NATUS
INDUSTRIAL SOLUTION SYSTEMS

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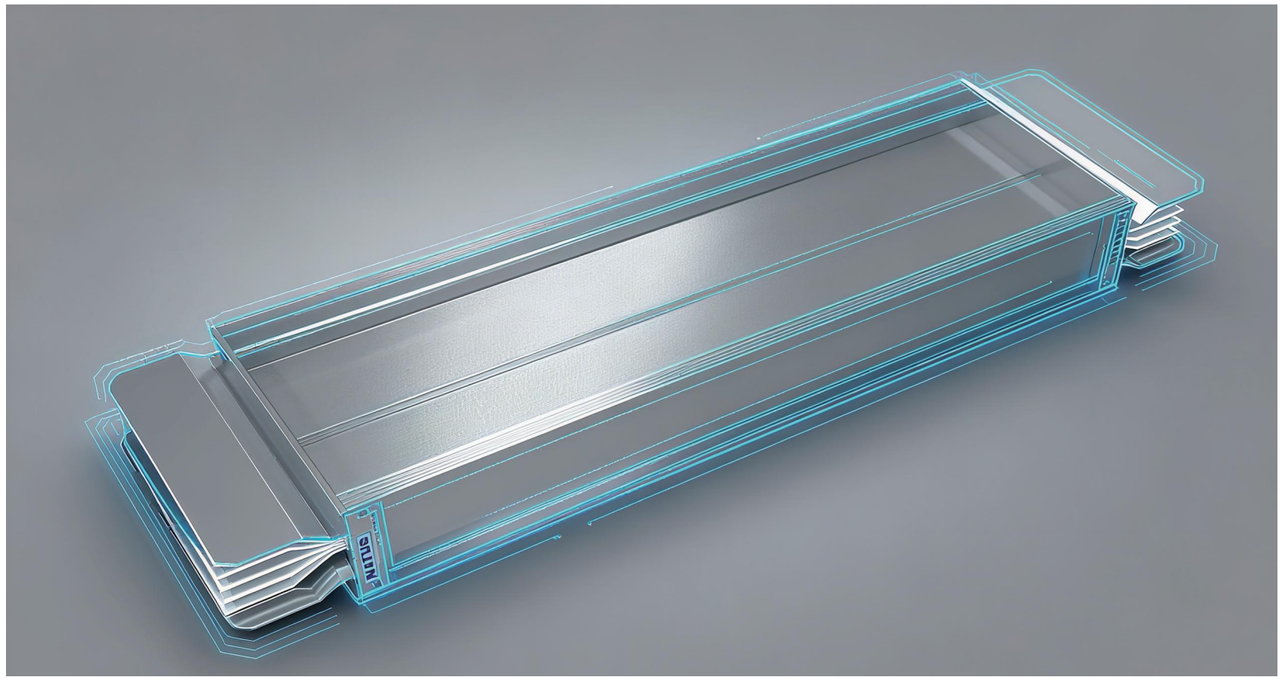
NATUS
INDUSTRIAL SOLUTION SYSTEMS

P-LINE 母线槽

P-LINE Busduct System



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NATUS
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集团业务 Group Business

集团专注于中低压电力行业的系统集成、EPC工程总包服务及核心产品的研发、生产与销售。在电力设备领域，我们深耕智能电气成套产品、高端电力元器件、先进电能质量治理产品、智能控制仪表与控制系统。基于人工智能与大数据分析的技术积累，我们提供变电站与输电线路的气象灾害预防设备与安全运行综合解决方案。在新技术领域，我们聚焦小区域低空气象高精度预测技术，为低空经济发展提供综合性的产品与服务。

The Group specializes in system integration, EPCturnkey services, and the R&D, production, and salesof core products within the medium and low-voltagepower industry. In the field of power equipment, wehave deep expertise in intelligent electrical switchgearsystem,high-end power components, advanced powerquality management products, intelligent control instruments, and control systems. Leveraging accumu-lated expertise in artificial intelligence and big dataanalytics, we provide comprehensive solutions for meteorological disaster prevention equipment and thesafe operation of substations and transmission lines.In the domain of new technologies, we focus onsmall-area, low-altitude meteorological high-precision prediction technology, offering integrated productsand services to support the development of thelow-altitude economy.

集团理念 Group Vision

纳图电气集团源自德国，立足中国，服务全球。自1956年成立以来，集团以德国技术为基础，深度融合中国智慧与全球视野，依托强大的中国研发与制造团队，精准响应全球市场需求，为各行业客户提供智慧电力的专业解决方案。集团坚持以客户为中心，致力于创新产品、可靠技术与精益制造，携手全球用户共同构建更智能、高效、可持续的电力能源未来。

Natus Electric Group originates from Germany,is firmly rooted in China, and serves the global market. Since its establishment in 1956, theGroup has built upon German technologydeeply integrating Chinese expertise and aglobal perspective.Supported by a robust Chinese R&D and manufacturing team, we precisely respond to global market demands,delivering professional intelligent power solutions for clients across various industries.Adhering to a customer-centric approach, the Group is committed to innovative products,reliable technology, and lean manufacturing.working hand-in-hand with global users tobuild a smarter, more efficient, and sustainable future for the power and energy sector.

纳图电气集团自主开发的低压母线槽产品系列，涵盖密集型母线槽、耐火母线槽及浇筑式母线槽等多种类型，可满足6400A以下配电系统的多样化需求。该系列产品性能参数完全满足国标型式试验要求，凭借先进的自动化生产线，实现了从参数化驱动、自动布线设计、MES系统管理到数字化加工成型的全流程一体化制造，真正达成“一键从设计到产品下线”的高效生产。

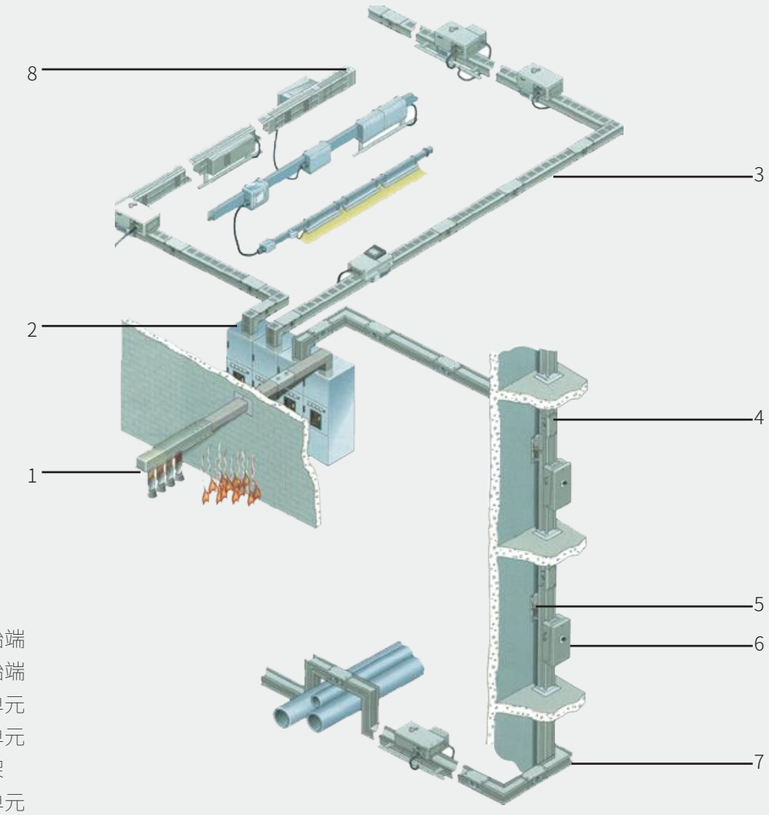
P-LINE母线槽采用3mm厚铝合金外壳与独创卡槽设计，结构简洁美观，安装便捷，在保障优异散热性能的同时，兼具高机械强度和运行可靠性。产品全面符合GB/T 7251及IEC 61439标准，其中密集型母线槽防护等级高达IP66，浇筑型更达到IP68，能够适应多种复杂环境，确保系统长期稳定、安全运行。

