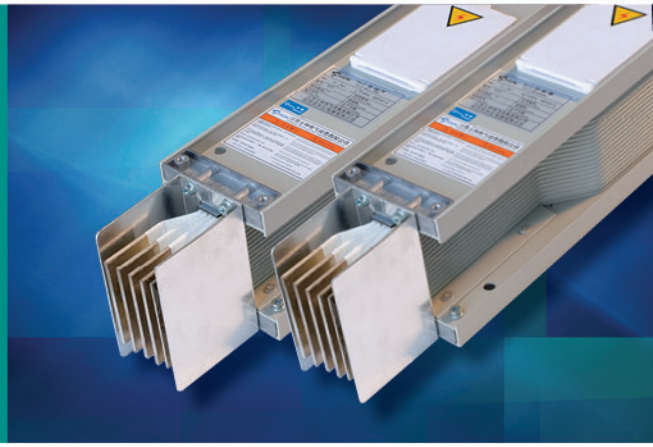
诚信卓越　士林伟业

GOOD FAITH & GREAT SHILIN

SHILIN 士林集团

母线槽系列

Busbar Systems



江苏士林电气集团有限公司

JIANGSU SHILIN ELECTRIC GROUP CO., LTD.

公 司 简 介

在中国第一个生态环境市，长江中下游第二大岛 ---- 江苏省扬中市境内有一家集输配电成套、电力电气、太阳能组件等产品研发、制造、销售、服务于一体的国家级高新技术企业，这就是 ---- 江苏士林电气集团有限公司。

公司注册资金 10018 万元，总资产 6 亿元，厂区占地面积 11 万余平方米，建筑面积 8 万平方米。现有员工 1000 余人，其中高级工程师 20 人，工程师 42 人，其他各类专业技术人员 286 人，综合实力年产能 50 亿元，公司通过了 ABS 美国船级社质量管理体系认证、ISO9001 质量体系认证、ISO14001 环境管理体系认证和“CCC”产品强制认证。全部产品均通过了国家或行业最新标准检测，公司连续多年被评为“江苏省明星企业”“江苏省知名企业”、“质量信用 AAA 级”、“重合同、守信用企业”及省市“AAA”资信企业。拥有七十余项国家专利，多项产品获得省和国家的高新技术产品称号，公司自主研发的管型母线获江苏省科学技术奖、江苏省专精特新产品。

江苏士林电气集团有限公司与西门子电气 、ABB 电气等企业强强联合，在国内外市场上共同生产和合作经营各类电气产品。长期以来公司以“科技是第一生产力”为指导思想，以不断创新的理念，精益求精的态度，现代化的管理手段，为广大用户专业化制造:高低压配电柜 、高压绝缘管母线、风电专用管母线、照明母线、密集型母线槽、IP68 防水、浇注、防腐母线槽、耐火电缆桥架、一次滚压成型环形筋节能高强电缆桥架、支架等系列产品。特别是公司生产的绝缘管母线、浇注防水母线是国内生产规模最大，产品系列最齐全且专利技术在国内外处领先地位的高新技术产品，在工控、供配电等领域享有较高的知名度和市场占有率。

公司先进的创新技术和卓越的品质，成就了“士林品牌”，遍布全国各大城市的营销服务网络，确保了“士林产品”和“士林服务”在行业中的排头兵地位;士林的产品被广泛应用于国内举世瞩目的大型项目——上海世博会、南京青奥会、田湾核电站.....士林的用户遍布：高铁、地铁、高速公路、发电系统、造船汽车、工矿石油化工、和政府工程等各项领域并获得一致好评。

“士林电气”始终秉承“专业、品质、共赢”的企业理念，汇集国内外精英才俊，走自主创新发展之路，实现士林电气工程技术和专业化服务技术的双提升，达到士林产品从“士林制造”到“士林创造”的新发展，在中国电气产业中，展示自己的综合实力和高端水平。

公司主要产品有

一、配电类

1. 10KV~35KV 的 KYN61、KYN28、XGN 等系列固定式、手车式高压柜;SLN2X 环保充气柜、SLGIS 充气柜、HXGN-C、F、V 系列环网单元；8PT、MDmax、MNS、GCS、GCK、GGD 等系列高级型低压开关柜。

2. XLC/A 密集型母线槽、CFW 高强封闭母线槽、CMLJ 新型节能母线槽、IP68 防腐防水 DCL 母线、NHJX 金属耐火母线槽、NHSX 树脂耐火母线槽、NHZX 照明耐火母线槽、SL-KB 照明母线槽、GCL 高压共相树脂浇注母线槽、GGM 绝缘管母线、800MW 发电机组离相封闭母线、FGM 风力发电绝缘管母线。

二、桥架类

1. SLJ-DJ 大跨距电缆桥架

2. SLJ-U、T、H 型电缆桥架

3. SLJ-ZBQ 玻璃钢阻燃防腐桥架

4. SLJ-LQJ 铝合金防腐桥架

5. SLJ-HQ 核级桥架

6. NDCH 系列耐火桥架

7. TA 系列船用桥架

公司热诚欢迎与各大设计院所、广大用户和关心和支持士林发展的社会精英真诚合作，携手致力于我国电气事业的发展和繁荣。

Company Profile

There is a national high-tech enterprise integrating research &development, manufacture, sale and service of complete setof power transmission and distribution product, electric product, solar energy components and so onin Yangzhong City which is the first ecological city of China, the second largest island in the middle and lower reaches of Yangtze River, Jiangsu province. That is Jiangsu Shilin Electric Group Co., Ltd.

The registered capital of the company is 100.18 million and the total asset is 0.6 billion. The factory covers an area of 110,000 square meters and the building area is 80,000 square meters. There are around 1000 employees, 20 of them are senior engineers, 42 of them are engineers and 286 of them are other kinds of professional technicians. The annual production is 5 billion. The company has passed ABS ABS quality management system certification, ISO9001 quality system, ISO14001 environment management system and CCC. All products passed the test of national or industrial latest standard. The company was awarded as "Star Enterprise of Jiangsu Province" ," Well-known Enterprise of Jiangsu province" "AAA of Quality Credit" , "Enterprise honoring the contract and keeping the promise" and "AAA" credit. We have more than 70 national patents. A number of products were named as national and provincial high-tech product.The tubular busbar independently researched and developed by our company has won Science and Technology Award of Jiangsu Province and been certified asprofessional,unique, superior and new product of Jiangsu Province.

