

AxN-DC

Servo Common DC Bus Drive

AxN-DC系列共直流母线驱动器





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和丰创业投资有限公司等战略投资人参股，公司致力于以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，经过多年的品牌沉淀，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. was founded in 2001, which is a private enterprise holding group company, invested by Advanced Manufacturing Fund and Ningbo Hefeng Venture Capital Co., Ltd. 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 became a collectivized & innovative high-tech enterprise, which collects together research and development (R&D), production and sale, has a numbers of domestic and overseas subsidiaries.

R&D Team 研发团队

在智能制造全球化的趋势中，菲仕逐步落地国际化的战略布局，在欧洲成立了研发中心，与国内外专业科研机构、专家合作，进行定期交流和互动，以保持公司持续站立在伺服系统科技创新的最前沿，共同推进产业发展。经过多年的沉淀，顶尖人才的积累，菲仕在国内拥有省级工程技术中心、省级高新技术企业研究开发中心，并入选了国家工信部第一批专精特新“小巨人”企业！

3 个
研发中心

4 个
生产基地

350 +
研发团队

360 +
授权专利

In the globalization tendency of intelligent manufacture, Physis implements the strategic layout of the group internationalization gradually, builds the R&D center in Europe, communicate and interact regularly with the world-class scientific research institution & industry experts, which makes Physis hold on the lead of the servo system technology innovation and promote industrial development together! After years of development, accumulation of talents, Physis has provincial engineering & technology center and more than 350 people of R&D team. Until now, Physis has more than 360 patents.

Product Introduction

产品介绍

AxN-DC 系列共直流母线多轴驱动器 AxN-DC Series Common DC Bus Drive

统一的整流单元及多组逆变单元构成共直流母线驱动系统
适用于机床、包印、全电动注塑机等多轴应用场合

A unified rectifier unit and multiple inverter units form the common DC bus driving system
Suitable for machine tool, package and printing, EIMM and other multi-axis applications

功能特点 Features

整流单元：0~500Vac 80kW，支持整流模块并联
逆变单元：0~800Vdc 峰值功率 22~400kW
总线接口：EtherCAT、CANopen、EthPMC
编码器支持：Endat、Hiperface、Sincos、Hall、Resolver、Nikon、Tamagawa
散热方式：风冷、水冷、油冷
安装方式：柜内安装、穿墙安装、底板安装

Rectifier Unit: 0~500Vac 80kW, support parallel connection of rectifier modules
Inverter Unit: 0~800Vdc Peak Power 22~400kW
Bus Interface: EtherCAT, CANopen, EthPMC
Encoder Support: Endat, Hiperface, Sincos, Hall, Resolver, Nikon, Tamagawa
Cooling Methods: Fan-cooling, water-cooling, and oil-cooling
Installation Method: cabinet installation, wall-through installation, baseplate installation








符合标准 Standards Compliant

地区 Region	认证名称 Certification	指令名称 Directive	符合标准 Standard
欧洲 Europe	CE	2014/30/EU (EMC 指令) 2014/30/EU (EMC directive)	EN 61800-3: 2004
		2014/35/EU (低电压指令) 2014/35/EU (LVD directive)	EN 61800-5-1: 2007
美国 USA	UL	-	UL 61800-5-1: 2007

具有 STO 功能，符合 EN61800-5-2: 2016 标准
STO function, compliant to EN61800-5-2:2016 standard

Product List

产品一览

	外观 Product Appearance	型号 Model	输入电压 Input Voltage	风冷型额定功率 Rate Power of Fan Cooling Type	尺寸 (长 * 高 * 宽) Size(L * H * W)
整流单元 Rectifier Unit		AxN-PS 80	0-500Vac	80KW	259×450×196
		AxN-DC44	0-800Vdc	11KW	259×450×98
逆变单元 Inverter Unit		AxN-DC70	0-800Vdc	17.5KW	
		AxN-DC100	0-800Vdc	25KW	259×450×196
		AxN-DC140	0-800Vdc	35KW	
		AxN-DC200	0-800Vdc	50KW	259×450×294
		AxN-DC300	0-800Vdc	75KW	
		AxN-DC400	0-800Vdc	100KW	
		AxN-DC800	0-800Vdc	200KW	259×450×490

Product Advantages

产品优势

内置 PLC (IEC6113103 标准语言)

Built-in PLC (IEC6113103 standard language)

可编程：可用 5 种 PLC 编程语言进行二次开发，符合 IEC61131-3 标准。
一体化：PLC 集成在控制卡上，省去外部的 PLC 控制器，节省空间和成本。
速度快：驱动器由内部 PLC 直接控制，执行速度更快。

Programmable: Five kinds of PLC programming languages can be used for secondary development, compliant to IEC61131-3 standard.
Integration: PLC is integrated in control card, eliminating the need for an external PLC controller, saving space and cost.
Faster Speed: Drive is directly controlled by the internal PLC and executes faster.