纳图母线槽产品种类丰富，支持灵活定制，可广泛应用于各类配电场景，为用户提供高效、安全、可靠的输电解决方案。

Natus Electric Group's independently developed low-voltage busduct product series encompasses multiple types including compact busduct, fire-resistant busduct, and cast-in-place busduct, meeting diverse requirements for power distribution systems rated below 6400A. The performance parameters of this series fully comply with national standard type test requirements. Leveraging advanced automated production lines, it achieves fully integrated manufacturing from parameter-driven design, automated wiring layout, MES system management to digital machining and forming, truly realizing efficient “one-click production from design to final product.”

Featuring a 3mm thick aluminum alloy housing and an innovative snap-in channel design, P-LINE busducts offer a sleek, minimalist structure with easy installation. This design ensures excellent heat dissipation while delivering high mechanical strength and operational reliability. The product fully complies with GB/T 7251 and IEC 61439 standards. Its compact busduct system achieves an IP66 protection rating, while the cast-in-place type reaches IP68, enabling adaptation to diverse complex environments and ensuring long-term stable, safe system operation.

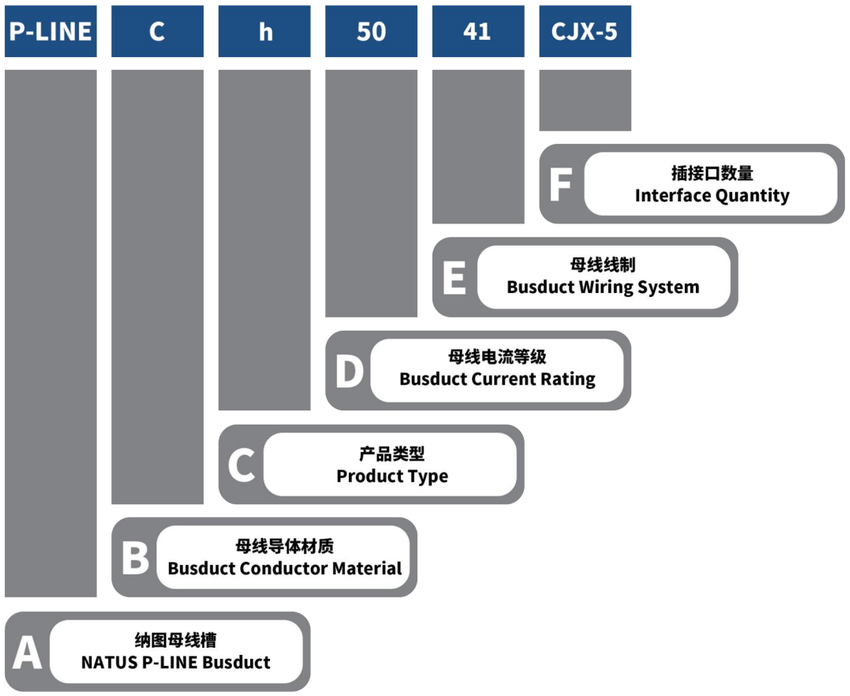
Natus Busduct offers a comprehensive product range with flexible customization options, suitable for various power distribution scenarios. It provides users with efficient, safe, and reliable power transmission solutions.



说明
1 - 变压器始端
2 - 配电柜始端
3 - 直线段单元
4 - 连接器单元
5 - 安装支架
6 - 插接箱单元
7 - 转向单元
8 - 母线终端

Description
1 - Transformer Flange End
2 - Power Distribution Tap-off Box
3 - Straight Section Unit
4 - Connector Unit
5 - Installation Bracket
6 - Plug-in Box Unit
7 - Elbow Unit
8 - End Feed Unit

母线槽型号说明
BUSDUCT MODEL SPECIFICATIONS



A 纳图母线槽 / Natus P-LINE Busduct

B 母线槽导体材质 / Busduct Conductor Material

代号/Code	导体材质/Conductor Material
/	T2铜/T2 Copper
C	6063铝/6063 Aluminum Alloy
L	铜铝混合/ copper-aluminum Hybrid

C 产品类型 / Product Type

代号/Code	产品类型/Product Type
/	密集型/Intensive Type
h	耐火型/Fire-Resistant Type
j	浇筑型/Cast Type
g	共箱型/Common Tank Type

D 母线电流等级代号 / Current Rating Code of Busduct

代号/Code	04	05	06	08
电流等级/Current Rating	400A	500A	630A	800A

代号/Code	10	12	16
电流等级/Current Rating	1000A	1250A	1600A

代号/Code	20	25	31	32
电流等级/Current Rating	2000A	2500A	3150A	3200A

代号/Code	40	50	63	64
电流等级/Current Rating	4000A	5000A	6300A	6400A

E 母线线制代号 / Busduct Wiring System Code

母线线制/Busduct Wiring System	组成形式/Composition Form	代号
三相三线制 Three-phase three-wire system	L1+ L2+ L3 , PE	30
三相四线制，50%中性线 Three-phase four-wire system, 50% neutral conductor	L1+ L2+ L3+ 50%N	40
三相四线制，100%中性线 Three-phase four-wire system, 100% neutral conductor	L1+ L2+ L3+ N	41
三相五线制，50%中性线，50%接地线 Three-phase five-wire system, 50% neutral conductor, 50% protective earth conductor	L1+ L2+ L3+ 50%N +50%PE	50
三相五线制，100%中性线，50%接地线 Three-phase five-wire system, 100% neutral conductor, 50% protective earth conductor	L1+ L2+ L3+ N +50%PE	51
三相五线制，100%中性线，外壳作接地线 Three-phase five-wire system, 100% neutral conductor, the enclosure serves as the protective earth conductor	L1+ L2+ L3+ N +外壳PE L1+ L2+ L3+ N +EnclosurePE	52

F CJX-5 - 母线插接口数量代号 / Busduct Plug-in Interface Quantity Code

额定绝缘水平 Rated Insulation Level	额定绝缘电压 Ui Rated Insulation Voltage	1000V
	额定工作电压 Ue Rated Working Voltage	400V/690V/800V/1000V
	额定短时耐受电流 Icw Rated Short-Time Withstand Current	注1 Note 1
	额定峰值耐受电流 Ipk Rated Peak Withstand Current	注1 Note 1
额定频率 Rated Frequency		50/ 60Hz
额定电流 Rated Current	铜导体 Copper Conductor	400 -6400 A
	铝导体 Aluminum Conductor	400 -6300 A
环境温度（M in ./ Max./ 24小时平均温） Ambient Temperature (Min. / Max. / 24-hour Average Temperature)		-25℃/ + 45℃/ 日均35℃ -25℃/ + 45℃/ 35℃ daily average
防护等级 IP Code		IP42、IP54、IP66
外壳材料 Enclosure Material		铝镁合金 Aluminum-Magnesium Alloy
外壳颜色（可根据客户需求另行选择） Enclosure Color (can be selected separately according to customer requirements)		RAL7032/ RAL7035
连接器力矩 Connector Torque		70N.m
污染等级 Pollution Degree		II 级 / Level II

注1：

- 不同的电流等级，对应不同的短路耐受电流值；
- 具体参数可详见下一页技术参数表 。

Note 1:

- Different current ratings correspond to different short-circuit withstand current values;
- For specific parameters, please refer to the technical parameter table on the next page for details.