Jiangsu Shilin Electrical Equipment Co., Ltd. is strongly associated with Siemens electric, abb electric and other enterprises to jointly produce and cooperate in various electrical products in domestic and foreign markets. Taking "Science and technology are the primary productive force "as the guiding ideology and adhering to the concept of constant innovation, the attitude of keeping on improving and using modernized management method, the company specially produces the following product for users: high & low voltage power distribution cabinet, high-voltage insulating tubular busbar, tubular busbar for wind power, lighting busbar, compact bus duct, pouring waterproof and corrosion proof bus duct with IP68, fire-resistant cable tray, roller forming ring rib、energy saving high-strength cable tray, supportand so on.Especially, theinsulating tubular busbarand pouring waterproof busbar manufactured by the company are high-tech products that the production scale is largest in China, the series is most complete and thepatent technology takes the leading position at home and abroad and have high popularity and market share in the field of industrial control, power supply and distribution.

The advanced innovative technology and excellent quality makes the achievement of "SHILIN brand" andthe marketing and service network in all over Chinese big citiesguarantees the leading position of "SHILIN product" and "SHILIN service" in this industry. The product produced by SHILIN is widely applied in the national remarkable big projects---Shanghai World Expo, Nanjing Youth Olympic Games, Tianwan Nuclear plant and so on. The users of SHILIN product spreads over high-speed railway, metro, expressway, power generation system, ship building, automobile, mining industry, petroleum, chemical industry, government project and highly praises the product.

SHILIN Electric always adheres to the business concept of profession, high quality and win-win, employs elites at home and abroad, takes the developing way of independent innovation to realize the promotion of electric engineering technology and specialized service technology, reach the new development from "made in SHILIN" to "invent in SHILIN" and show comprehensive strength and high standard in China' s electric industry.

The mainproducts of the company are as follows

一、 power distribution product

1. 10kV~35kV KYN61, KYN28, XGN and other series fixed and handcart high voltage cabinets; SLN2X environmental protection inflatable cabinet, SLGI3 inflatable cabinet, hxgn-c, F and V series ring network units; 8PT, MDmax, MNS, GCS, GCK, GGD and other series of advanced low-voltage switchgear.

2. XLC/A compact bus duct, CFW high-strength enclosed bus duct, CMLJ new enrgy-saving bus duct, corrosionproof and waterproof DCL busbar with IP68, NHJX metal fire resistant bus duct, NHSX resin fire resistant bus duct, NHZX lighting fire resistant bus duct, SL-KB lighting bus duct, GCL high-voltage common enclosed bus duct casted with resin, GGM insulating tubular busbar, isolated-phase busbar of 800MW generator unit, FGM wind power generation insulating tubular busbar.

二、cable tray

1. SLJ-DJlong-span cable tray
2. SLJ-U、TandHcable tray
3. SLJ-ZBQ FRP flame retardant and corrosion proof cable tray
4. LJ-LQJ aluminum alloy corrosion proof cable tray
5. SLJ-HQ uncommon cable tray
6. NDCH fire resistant cable tray
7. TA marine cable tray

Warmly welcome to cooperate with each design institute, user and social elites who support the development of SHILIN to work together for the development and prosperity of our country' s electric industry.

SHILIN 士林集团

德者居上　智者在侧　能者居前

Virtue prevails　wise are on the side　competent are in the forefront

只有站在顾客的角度着想，
才能真正赢得市场。
士林严格按照国家规格的有关标准，
本着方便用户、服务大众的原则，
并根据客户的需求不断创新，
提高整体服务水平，
以优质的服务提升了品牌附加值。

Only from the customer's point of view,
Only in this way can we really win the market.
Shilin strictly conforms to the relevant standards of the national specifications.
In line with the principle of user-friendly and public service,
And constantly innovate according to the needs of customers.
Improve the overall service level.
With high quality service, the added value of the brand has been enhanced.

诚信为本

Honesty is the foundation

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系统概述 System overview

XLC/A系列低阻抗密集母线槽内部采用典型的三明治结构，是一种灵活可靠的配电系统，设计合理、性能优越，具有稳定可靠、配电效能高、散热好、电压降低、耐机械冲击和安装简便等特点；适用于交流三相三线、三相四线、三相五线制，频率50~60Hz，额定工作电压至1000V，额定绝缘电压至1500V，额定工作电流100~6300A的供配电系统。

XLC/A series of low impedance busbar grooves adopt typical sandwich structure, which is a flexible and reliable distribution system with reasonable design and superior performance. It has the characteristics of stability and reliability, high distribution efficiency, good heat dissipation, low voltage, resistance to mechanical shock and simple installation. It is suitable for three-phase three-wire, three-phase four-wire, three-phase five-wire system with frequency of 50-60 Hz and rated working voltage. To 1000V, rated insulation voltage to 1500V, rated working current 100 ~ 6300A power supply and distribution system.

XLC/A系列低阻抗密集母线槽系统可以使用在大型商业、楼盘项目中，作为大电流的高效输配电系统。为了满足用户需求，XLC/A母线槽系统在设计上降低了母线槽自身的重量，充分考虑了竖井安装时对母线槽的高稳定性的要求，提高了系统的可靠性和适用性。

XLC/A series low impedance dense busbar system can be used in large commercial and real estate projects as high current and efficient transmission and distribution system. In order to meet the needs of users, XLC/A bus slot system reduces the weight of bus slot itself in design, fully considers the requirement of high stability of bus slot during shaft installation, and improves the reliability and applicability of the system.