自主开发的 EthPMC 内部总线

Self-developed EthPMC Internal Bus

基于以太网技术：具有硬实时性，拓扑灵活等特点。
支持交互通信：在每个同步周期内主站与从站，从站间实现直接的数据通信。
通信调整稳定：循环周期 125μs，传输延时低于 2μs，同步时钟抖动小于 100ns。

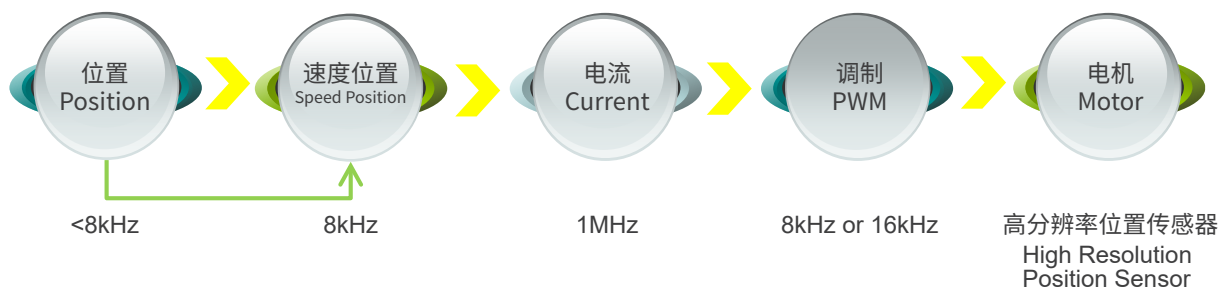
Based on Ethernet Technology: Hard real-time, flexible topology.
Support Interactive Communication: Realize direct data communication between master station, slave station, slave station and slave station in each synchronization cycle.
Stable Communication Regulation : Cycle time is 125μs, transmission delay is less than 2μs, and synchronous clock jitter is less than 100ns.

高精度控制环

High-precision Control Loop

电流环采样循环时间：1μs
速度环采样循环时间：125μs
位置环采样循环时间：125μs（采用新的高性能电压控制算法，可达到最高 10 倍弱磁）

Current Loop Sampling Cycle Time: 1μs
Speed Loop Sampling Cycle Time: 125μs
Position Loop Sampling Cycle Time: 125μs (adopts new high-performance voltage control algorithm, up to 10 times deep field weakening)



Application 应用领域



数控机床

伺服压机
激光切割机
伺服转塔冲床
柔性加工单元
多轴联动加工中心

CNC Machine Tool

Servo press
Laser cutting machine
Servo turret punch
Flexible processing unit
Multi-axis linkage machining center