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灵活可靠，兼容性强

电流容量大：母线槽导体电流从400A-6400A；

防火阻燃：母线槽内部结构紧凑,可有效防止烟囱效应；

防护等级高：母线槽防护等级可达IP66；

系统配套性强：母线槽可实现与各类型号配电柜及变压器连接；

耐火型母线槽：有防止火焰蔓延特性；有建筑结构中防火特性，建筑结构中防火的耐火时间180min；

安全可靠，经济节能

母线槽系统压降低，短时耐受能力强；

配电系统设备增减自如

母线槽系统拆卸及维护方便，可根据现场设备负载的情况及时进行调节，灵活性强；

设计生产周期短

母线槽系统设计生产周期短，满足客户对于较短供货周期的需求；

安装方便、快捷

母线槽较传统母线安装速度快一倍，且拆卸方便，便于后期维护；

使用寿命长

母线槽系统采用精细化的设计与制造，正常使用寿命超过30年；

应用范围广泛

母线槽可广泛应用于楼宇建筑、工业厂房、数据中心、石油石化等众多行业；

完善的技术与服务团队

纳图公司拥有一支专业的研发及服务团队，可以保证产品的品质与后续的服务；

FLEXIBLE AND RELIABLE, WITH STRONG COMPATIBILITY

High current capacity: Busduct conductor currents range from 400A to 6400A;
Fireproof and flame-retardant: The busduct's compact internal structure effectively prevents the chimney effect;
High protection rating: The busduct enclosure achieves an IP66 protection rating;
High system compatibility: Busduct can be connected to various types of switchgear and transformers;
Fire-resistant busduct: Flame-retardant properties, Fire-resistant properties in building structures, Fire resistance rating of 180 minutes for fire protection in building structures;

SAFE AND RELIABLE, ECONOMICAL AND ENERGY-EFFICIENT

Low pressure-drop in busduct systems with strong short-term withstand capability;

产品特点 Product Features

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FLEXIBLE ADDITION OR REMOVAL OF EQUIPMENT IN THE POWER DISTRIBUTION SYSTEM

Busduct systems are easy to disassemble and maintain, allowing for timely adjustments based on the load conditions of on-site equipment, offering high flexibility;

SHORT DESIGN AND PRODUCTION CYCLE

The busway system features a short design and production cycle, meeting customer demands for quick delivery;

EASY AND QUICK INSTALLATION

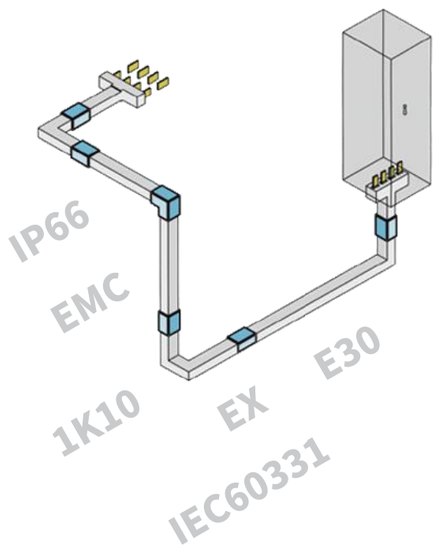
Busduct can be installed twice as fast as traditional bus systems and are easy to dismantle, facilitating future maintenance;

LONG SERVICE LIFE

The busway system features meticulous design and manufacturing, with a normal service life exceeding 30 years;

WIDE RANGE OF APPLICATIONS

Busduct can be widely applied in numerous industries, including building construction, industrial plants, data centers, and the petroleum and petrochemical sectors;



A COMPREHENSIVE TECHNICAL AND SERVICE TEAM

Natus Electric Group possesses a professional R&D and service team that ensures product quality and subsequent support;

NATUS INDUSTRIAL SOLUTION SYSTEMS

铜导体母线槽主要技术参数 / Main Technical Parameters of Copper Conductor Busduct

电流 Current	短时耐受电流 Short-Time Withstand Current	峰值耐受电流 Peak Withstand Current	电阻/ 米 Resistance/m	电抗/ 米 Reactance/m	阻抗/ 米 Impedance/m	压降/ 米 Voltage Drop/m	重量/ 米（Kg） Weight/m(Kg)	
(A)	I cw（kA）	Ipk（kA）	(mΩ)	(mΩ)	(mΩ)	(V)	四线制 Four-Wire System	五线制 Five-Wire System
400	50	63	0.11	0.04	0.11	0.08	11.8	12.47
500	50	63	0.1	0.04	0.1	0.09	12.7	13.48
630	50	63	0.09	0.04	0.1	0.1	13.8	14.69
800	50	63	0.07	0.03	0.08	0.1	15.7	16.81
1000	50	63	0.06	0.03	0.07	0.11	18.8	20.24
1250	50	63	0.05	0.02	0.05	0.11	22.9	24.79
1600	80	220	0.03	0.02	0.04	0.1	28.9	31.46
2000	80	220	0.02	0.02	0.03	0.1	36.2	39.54
2500	80	220	0.02	0.01	0.02	0.1	46.4	50.85
3150	80	220	0.02	0.01	0.02	0.1	56.1	61.44
3200	80	220	0.02	0.01	0.02	0.1	58.4	63.74
4000	120	264	0.01	0.01	0.01	0.09	70.7	77.4
5000	120	264	0.01	0.01	0.01	0.08	91.1	100
6300	120	264	0.01	0.01	0.01	0.07	111.8	125.15
6400	120	264	0.01	0.01	0.01	0.07	116.4	129.75

技术参数 Technical Specifications

NATUS INDUSTRIAL SOLUTION SYSTEMS

铝导体母线槽主要技术参数 / Main Technical Parameters of Aluminum Conductor Busduct

电流 Current	短时耐受电流 Short-Time Withstand Current	峰值耐受电流 Peak Withstand Current	电阻/ 米 Resistance/m	电抗/ 米 Reactance/m	阻抗/ 米 Impedance/ m	压降/ 米 Voltage Drop/m	重量/ 米（Kg） Weight/m(Kg)	
(A)	I cw（kA）	Ipk（kA）	(mΩ)	(mΩ)	(mΩ)	(V)	四线制 Four-Wire System	五线制 Five-Wire System
400	30	63	0.11	0.04	0.11	0.08	7.2	7.56
630	30	63	0.09	0.04	0.1	0.11	9.03	9.6
800	30	63	0.07	0.03	0.08	0.11	10.51	11.24
1000	30	63	0.06	0.03	0.07	0.11	13.2	14.13
1250	30	63	0.05	0.02	0.05	0.11	14.22	15.35
1600	80	176	0.03	0.02	0.04	0.11	17.2	18.66
2000	80	176	0.02	0.02	0.03	0.1	20.2	21.98
2500	80	176	0.02	0.01	0.02	0.1	27.8	30.07
3200	80	176	0.02	0.01	0.02	0.1	33.9	36.82
4000	80	176	0.01	0.01	0.01	0.09	39.82	43.39
5000	120	264	0.01	0.01	0.01	0.07	40.5	45.56
6300	120	264	0.01	0.01	0.01	0.07	45.36	51.03