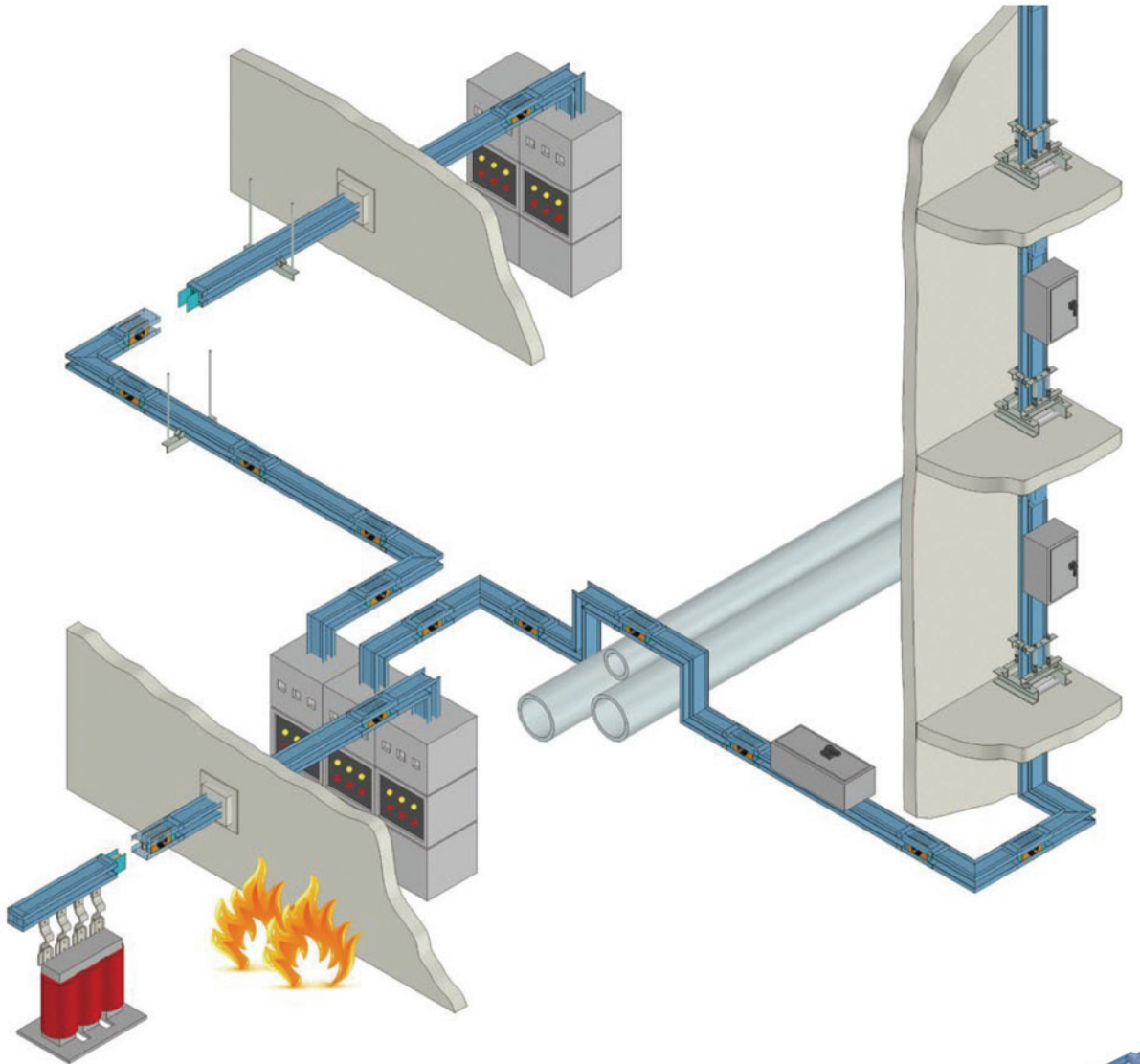
针对工矿企业对母线槽短时耐受电流、低阻抗等方面有很高的要求，以及可能存在的各类电磁干扰；XLC/A母线槽系统内可选的中性线(100%或200%)，可满足各种电力系统中对消除谐波的要求。全弱磁材料(铝和铝镁合金)外壳，不会因大电流涡流磁滞损耗对母线槽系统造成影响。

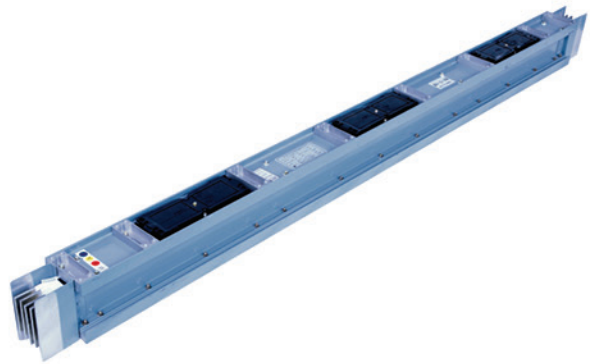
In view of the high requirements of industrial and mining enterprises for short-term withstanding current and low impedance of busbar, as well as various possible electromagnetic interference, the optional neutral line (100% or 200%) in XLC/A busbar system can meet the requirements of eliminating harmonics in various power systems. The shell of all-weak magnetic material (aluminum and aluminium-magnesium alloy) will not be affected by high current eddy current hysteresis loss.

XLC/A系列母线槽作为一种供工业厂房、医院、商场、高层建筑或高科技环境用的低成本、高效益的输配电方案，将为你带来高性能的完美组合。

XLC/A series busbar trough, as a low-cost, high-tech transmission and distribution scheme for industrial plants, hospitals, shopping malls, high-rise buildings or high-tech environment, will bring you a perfect combination of high performance.

系统概述 System overview





产品结构特点 Product structure characteristics

体积小、灵活性高 Small size and high flexibility

紧凑的“三明治”结构，既节省了占用空间，又具有优良的电压特性，各种功能单元可运用于任何转角和高度的改变，可安装于夹层、沿墙等任何建筑空间。

“三明治”结构的导体，配合全封闭外壳，共同形成了整体散热的传播途径，散热效果更好。

The compact "sandwich" structure not only saves space, but also has excellent voltage characteristics. Various functional units can be used in any corner and height changes, and can be installed in any building space such as sandwich, wall and so on.

The conductor of "sandwich" structure, together with the fully enclosed shell, forms the transmission way of overall heat dissipation, and the heat dissipation effect is better.

安全可靠的插接箱 Safe and reliable socket box

插接接的操作手柄可以安装在箱体的门板上，设置了准确的分、合闸指示。

挂锁机构用于防止插接箱误合闸和阻止未经允许的接取电力行业。

带熔丝的插接箱设置了专门的熔丝提拉工具。

插口模制盖板防止手指无意触及导电体。

内部接地和外壳接地采用插接式，插脚采用合理的结构设计和镀银处理以保证系统的可靠接触。

插接箱内部连接机构可防止在通电的情况下，插接箱门被打开，进一步保证了操作人员的人身安全。

The operation handle of the plug-in connection can be installed on the door panel of the box body with accurate opening and closing instructions.

The padlock mechanism is used to prevent the incorrect closing of the socket box and to prevent unauthorized access to the power industry.

A special fuse lifting tool is set up in the fuse socket box.