注塑机

全电动注塑机
电液混合注塑机

Injection Molding Machine

EIMM
Electro-hydraulic hybrid



多线切割机

磁钢切割
单晶硅切割
蓝宝石切割

Multi-wire Cutting Machine

Magnetic steel cutting
Monocrystalline silicon cutting
Sapphire cutting

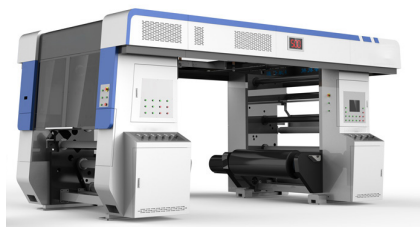


印刷机械

柔版印刷
凹版印刷
无溶剂复合机

Printing Machine

Flexography
Gravure printing
Solvent-free complex machine



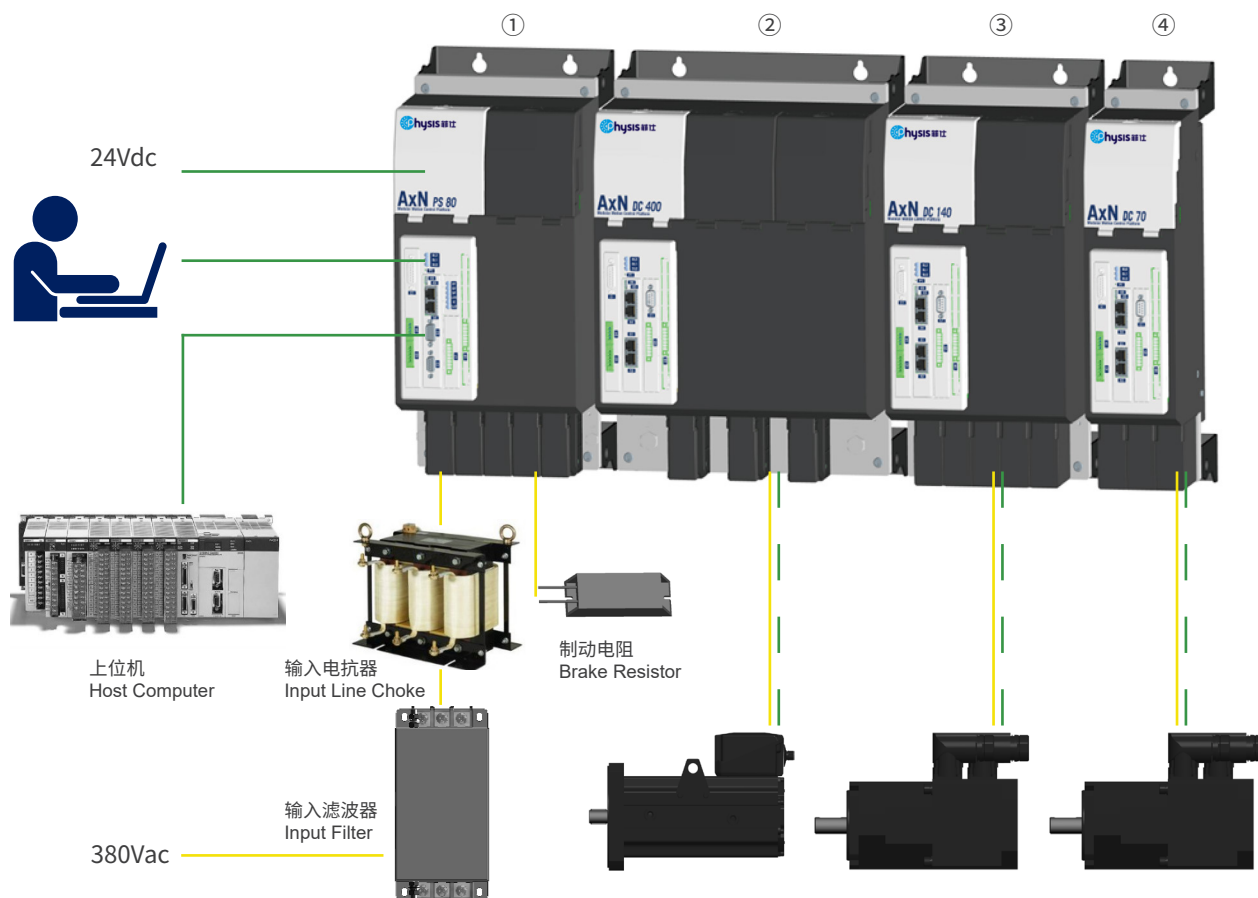
包装机械

瓦楞纸包装线

Packaging Machine

Corrugated paper packaging line

Application Advantages 应用优势



- ① 整流单元: AxN-PS80 Rectifier Unit: AxN-PS80
- ② 逆变单元: AxN-DC400 Inverter Unit: AxN-DC400
- ③ 逆变单元: AxN-DC140 Inverter Unit: AxN-DC140
- ④ 逆变单元: AxN-DC70 Inverter Unit: AxN-DC70

节能

Energy Saving

多轴系统能量互用, 提高效率

Multi-axis system energy interoperability, improve efficiency

节省空间

Save Space

体积更小, 更紧凑, 采用分布式直流母线连接方式

Smaller size, more compact, distributed DC bus connection

节省器件

Save Devices

仅需一组电阻、滤波器、输入电缆

Only need one set of resistors, filters, input cables

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