母线槽外壳
BUSDUCT ENCLOSURE

- P-LINE母线槽选用优质的航空航天材料铝镁合金作为外壳，该材料为3mm无磁性环保材料，具有质量轻、强度高等特点；
- 母线槽采用“工字型”结构，为了保证其较高的结构强度及精度，外壳（盖板和侧板）均采用一次性成型工艺；
- 母线槽盖板和侧板整合处采用曲线铆合结构设计，使得整合更为紧密，提高防护等级至IP66；
- 母线槽侧板也设计有波浪形加强筋，提高母线槽整体抗挠度及耐冲击能力，增加散热面积，使得母线槽运行更为稳定；
- 母线槽外壳表面进行阳极氧化处理或静电粉末喷涂处理，可长期应用于沿海地区等空气湿度较大、盐分高、污染等级高的环境；
- 母线槽外壳本身保证良好的接地连续性及接地容量，外壳可作为接地线使用；

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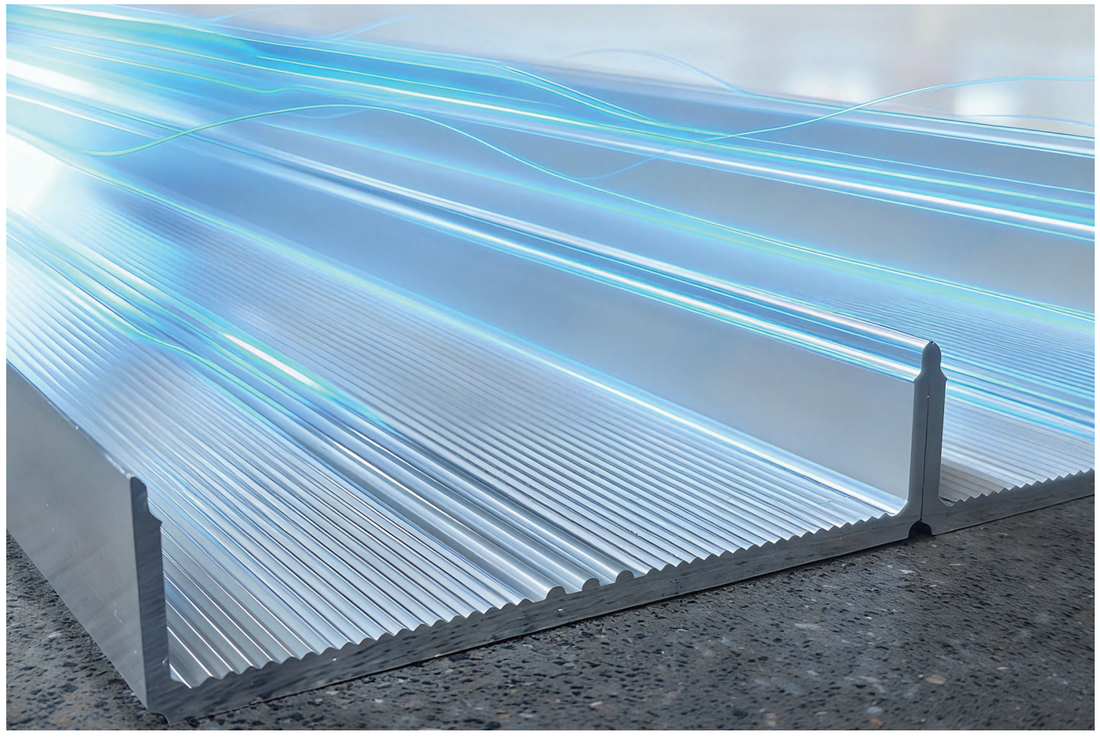
INDUSTRIAL SOLUTION SYSTEMS

BUSDUCT ENCLOSURE

- P-LINE busducts utilize premium aerospace-grade aluminum-magnesium alloy for their enclosures. This 3mm non-magnetic, environmentally friendly material offers exceptional characteristics including lightweight construction and high strength;
- The busway adopts an "工“ structure. To ensure high structural strength and precision, the enclosure (cover plate and side plates) is manufactured using a one-time molding process;
- The busduct cover plate and side panel integration employs a curved riveted structure design, ensuring tighter integration and enhancing the protection rating to IP66;
- The busduct side panels are also designed with corrugated stiffeners to enhance overall deflection resistance and impact resilience, increase heat dissipation surface area, and ensure more stable busway operation;
- The busduct enclosure surface undergoes anodizing or electrostatic powder coating, enabling long-term use in coastal areas and other environments characterized by high air humidity, high salinity, and high pollution levels;
- The busduct enclosure itself ensures good grounding continuity and grounding capacity, and the enclosure can be used as a grounding conductor;



技术参数 Technical Specifications

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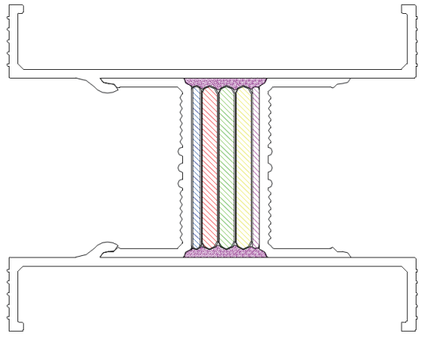
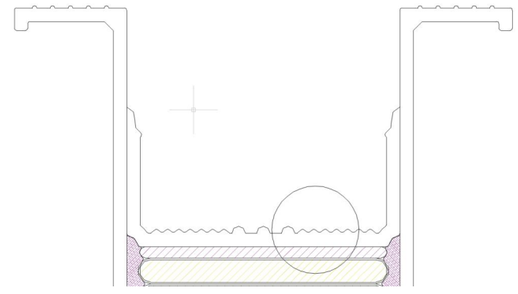
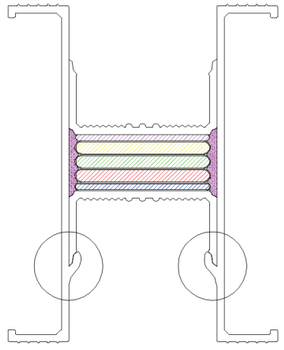
INDUSTRIAL SOLUTION SYSTEMS



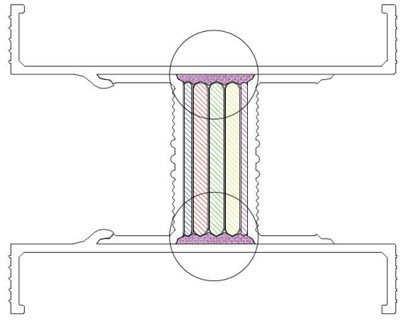
母线槽外壳采用“工”字型 设计，结构强度高，运行更稳定;
The busduct enclosure features an "工" design, offering high structural strength and enhanced operational stability;