The socket moulded cover prevents fingers from unintentionally touching the conductor.

Inside grounding and outer grounding adopt plug-in type, pins adopt reasonable structure design and silver plating treatment to ensure reliable contact of the system.

The internal connection mechanism of the socket box can prevent the door of the socket box from being opened under the condition of electrification, which further ensures the personal safety of the operator.

坚固轻便的全铝外壳 Solid and portable all-aluminium case

母线槽系统使用重量轻、模压成型的全封闭铝合金型材作为外壳，独特的结构为您提供了高适应性和安全可靠性，从容应对各种特殊应用条件。

经过喷涂的全铝外壳能经受1000小时的盐雾试验。

全铝外壳具有极好的抗锈蚀、散热性能和导电性能，整体外壳具有100%的接地容量。

Bus bar system uses light weight, fully enclosed aluminium alloy profiles formed by moulding as the shell. The unique structure provides you with high adaptability and safety reliability, and can deal with all kinds of special application conditions calmly.

The sprayed aluminium shell can withstand 1000 hours of salt spray test.

Aluminum enclosure has excellent corrosion resistance, heat dissipation and conductivity. The whole enclosure has 100% grounding capacity.

高性能材料 High Performance Materials

母线槽系统采用优质镀锡或镀银铜排或铝排作为导电材料，导电排的外表面均有良好的防腐保护。

导电排采用B级（130℃）的热成型聚酯薄膜绝缘材料整体包裹，极大地提高了母线的绝缘强度和抗冲击强度。

采用了环保型绝缘材料，通过了ROHS要求的SGS六项物性检测及CE认证。

产品结构特点 Product structure characteristics

Bus-bar system uses high-quality tin or silver-plated copper or aluminum bars as conductive materials. The outer surface of conductive bars has good anti-corrosion protection.
The conductive row is wrapped with B grade (130 C) thermoformed polyester film insulation material, which greatly improves the insulation strength and impact strength of bus bar.
The environment-friendly insulation material has been adopted and passed the six physical properties testing and CE certification of SGS required by ROHS.

连接方便快捷 Convenient and fast connection

锥形绝缘板加强机械强度、模压外壳保证压力和外壳不翘起。
宽沿碗形锰钢垫圈，确保了接触面压力均匀。
一把普通的19#扳手就可以紧固带有红色指示的双头单螺栓，当指示标志自然脱落时，无需任何检测工具就可以判定连接器已紧固。
螺栓可以在维护时再次使用。
为了补偿安装误差对连接的影响，连接器延母线长度方向有±4mm可调节余量。

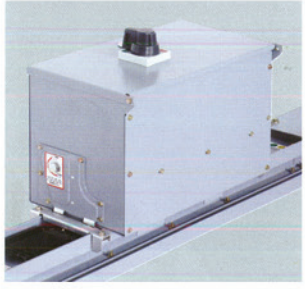
Conical insulating plate strengthens mechanical strength, and the molded shell ensures that the pressure and the shell do not warp.
Wide bowl-shaped manganese steel washer ensures even pressure on the contact surface.
A common 19 # wrench can tighten the double-headed single bolt with red indication. When the indication sign falls off naturally, the connector can be determined to be tightened without any detection tool.
Bolts can be used again during maintenance.
In order to compensate for the influence of installation errors on connection, the length direction of connector busbar has an adjustable allowance of (+4 mm).

精密的数控锯切机床保证了母排切面的平整。最大限度的降低了母线连接部位的接触电阻。

Precision CNC sawing machine ensures the smooth cutting surface of mother row. The contact resistance of bus connection is reduced to the maximum extent.

宽铅锰钢垫圈保证了连接器的可靠连接。无需力矩扳手的双头螺栓最大限度的提高了连接效率和效果。
独特的温度指示模块确保了在系统故障，温度过高时可以提醒检修。

Wide lead-manganese Steel Gaskets ensure reliable connection of connectors. The double-head bolt without torque wrench maximizes the connection efficiency and effect.
The unique temperature indicator module ensures that the system can be alerted to overhaul when the temperature is too high.



XLC/A母线槽插接箱可提供独特的机械辅助推进机构；提高了连接的效率和可靠性。

XLC/A bus slot socket box can provide a unique mechanical auxiliary propulsion mechanism, which improves the efficiency and reliability of the connection.

参照标准 Reference standard

XLC/A母线槽产品符合以下标准:
XLC/A busbar products meet the following standards:

IEC 60947.2-1997 GB7251.1-2005

IEC 60439.1-2001 GB7251.2-2006

IEC 60439.2-2000

IEC60529

JB/T 9662-1999

防护等级 Protection level

根据应用场合不同，母线槽防护等级可达IP65
According to the application situation, the bus-bar protection level can reach IP65.

注：IP40- “40”表示防止直径不小于1mm的固体异物进入壳内， “0”表示无防护。
IP42- “42”表示防止直径不小于1mm的固体异物进入壳内， “2”表示防止15°滴水进入。
IP54- “5”表示防尘， “4”表示防溅水。
IP65- “6”表示尘密， “5”表示防喷水。

Note:
IP40 - "40" means to prevent solid foreign bodies not less than 1mm in diameter from entering the shell, and "0" means unprotected.
IP42 - "42" means to prevent solid foreign bodies not less than 1 mm in diameter from entering the shell, and "2" means to prevent water dripping at 15 degrees from entering the shell.
IP54 - "5" means dustproof, and "4" means splashproof.
IP65 - "6" means dusty, and "5" means waterproof.

XLC/A母线槽系统的接地电阻(环境温度20℃)
Grounding Resistance of XLC/A Bus Channel System (Ambient Temperature 20℃)

XLC/A母线槽接地排电阻(Cu)50%内部接地

XLC/A Bus Groove Grounding Bar Resistance (Cu) 50% Internal Grounding

序号 No.	额定电流（A） Rated current	电阻（$10^{-6}\Omega$/m） Resistance
1	250	308.6
2	400	208.1
3	630	179.1
4	800	141.1
5	1000	108.1
6	1250	94.2
7	1600	84.3
8	2000	55.8
9	2500	37.6
10	3150	28.9
11	4000	23.3
12	5000	17.4
13	6300	15.1

表格form 5-1

XLC/A母线槽接地排电阻(Al)50%内部接地

XLC/A Bus Groove Grounding Bar Resistor (Al) 50% Internal Grounding

序号 No.	额定电流（A） Rated current	电阻（$10^{-6}\Omega$/m） Resistance
1	100	342.7
2	160	342.7
3	200	342.7
4	250	342.7
5	400	259.8
6	630	178.1
7	800	138.0
8	1000	119.4
9	1250	95.2
10	1600	76.9
11	2000	63.3
12	2500	52.7
13	3150	35.0
14	4000	25.2

表格form 5-2

技术参数 Technical parameter

短路电流额定值 Short circuit current rating

XLC/A母线槽提供了稳定高效的电力输送，具有极高短路耐受能力。

XLC/A母线槽通过了CCC对于短路耐受能力的第三方验证。

XLC/A bus bar provides stable and efficient power transmission, with very high short circuit tolerance.
XLC/A bus slot has passed CCC's third-party verification of short-circuit tolerance.

