭矩 11000NM, 峰值转速 1000RPM, 额定电流 431A, 峰值电流 1500A) (Peak Torque 11000NM,Peak Speed 1000RPM,Rated Current 431A,Peak Current 1500A)	1
		驱动器 Drive	AXN DC 800*2 (额定电流 400A, 峰值电流 800A) (Rated Current 300A,Peak Current 800A)	1

吨位型号 Tonnage Model	需求参数 Required Parameters	配置 Configuration	电机和驱动器配置型号参考 Motor & Drive Configuration Model Reference	数量 Qty
1200T	峰值扭矩：16000 Peak Torque 峰值转速：600 Peak Speed	电机 Motor	UPEK615-160-06F (峰值扭矩 16000NM, 峰值转速 600RPM, 额定电流 350A, 峰值电流 1100A) (Peak Torque 16000NM,Peak Speed 600RPM,Rated Current 350A,Peak Current 1100A)	1
		驱动器 Drive	AXN DC1200 (额定电流 400A, 峰值电流 1200A) (Rated Current 400A,Peak Current 1200A)	1
1300T	峰值扭矩：16000 Peak Torque 峰值转速：600 Peak Speed	电机 Motor	UPEK615-160-06F (峰值扭矩 16000NM, 峰值转速 600RPM, 额定电流 350A, 峰值电流 1100A) (Peak Torque 16000NM,Peak Speed 600RPM,Rated Current 350A,Peak Current 1100A)	1
		驱动器 Drive	AXN DC1200 (额定电流 400A, 峰值电流 1200A) (Rated Current 400A,Peak Current 1200A)	1
1600T	峰值扭矩：20000 Peak Torque 峰值转速：300 Peak Speed	电机 Motor	UPEK740-200-03F*2 (峰值扭矩 20000NM, 峰值转速 300RPM, 额定电流 190A, 峰值电流 650A) (Peak Torque 20000NM,Peak Speed 300RPM,Rated Current 190A,Peak Current 650A)	1
		驱动器 Drive	AXN DC 800*2 (额定电流 400A, 峰值电流 800A) (Rated Current 300A,Peak Current 800A)	1
1800T	峰值扭矩：25000 Peak Torque 峰值转速：300 Peak Speed	电机 Motor	(UPEK740-250-03F)*3 (峰值扭矩 25000NM, 峰值转速 300RPM, 额定电流 239A, 峰值电流 900A) (Peak Torque 25000NM,Peak Speed 300RPM,Rated Current 239A,Peak Current 900A)	1
		驱动器 Drive	AXN DC 1200*3 (额定电流 400A, 峰值电流 1200A) (Rated Current 400A,Peak Current 1200A)	1
2000T	峰值扭矩：30000 (Peak Torque) 峰值转速：300 (Peak Speed)	电机 Motor	UPEK740-300-03F*3 (峰值扭矩 25000NM, 峰值转速 300RPM, 额定电流 288A, 峰值电流 1100A) (Peak Torque 25000NM,Peak Speed 300RPM,Rated Current 288A,Peak Current 1100A)	1
		驱动器 Drive	AXN DC1200*3 (额定电流 400A, 峰值电流 1200A) (Rated Current 400A,Peak Current 1200A)	1
2500T	峰值扭矩：30000 Peak Torque 峰值转速：300 Peak Speed	电机 Motor	UPEK740-300-03F*4 (峰值扭矩 25000NM, 峰值转速 300RPM, 额定电流 288A, 峰值电流 1100A) (Peak Torque 25000NM,Peak Speed 300RPM,Rated Current 288A,Peak Current 1100A)	1
		驱动器 Drive	AXN DC 1200*4 (额定电流 400A, 峰值电流 1200A) (Rated Current 400A,Peak Current 1200A)	1

300T Servo Press Machine Complete Configuration Example

300T 伺服压力机全套方案示例

序号 No.	配置 Configuration	数量 Qty	产品名称 Product Name
1	吨位 Tonnage	1	300T
2	转速 (rpm) Speed	1	750/1500
3	扭矩 (Nm) Torque	1	1100/4000
4	电机型号 Motor Model	1	UPEK450-040-15F(750RPM-1500rpm)
5	预充电模块 Pre-charge Module	1	15k TW
6	滤波器 Filter	1	DL200EBK
8	驱动器 Drive	1	AXN 200.600.F
9	储能电容 Energy Storage Capacitor	4	40mf*4
10	制动电阻 Braking Resistor	1	20R,2000W
11	运动控制器 (32 输入) Motion Controller (32 inputs)	1	OSAI OPENLite,8G,
12	触摸屏 Touch Screen	1	10 寸 /12 寸 /15 寸 (10-inch/12-inc /15-inc)
13	总线耦合器 Bus Coupler	1	耦合器 -Ethercat 接口 (CD) Coupler - EtherCAT Interface (CD)
14	4AI(电压) 4AI (Voltage)	4	4 通道模拟量输入模块, -10V~+10V 4-channel analog input module, -10V~+10V
15	4AI(电流) 4AI (Current)	4	4 通道模拟量输入电流型 0~20mA/4~20mA 4-channel analog input current type 0~20mA/4~20mA
16	4*32 DI PNP	4	IO 模块 -32 通道数字输入 PNP(CD) IO Module - 32-channel digital input PNP (CD)
17	8*4 路继电器输出 8*4 Relay Outputs	8	4 通道继电器输出模块 4-channel relay output module
18	16 DO PNP	1	16 通道数字量输出模块, PNP 16-channel digital output module, PNP
19	单通道编码器计数模块 Single-channel Encoder Counter Module	1	单通道编码器计数模块, 24V Single-channel encoder counter module, 24V
20	编码器线 Encoder Cable	1	CN-X-A28-**-GTV
21	ethercat 线 EtherCAT Cable	2	网线 Ethernet cable