母线侧板采用波浪形设计，增加散热面积，可减少产品的温升;
The busduct side plates adopt a wavy design, which increases the heat dissipation area and can reduce the product's temperature rise;



母线槽盖板与侧板铆合工艺，可提高防护等级;
The riveting process between the busduct cover plate and side plate can improve the protection level;



母线槽用以母线吻合圆弧的硅胶密封垫，完好密封母线，进一步提高母线的防护等级;
The busduct adopts a silicone gasket that conforms to the arc of the busduct, which provides a complete seal for the busduct and further enhances the busduct's protection level;

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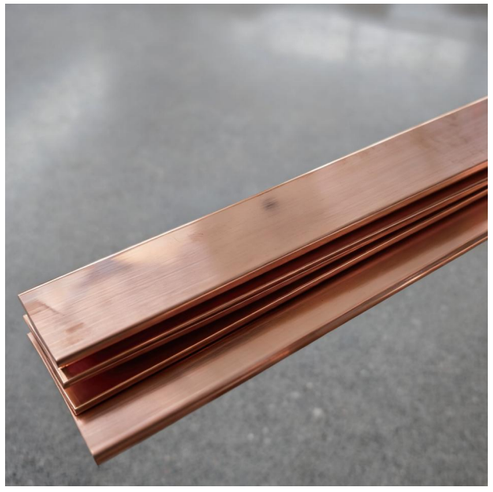
导体配置
CONDUCTOR CONFIGURATION



铜排

- 优质TMY-2电 解铜;
- 符合GB/T 5585 . 1标准要求;
- 纯度：不低于99 .95%;
- 电阻率低于0 .01777 Ω.mm2/ m ;
- 表面处理：镀锡或镀银 。

铝排

- 优质6063铝排;
- 符合GB5585 . 1标准要求;
- 电阻率低于0 .029 Ω.mm2/ m ;
- 表面处理：镀铜后再镀锡或镀银 。

绝缘材料

- 采用优质聚酯薄膜;
- 绝缘耐热等级B级，耐热温度可达130°C;
- 执行标准：GB/T 13542 .4;
- 不含卤化物;
- 高温时无有毒气体产生;
- 单层耐压可达10000V;
- 采用双层包裹，相间绝缘层可达6层 。

COPPER BUSBAR

- High-quality TMY-2 electrolytic copper;
- Complies with the requirements of the GB/T 5585.1 standard;
- Purity: not less than 99.95%;
- Resistivity: less than 0.01777 Ω·mm²/m;
- Surface Treatment: tin plating or silver plating.

ALUMINUM BUSBAR

- High-quality 6063 aluminum busbar;
- Complies with the requirements of GB 5585.1 Standard (National Standard of China);
- Resistivity: less than 0.029 Ω·mm²/m;
- Surface treatment: Copper plating followed by tin plating or silver plating;

INSULATING MATERIAL

- Adopts high-quality polyester film.;
- Insulation and heat resistance Class B, with heat resistance temperature up to 130°C;
- Applicable Standard: GB/T 13542.4 (GB/T: China National Recommended Standard);
- Halide-free;
- No toxic gas emission at high temperatures;
- Single-layer voltage withstand capacity up to 10000V;
- Adopting double-layer wrapping, with inter-phase insulating layers up to 6 layers.

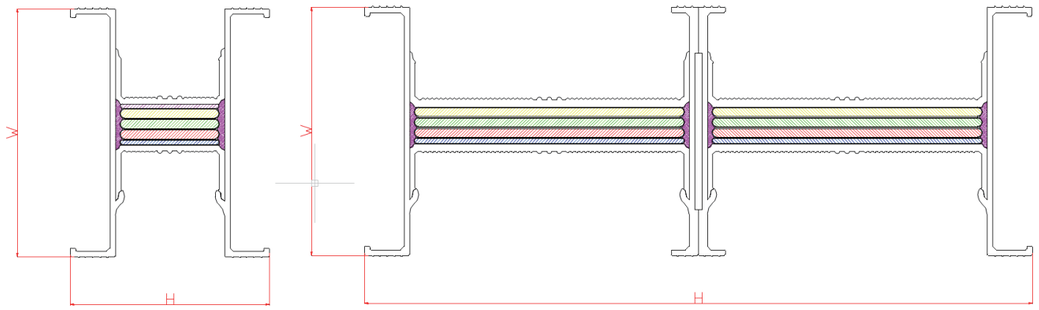
NATUS
INDUSTRIAL SOLUTION SYSTEMS

直线段单元
STRAIGHT SECTION UNIT

纳图母线槽采用典型的“三明治”结构，完全封闭，最高防护等级可达IP66，可在恶劣环境条件下使用。系统选用整个外壳作接地路径，为地线短路提供最短的路径。当发生高容量的接地故障时，可有效的接地和保护整个系统。母线槽可以垂直安装也可以水平安装。插接式母线可双面设置插接口，灵活多变 。

Natus busduct adopts a typical "sandwich" structure and is fully enclosed, with a maximum protection class of IP66, enabling it to be used in harsh environmental conditions. The system uses the entire enclosure as the grounding path, providing the shortest path for ground faults. When a high-capacity ground fault occurs, it can effectively ground and protect the entire system. The busway can be installed both vertically and horizontally. Plug-in busbars can be equipped with plug-in ports on both sides, making them flexible and versatile.

导体配置 Conductor Configuration	直线段标准长度 Standard Length of Straight Section	直线段最小长度 Minimum Length of Straight Section	直线段最大长度 Maximum Length of Straight Section	直线段可选长度 Optional Length of Straight Section
铜导体 Copper Conductors	1m , 2m , 3m	0.3 m	6m	0.3 m - 6m
铝导体 Aluminum Conductors	1m , 2m , 3m , 4m	0.3 m	6m	0.3 m - 6m



铜母线 Copper Busbar			铝母线 Aluminum Busbar		
电流（A） Current	排数 Number of Rows	高度（H ,mm ） Height	电流（A） Current	排数 Number of Rows	高度（H ,mm ） Height
400	单排 Single Row	96	400	单排 Single Row	101
500	单排 Single Row	101	630	单排 Single Row	111
630	单排 Single Row	111	800	单排 Single Row	126
800	单排 Single Row	126	1000	单排 Single Row	141
1000	单排 Single Row	141	1250	单排 Single Row	171
1250	单排 Single Row	171	1600	单排 Single Row	206
1600	单排 Single Row	206	2000	单排 Single Row	256
2000	单排 Single Row	256	2500	双排 Double Row	306
2500	单排 Single Row	306	3200	双排 Double Row	356
3200	单排 Single Row	356	4000	双排 Double Row	472
4000	双排 Double Row	372	5000	双排 Double Row	572
5000	双排 Double Row	472	6300	三排 Triple Row	472
6300	双排 Double Row	572			
6400	双排 Double Row	672			

母线槽直线段外形尺寸 — 宽 度（W = 138mm）

Busduct Straight Section Overall Dimensions — Width (W = 138mm)

转向单元

BUSDUCT ELBOW UNIT

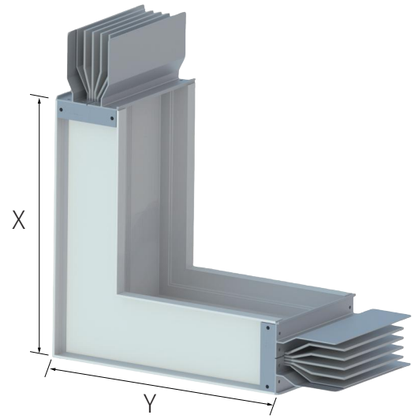
绝缘母线槽设计有各种标准转向单元以实现母线的各种走向，同时在非常规情况下，我们可以根据情况定制非标转向。

The insulated busduct is designed with various standard turning units to achieve different routing directions of the busbar. Meanwhile, in unconventional cases, we can customize non-standard turning units according to specific requirements.