铜导体 Copper conductor

额定电流（A） Rated current	额定短时耐受电流(kA) Rated short-time withstand current	额定峰值耐受电流(kA) Rated peak tolerable current
100~630	30	63
630~1600	50	105
1600~3150	65	143
4000~6300	100	220

表格form 6-1

铝导体 Aluminum conductor

额定电流（A） Rated current	额定短时耐受电流(kA) Rated short-time withstand current	额定峰值耐受电流(kA) Rated peak tolerable current
100~250	10	17
400~800	30	63
1000~2500	50	105
3150~4000	80	176

表格form 6-2

技术参数 Technical parameter

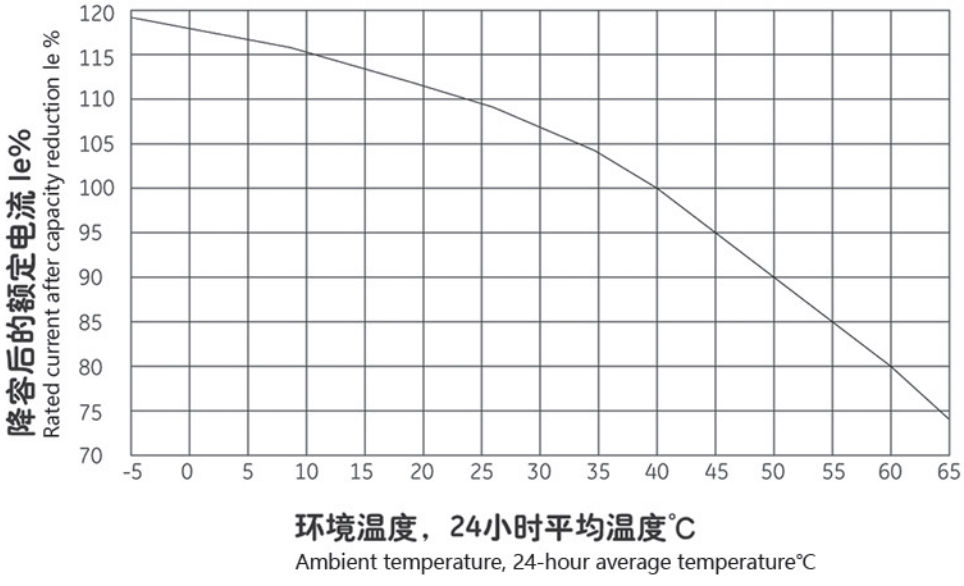
环境温度对使用的影响 Effect of ambient temperature on use

在40℃的环境温度下，XLC/A母线槽系统可以在额定电流负载连续工作，并且外壳温升不超过30K。
如果母线槽系统持续在高温的环境下工作，需要做降容设计。降容后的额定电流 = 额定工作电流X降容系数(见下表)。

The XLC/A bus-bar system can work continuously under rated current load at 40 C, and the temperature rise of the shell does not exceed 30K.
If the bus-bar system continues to work in a high temperature environment, capacity reduction design is needed. Rated current after capacity reduction = rated working current X capacity reduction factor (see table below).

环境温度℃ ambient temperature	降容系数 Volume reduction coefficient
40	1.00
45	0.95
50	0.90
55	0.85
60	0.80
65	0.74
70	0.67

表格form 7-1



技术参数 Technical parameter

电阻、电抗、阻抗及电压降 Resistance, reactance, impedance and voltage drop

XLC/A母线槽具有低电压降特性，高纯度的铜导体提供了极低的电阻，三明治结构的密集型设计和弱磁材料的铝外壳把导体电抗降到了最低，以下为母线直线段的电阻抗和电压降数据。

XLC/A busbar slot has the characteristics of low voltage drop. High purity copper conductors provide very low resistance. Intensive design of sandwich structure and aluminium shell of weak magnetic material minimize the reactance of conductors. Here are the resistance and voltage drop data of busbar straight section.

铜母线（50Hz，温度20℃） Copper Bus (50Hz, 20 C)

额定电流（A）Rated current	电阻 Resistance	电抗 Reactance	阻抗 Impedance	电压降(V/m) Voltage drop(V/m) 功率因素 Power factor		
	$10^{-6}\Omega$/m)			0.8	0.9	1.0
250	154.4	44.8	160.8	0.065	0.069	0.067
400	104.0	35.3	109.8	0.072	0.076	0.072
630	89.6	32.1	95.1	0.099	0.103	0.098
800	70.5	27.4	75.7	0.101	0.105	0.098
1000	58.9	24.1	63.7	0.107	0.110	0.102
1250	47.1	20.7	51.4	0.108	0.112	0.102
1600	35.3	16.6	39	0.106	0.108	0.098
2000	27.9	14.2	31.3	0.107	0.109	0.097
2500	18.8	10.7	21.6	0.093	0.094	0.081
3150	14.4	9.5	17.3	0.094	0.094	0.079
4000	11.7	6.3	13.3	0.091	0.092	0.081
5000	9.4	5.4	10.8	0.084	0.084	0.073
6300	8.7	5.0	10.0	0.086	0.087	0.075

表格form 8-1

铝母线（50Hz，温度20℃） Aluminum Bus (50Hz, 20 C)