L型弯头（ER/EL）

L-shaped Elbow(ER/EL)

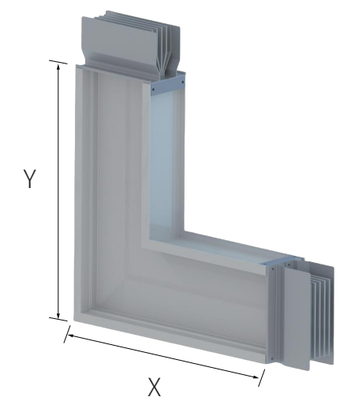
X长度 X Length	
标准长度（m ） Standard Length	0.3m
直线段最小长度（m ） Minimum Length of Straight Section	0.3m
直线段最大长度（m ） Maximum Length of Straight Section	1m
Y长度 Y Length	
标准长度（m ） Standard Length	0.3m
直线段最小长度（m ） Minimum Length of Straight Section	0.3m
直线段最大长度（m ） Maximum Length of Straight Section	1m



L型弯头（FI/FO）

L-shaped Elbow(FI/FO)

X长度 X Length	
标准长度（m ） Standard Length	0.3m
直线段最小长度（m ） Minimum Length of Straight Section	0.3m
直线段最大长度（m ） Maximum Length of Straight Section	1m



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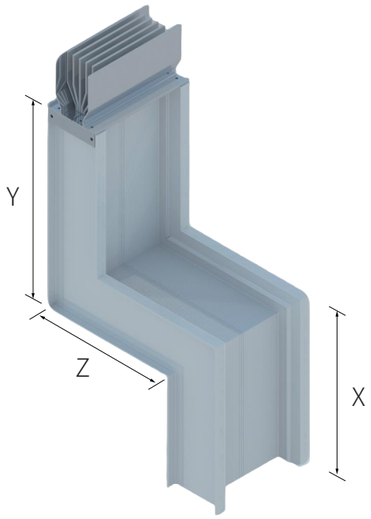
Y长度 Y Length	
标准长度（m） Standard Length	0.3m
直线段最小长度（m） Minimum Length of Straight Section	0.3m
直线段最大长度（m） Maximum Length of Straight Section	1m

Z型弯头（ER/EL）
Z-shaped Elbow(ER/EL)

X长度 X Length	
标准长度（m） Standard Length	0.3m
直线段最小长度（m） Minimum Length of Straight Section	0.3m
直线段最大长度（m） Maximum Length of Straight Section	1m

Y长度 Y Length	
标准长度（m） Standard Length	0.3m
直线段最小长度（m） Minimum Length of Straight Section	0.3m
直线段最大长度（m） Maximum Length of Straight Section	1m

Z长度 Z Length	
标准长度（m） Standard Length	0.4m
直线段最小长度（m） Minimum Length of Straight Section	0.4m
直线段最大长度（m） Maximum Length of Straight Section	1m



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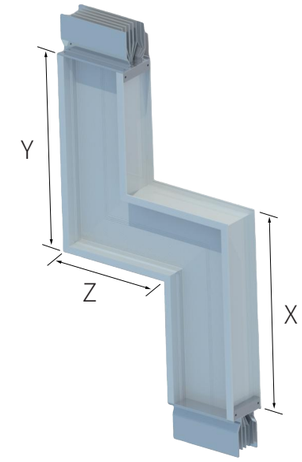
Z型弯头（IO/OI）
Z-shaped Elbow(IO/OI)

Z长度 Z Length	
直线段最小长度（m） Minimum Length of Straight Section	0.4m
直线段最大长度（m） Maximum Length of Straight Section	1m

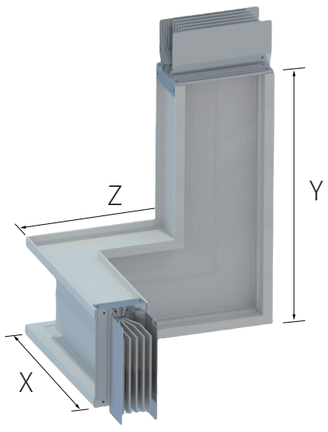
	X	Y
标准长度（m） Standard Length	0.3m	0.3m
直线段最小长度（m） Minimum Length of Straight Section	0.3m	0.3m
直线段最大长度（m） Maximum Length of Straight Section	1m	1m



Z型非标弯头（OL/IL）
Z-shaped Non-standard Elbow(OL/IL)

	X	Y
直线段最小长度（m） Minimum Length of Straight Section	0.3m	0.3m
直线段最大长度（m） Maximum Length of Straight Section	1m	1m

Z长度 Z Length	
直线段最小长度（m） Minimum Length of Straight Section	0.4m
直线段最大长度（m） Maximum Length of Straight Section	1m

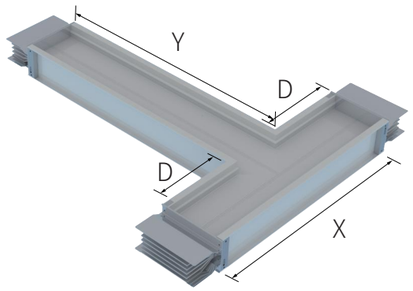


T型垂直弯头（TE）
T-shaped Vertical Elbow(TE)

X长度 X Length	
直线段最小长度（m） Minimum Length of Straight Section	0.6m
直线段最大长度（m） Maximum Length of Straight Section	2m

Y长度 Y Length	
直线段最小长度（m） Minimum Length of Straight Section	0.5m
直线段最大长度（m） Maximum Length of Straight Section	1m

D距离 D Distance	
直线段最小距离（m） Minimum Distance of Straight Section	0.3m



连接单元
CONNECTION UNIT

变压器连接单元

纳图母线槽提供完整的变压器连接单元，可与不同规格型号的变压器连接，最大电流可达6400A，并配备软连接，能够避免变压器运行时的震动造成的紧固件松动及接触不良，使得连接处运行安全可靠。我们将根据变压器的具体出线方式设计专用连接单元 。

说明：

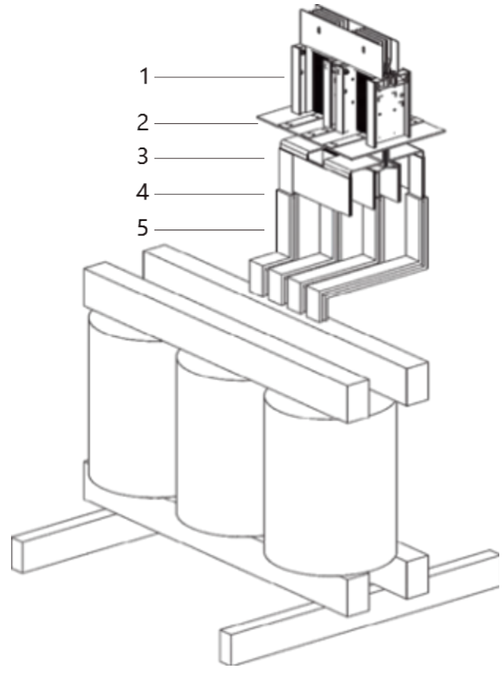
1-母线始端
2-始端法兰
3-始端并相连接
4-软连接
5-连接排

Transformer Connection Unit

Natus Busduct provides complete transformer connection units compatible with transformers of various specifications and models, supporting currents up to 6400A. Equipped with flexible connectors, these units prevent fastener loosening and poor contact caused by transformer vibration during operation, ensuring safe and reliable connections. We will design customized connection units based on the specific wiring configuration of each transformer.