额定电流（A）Rated current	电阻 Resistance	电抗 Reactance	阻抗 Impedance	电压降(V/m) Voltage drop(V/m) 功率因素 Power factor		
	$10^{-6}\Omega$/m)			0.8	0.9	1.0
100	171.3	35.3	174.9	0.027	0.029	0.030
160	171.3	35.3	174.9	0.044	0.047	0.047
200	171.3	35.3	174.9	0.055	0.059	0.059
250	171.3	35.3	174.9	0.069	0.073	0.074
400	129.9	29.5	133.2	0.084	0.090	0.090
500	105.3	25.6	108.4	0.086	0.092	0.091
630	89.0	22.8	91.9	0.093	0.098	0.096
800	69.0	19.1	71.6	0.092	0.098	0.096
1000	59.7	17.1	62.1	0.100	0.106	0.103
1250	47.6	14.5	49.8	0.101	0.107	0.103
1600	38.5	12.5	40.4	0.106	0.111	0.107
2000	31.7	10.9	33.5	0.110	0.115	0.110
2500	26.3	9.5	28.0	0.116	0.121	0.114
3150	17.5	5.8	18.5	0.095	0.100	0.096
4000	12.6	4.8	13.5	0.090	0.093	0.087

表格form 8-2

功能单元 functional unit

馈入式直线段
Feeding straight line segment

馈入式母线槽承载来自电源的电流，不设插接口。

标准长度为3000mm或4000mm，最小长度为400mm。

Feed-in bus slot carries the current from the power supply without socket.

The standard length is 3000mm or 4000mm, and the minimum length is 400 mm.

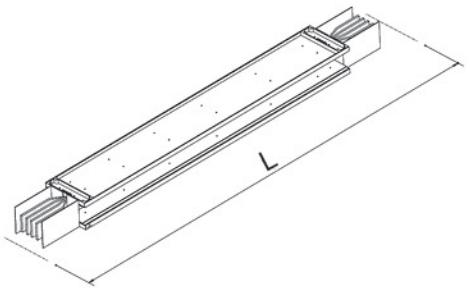


图9-1

尺寸和重量
Size and weight

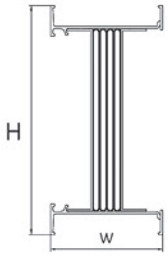


图9-2

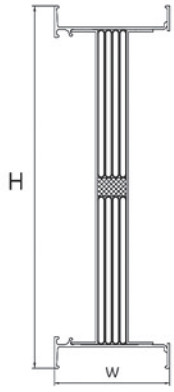


图9-3

铜母线 Copper bus

额定电流(A)	宽度W(mm)	高度H(mm)	重量(kg/m)		附图
			四线100%N	五线100%N，50%PE	
250	130	95	8.54	9.34	8-2
400	130	105	10.60	11.50	
630	130	110	14.20	15.54	
800	130	125	17.20	18.94	
1000	130	140	20.10	22.24	
1250	130	160	24.00	26.67	
1600	130	190	29.84	33.31	
2000	130	220	35.68	39.95	
2500	130	260	43.40	48.74	
3150	130	395	59.58	66.52	8-3
4000	130	485	83.33	92.68	
5000	130	575	102.45	114.20	
6300	130	780	134.60	149.80	

表格form 9-1

铝母线 Aluminum bus

额定电流(A)	宽度W(mm)	高度H(mm)	重量(kg/m)		附图
			四线100%N	五线100%N，50%PE	
250	130	90	6.60	6.84	8-2
400	130	105	7.78	8.15	
500	130	115	8.87	9.32	
630	130	130	10.09	10.66	
800	130	140	10.90	11.55	
1000	130	160	12.52	13.33	
1250	130	190	14.95	16.01	
1600	130	245	19.39	20.89	
2000	130	290	23.05	24.91	
2500	130	455	34.77	37.37	
3150	130	575	44.48	48.04	8-3
4000	130	635	49.34	53.39	

表格form 9-2

注：以上数据仅供参考，我公司保留对以上数据的修改权，怒不另行通知。

Note: The above data are for reference only. Our company reserves the right to modify the above data without further notice.

功能单元 functional unit

插入式直线段 Inserted straight line segment

插入式母线槽插接口设置灵活，双面都可以设插接口。3m长标准段单侧最多可以配置4个插口，用户可以根据具体情况预留插接口以便在设备负载更换位置或地产加时使用。
每个插接口均设有插口座板和插口盖板，插口座板可防止手指意外接触带电导体（IP2X），同时导体的相序在插口座板上给予标识。插口盖板可防止导电接触面被污染，使用衬垫可具备防尘或防潮能力。
标准长度为3000mm或4000mm，最小长度为1000mm，L1（为插接口中心距标准端头距离）最小尺寸为400mm，L2（为相邻两插接口中心距离）最小尺寸为610mm。

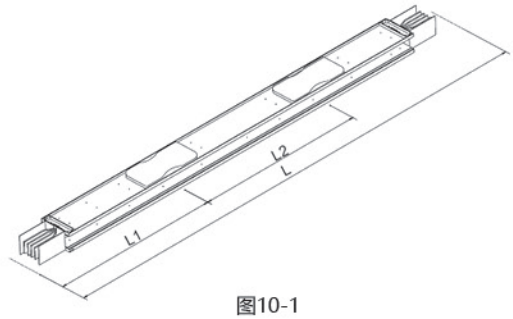


图10-1

The plug-in busbar slot socket interface is flexible and can be installed on both sides. The 3M long standard section can be configured with up to four sockets on one side. Users can reserve the sockets according to the specific conditions for the replacement of equipment load or overtime use of real estate.
Each socket is equipped with a socket plate and a socket cover plate. The socket plate can prevent fingers from accidentally contacting the charged conductor (IP2X), and the phase sequence of conductors is marked on the socket plate. The cover plate of the socket can prevent the contamination of the conductive contact surface, and the liner can be used to prevent dust or moisture.
The standard length is 3000mm or 4000mm, the minimum length is 1000mm, the minimum size of L1 is 400 mm, and the minimum size of L2 is 610 mm.