Description

1- Busduct Tap-off Unit
2- Flange Adaptor for Busway Inlet
3- Busduct Parallel Phase Connection
4- Flexible Connection
5- Connection Bar



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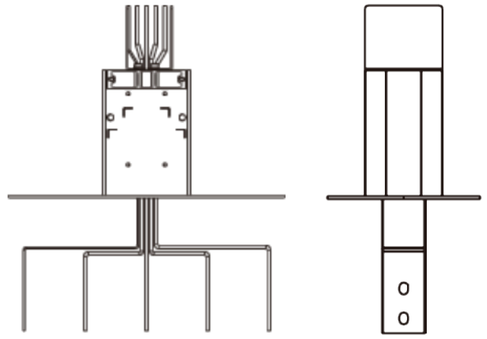
配电柜连接单元

纳图母线槽提供专门的始端进线单元和完整的连接单元实现与配电柜的连接，连接时根据用户低压柜的具体出线方式进行调整设计，既可顶端出线，也可底端出线，电流最高可到6400A，通常使用连接铜排进行转接，公司负责提供原材料及现场的指导安装，安装时保持现场连接最短路径及时间，进线单元中的始端母线配置有连接法兰，与设备密切结合，从而保证较高的防护等级。

Power Distribution Cabinet Connection Unit

Natus Busway provides dedicated starting feed-in units and complete connection units for interfacing with switchgear cabinets. Connection designs are customized based on the specific output configurations of the user's low-voltage switchgear, accommodating both top and bottom feed-out options. Current capacity reaches up to 6400A. Typically, copper busbars are used for connection transfer.
The company supplies raw materials and provides on-site installation guidance. Installation maintains the shortest connection paths and minimizes on-site time. The starting bus in the feed-in unit features connection flanges that integrate closely with the equipment, ensuring a high protection rating.

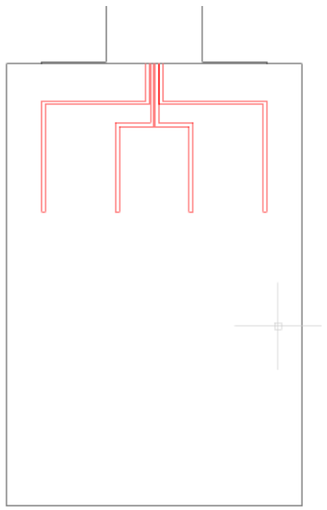


电缆进线连接单元

P-LINE母线槽提供单独的电缆进线单元,用于实现一段母线之间的馈电或者在无需电流保护的情况下使用安装的装置，电缆进线单元最大电流为6400A。多芯和单芯电缆都可以在电缆进线箱中使用，横截面不超过300mm²的电缆可直接安装使用。电缆进线单元配备法兰板和电缆护套。

Cable Incoming Line Connection Unit

P-LINE Busduct provides a dedicated cable incoming line unit, which is used to realize power feeding between busbar sections or for using installed devices without the need for current protection. The maximum current of the cable incoming line unit is 6300A. Both multi-core and single-core cables can be used in the cable incoming line box, and cables with a cross-sectional area not exceeding 300mm² can be directly installed and used. The cable incoming line unit is equipped with flange plates and cable sheaths.



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插接箱单元

P-LINE母线槽插接箱单元可提供16A~1250A分 接电流，插接箱插脚采用“T”型结构并做镀银处理，保证系统可靠的电气连续性。插接箱设计有多重联锁机构，防止在通电情况下插接箱门被打开，进一步保证了操作人员的安全。

插接箱底部中间设计为“U”结构，与盖板面贴合，提高母线槽插口防护等级。

插接箱中间与盖板贴合面设有紧固固定孔，方便现场插接箱安装。

Plug-in Box Unit

The P-LINE busduct plug-in box unit provides tap currents ranging from 16A to 1250A. Its plug pins feature a “T”-shaped structure with silver plating to ensure reliable electrical continuity throughout the system. The plug-in box incorporates multiple interlock mechanisms to prevent door opening during energized conditions, further safeguardin

箱体代号 Cabinet Code	电流等级 Current Rating	箱体尺寸（宽 X 长 X 高） Cabinet Dimensions (W × L × H)
PIM 100	⩽100A	300 X 400 X 300(mm)
PIM 160	125-160A	300 X 450 X 300(mm)
PIM 250	200-250A	300 X 500 X 300(mm)
PIM 400	315-400A	400 X 650 X 350(mm)
PIM 630	500-630A	400 X 650 X 350(mm)
PIM 800	800A	600 X 750 X 400(mm)
PIM 1000	1000A	600 X 750 X 400(mm)
PIM 1250	1250A	600 X 750 X 400(mm)

功能单元
FUNCTIONAL UNIT

母线槽插口装置

纳图母线槽插接口母线无间隙，真正实现了高度密集，插接桩头采用镀银处理，具有低阻抗、散热快等特点，且通用性强，适用于不同导体配置系统。母线槽系统的插接口装置与导电桩头之间设置有超声波塑料焊接固定的高弹性橡胶防护垫，防护等级高，确保插接时安全可靠。

Busduct Plug-in Assembly

Natus Busduct Plug-in Busbar features gap-free connections, achieving true high-density integration. The plug-in terminals are silver-plated, offering low impedance, rapid heat dissipation, and strong versatility for various conductor configuration systems. The busway system's plug-in assembly incorporates an ultrasonically welded, high-elasticity rubber protective pad between the conductive terminals, providing superior protection and ensuring safe, reliable connections.

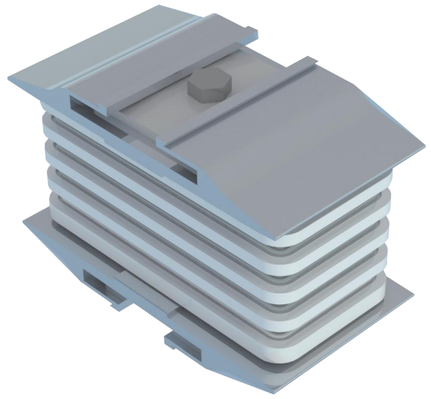
母线槽连接器单元

- 先进的设计理念

P-LINE母线槽连接器设计有双头螺栓，保证在安装时只需用19mm的普通扳手即可完成安装，连接时旋紧螺钉直至外部螺栓头自动脱落，且螺钉上的黄色指示牌脱落，表示该接头力矩已达到70N.m，可节约75%安装时间。安装完毕后剩余的螺栓头可在维修、拆装时二次使用。

- 连接更加安全可靠

P-LINE母线槽连接器锁紧时产生的压力通过特殊设计的碟型垫圈传递至与母排等截面的高压力均衡垫，确保整个母线连接处压力均匀、松紧适度，电气连 接安全可靠。连接母排厚度增加超过60%，以降低母线运行中接头处的温升，保母线运行安全、稳定。



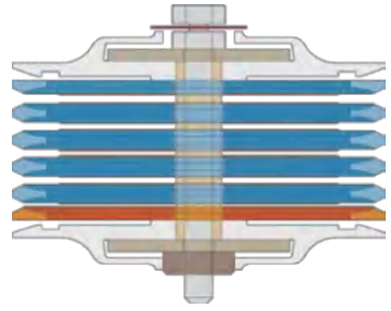
Busduct Connector Unit

-Advanced Design Concept

The P-LINE busway connector features dual-head bolts, ensuring installation can be completed using only a standard 19mm wrench. During connection, tighten the screws until the external bolt heads automatically detach and the yellow indicator on the screws falls off, indicating the joint torque has reached 70N.m. This saves 75% of installation time. The remaining bolt heads after installation can be reused during maintenance or disassembly.

- More secure and reliable connectivity

The pressure generated when locking P-LINE busbar connectors is transmitted through specially designed disc washers to high-pressure equalization pads matching the busbar cross-section. This ensures uniform pressure distribution and optimal tightness across the entire busbar connection, guaranteeing safe and reliable electrical contact. The busbar thickness has been increased by over 60% to reduce temperature rise at connection points during operation, ensuring safe and stable busbar performance.



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数据中心
Data Center

电网和配电
Power Grid and Power Distribution

化工冶金
Chemical and Metallurgical Industry

轨道交通
Rail Transit

工厂建设
Industrial Plant Construction

新能源
New Energy

石油石化
Petroleum and Petrochemical Industry

市政公用事业和配电
Municipal Utilities &Power Distribution

热电行业
Thermal Power Industry

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国家质量认证中心CQC证书-6300A
China Quality Certification (CQC) Certificate - 6300A

产品认证证书
II型自愿认证

证书编号：CQC2017010301966593
发证日期：2020 年 03 月 25 日
有效期至：2032 年 03 月 18 日

委托人名称及注册地址：纳图（常州）电气股份有限公司 常州市天宁区雕庄街道凤凰路 38 号
制造商名称及注册地址：纳图（常州）电气股份有限公司 常州市天宁区雕庄街道凤凰路 38 号
生产企业名称及生产地址：纳图（常州）电气股份有限公司 常州市天宁区雕庄街道凤凰路 38 号
产品名称和系列、规格、型号：母线槽 P-LINE 母线干线单元:In:A=6300A～4000A,Icw=120kA;Ue=1000V,Ui=1000V,50Hz,IP66;有防止火焰蔓延特性
产品标准和技术要求：GB/T 7251.6-2015
认证模式：产品型式试验+初次工厂检查+获证后监督

上述产品符合 CQC12-000001-2020 认证规则的要求，特发此证。
证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

可通过扫描下方二维码或登录国家认监委网站（www.cnca.gov.cn）查验证书信息

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国家质量认证中心CQC证书-4000A
China Quality Certification (CQC) Certificate - 4000A

产品认证证书
II型自愿认证

证书编号：CQC25107469896
发证日期：2025 年 04 月 27 日
有效期至：2035 年 04 月 26日

委托人名称及注册地址：纳图（常州）电气股份有限公司 常州市天宁区雕庄街道凤凰路 38 号
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生产企业名称及生产地址：纳图（常州）电气股份有限公司 常州市天宁区雕庄街道凤凰路 38 号
产品名称和系列、规格、型号：母线槽 P-LINE 母线干线单元:In:A= 4000A～1600A,Icw=80kA;分接单元:Inc=500A～16A,Ic=20kA;Ue=690V;带分接单元/1000V;不带分接单元;Ui=800V;带分接单元/1000V;不带分接单元;50Hz;IP65;带分接单元;IP66;不带分接单元;IP66;有防止火焰蔓延特性
产品标准和技术要求：GB/T 7251.6-2015
认证模式：产品型式试验+初次工厂检查+获证后监督

上述产品符合 CQC12-000001-2020 认证规则的要求，特发此证。
证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

可通过扫描下方二维码或登录国家认监委网站（www.cnca.gov.cn）查验证书信息

授权签字人 陈明 签发 谢肇煦
中国质量认证中心
http://www.cqc.com.cn 中国·北京·南四环西路188号9区 100070 电话：+86 10 83886666

CERTIFICATE OF PRODUCT CERTIFICATION
TYPE II CQC CERTIFICATION

CERTIFICATE NO.: CQC25107469896
Valid from: Jul.18,2025
Valid until: Apr.27,2035

NAME AND REGISTERED ADDRESS OF THE APPLICANT: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
NAME AND REGISTERED ADDRESS OF THE MANUFACTURER: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
NAME AND LOCATION OF THE FACTORY: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
PRODUCT NAME, MODEL AND SPECIFICATION: Busways P-LINE 母线干线单元:In:A= 4000A～1600A,Icw=80kA;分接单元:Inc=500A～16A,Ic=20kA;Ue=690V;带分接单元/1000V;不带分接单元;Ui=800V;带分接单元/1000V;不带分接单元;50Hz;IP65;带分接单元;IP66;不带分接单元;IP66;有防止火焰蔓延特性
THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS: GB/T 7251.6-2015
TYPE OF CERTIFICATION SCHEMES: Type testing of product + initial factory inspection + follow up factory inspection

This is to certify that the above mentioned product(s) complies with the requirements of certification rules of CQC12-000001-2020.
Date of original issued: Apr.28,2025
The validity of the certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.

The certificate information is available through the QR code below or CNCA's website: www.cnca.gov.cn

SIGN BY 陈明 SIGNATURE 谢肇煦
中国质量认证中心 CHINA QUALITY CERTIFICATION CENTRE
CHINA QUALITY CERTIFICATION CENTRE CO., LTD. Section B, No. 188, Nansihuan Xilu, Beijing 100070 P. R. China
Tel: +86 10 83886666 http://www.cqc.com.cn

CERTIFICATE OF PRODUCT CERTIFICATION
TYPE II CQC CERTIFICATION

CERTIFICATE NO.: CQC25107469895
Valid from: Jul.18,2025
Valid until: Apr.27,2035

NAME AND REGISTERED ADDRESS OF THE APPLICANT: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
NAME AND REGISTERED ADDRESS OF THE MANUFACTURER: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
NAME AND LOCATION OF THE FACTORY: Natu (Changzhou) Electric Co., Ltd No. 38 Fenghuang Road, Diaozhuang Street, Tianning District, Changzhou City
PRODUCT NAME, MODEL AND SPECIFICATION: Busways P-LINE 母线干线单元:In:A= 1600A～400A,Icw=50kA;分接单元:Inc=630A～16A,Ic=20kA;Ue=690V;带分接单元/1000V;不带分接单元;Ui=800V;带分接单元/1000V;不带分接单元;50Hz;IP65;带分接单元;IP66;不带分接单元;IP66;有防止火焰蔓延特性
THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS: GB/T 7251.6-2015
TYPE OF CERTIFICATION SCHEMES: Type testing of product + initial factory inspection + follow up factory inspection

This is to certify that the above mentioned product(s) complies with the requirements of certification rules of CQC12-000001-2020.
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PRECISION IN DETAIL