连接器 Connector

XLC/A母线槽系统采用带有双头力矩剪切螺栓的专用连接器，当达到正确的力矩值时，顶部螺栓头将断开，确保了接头连接紧固可靠。
为了连接方便，连接器提供了±4mm的调整距离，连接盖板防止了连接器的过度调整，只有当连接盖板被拆下时，连接器才被允许作最大的调整。可在完全不防碍邻近母线槽的前提下安全拆下连接器，实现对一段母线槽进行维护或者将一段母线槽拆下。

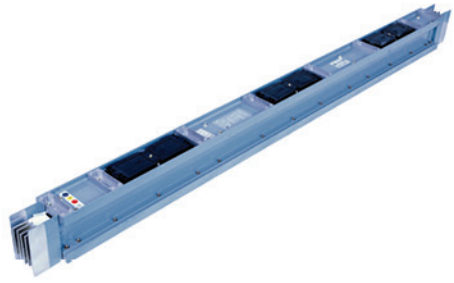


图10-2

XLC/A bus channel system adopts special connector with double-head moment shearing bolt. When the correct moment value is reached, the top bolt head will be disconnected, which ensures the fastening and reliability of the joint.
In order to connect conveniently, the connector provides an adjustment distance of (+4 mm). The connecting cover prevents the excessive adjustment of the connector. Only when the connecting cover is removed, the connector is allowed to make the maximum adjustment. The connector can be safely removed without hindering the adjacent busbar groove, so as to maintain a section of busbar groove or remove a section of busbar groove.

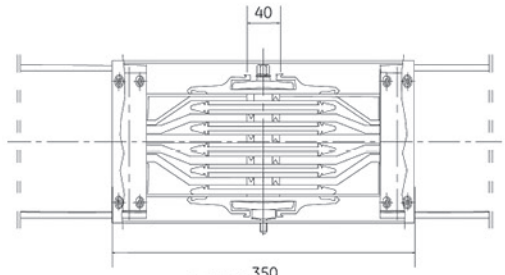


图10-3

功能单元 functional unit

双头力矩剪切螺栓 Double Torque Shear Bolts

当达到正确的力矩值，连接器被拧紧时，顶部螺栓头将断开，红色标签随即脱落；从而方便检查。

* 无需定转矩扳手即可完成初次安装。
* 第一个螺帽掉落后，螺栓仍可以借助定转矩扳手重复使用。
* 标准的紧固力矩为68N·m。

When the correct moment value is reached and the connector is tightened, the top bolt head will be disconnected and the red label will fall off immediately, thus facilitating inspection.

* The initial installation can be completed without a fixed torque wrench.
* When the first nut falls behind, the bolt can still be reused with the help of a fixed torque wrench.
* The standard tightening moment is 68N.m.

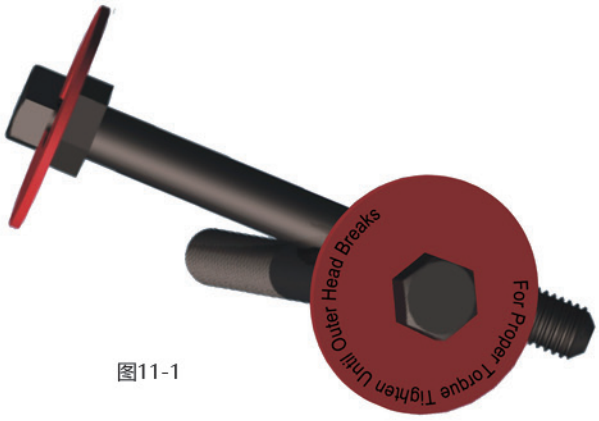


图11-1

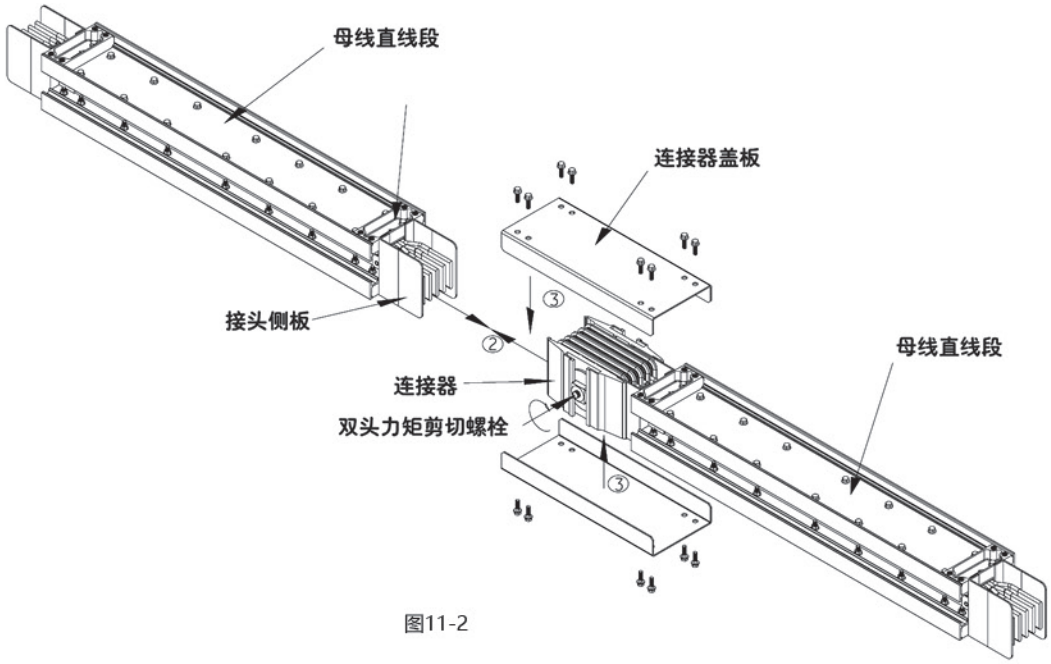


图11-2

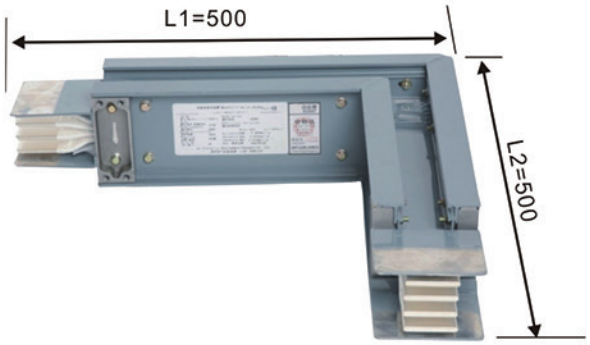
功能单元 functional unit

弯通 Bend through

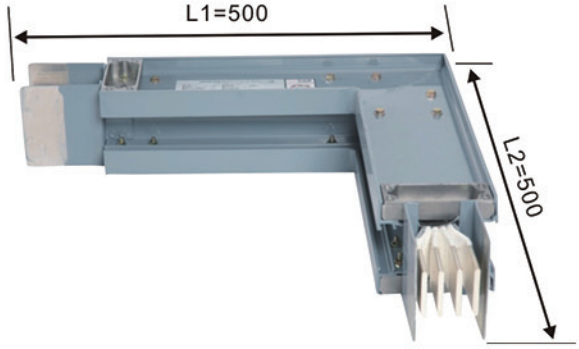
XLC/A母线槽系统提供了完整的弯通单元可以满足所有的布置要求，特殊的弯通，例如非标准角度或尺寸均可以订制。

XLC/A bus channel system provides a complete bending unit to meet all layout requirements. Special bending, such as non-standard angle or size, can be customized.

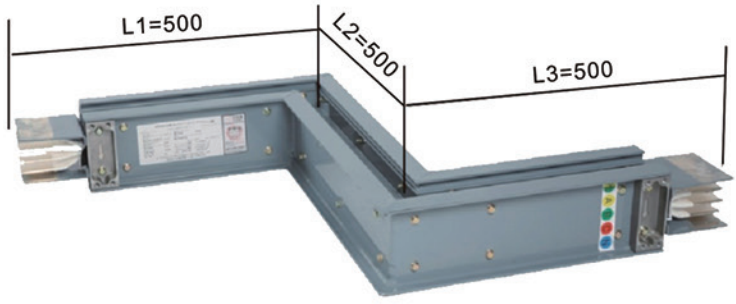
L型垂直弯通
L-type vertical bending



L型水平弯通
L-shaped horizontal bending

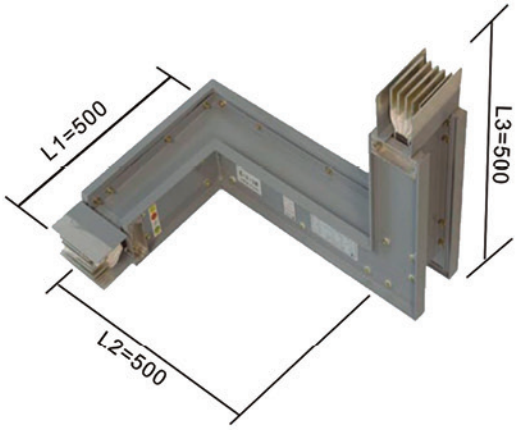


Z型垂直双弯通
Z-type vertical double bend

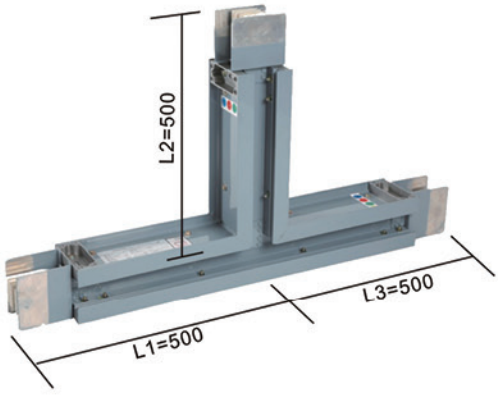


功能单元 functional unit

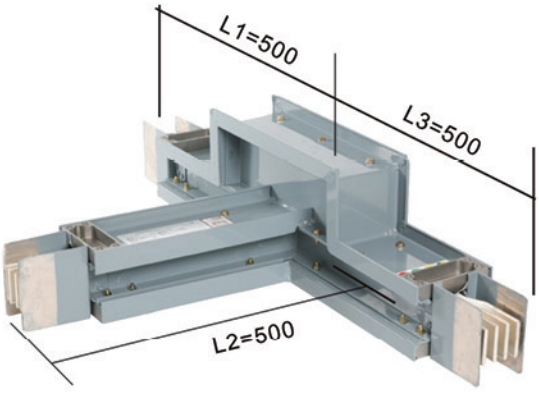
组合弯通
Combined bending



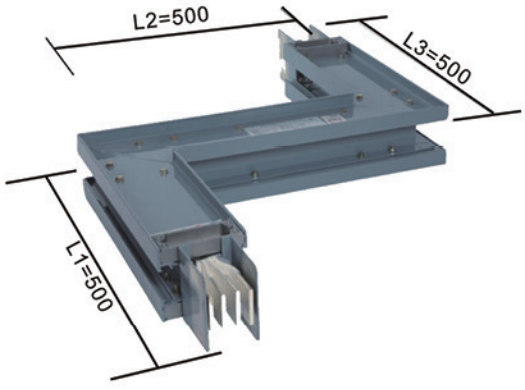
T型垂直弯通
T-type vertical bending



T型水平弯通
T-type horizontal bending



T型垂直弯通
T-type vertical bending



功能单元 functional unit

始端母线 Initial busbar

始端母线与始端箱可以与任何型号的开关柜、变压器进行配套，用户也可以根据需要自行确定始端母线的相间距。

The starting bus and the starting box can be matched with any type of switchgear and transformer, and users can also determine the phase spacing of the starting bus according to their needs.

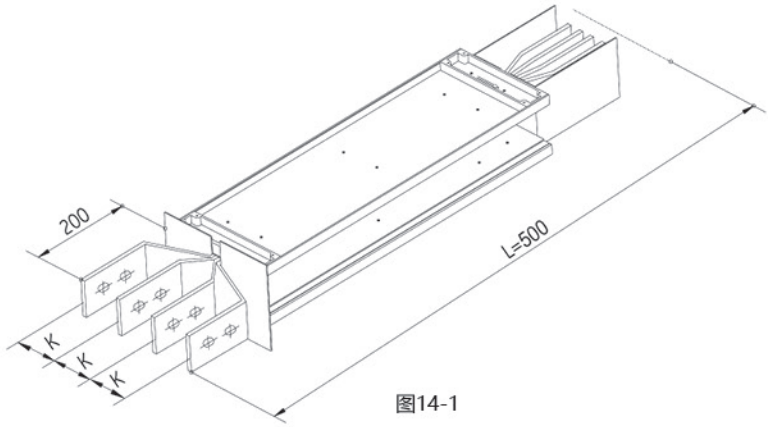


图14-1

注：1. 对于标准的始端母线，当母线电流≤1600A时，K=100mm。当母线电流≥1600A时，K=120mm。

2. 所有数据均为标准的产品，如有订制需要，请联系我们的工程师。

Note: 1. For standard start-end buses, when the bus current is less than 1600 A, K = 100 mm. When the bus current is greater than 1600 A, K = 120 mm.

2. All data are standard products. If you need customization, please contact our engineer.

始端母线连接参数 Start Bus Connection Parameters

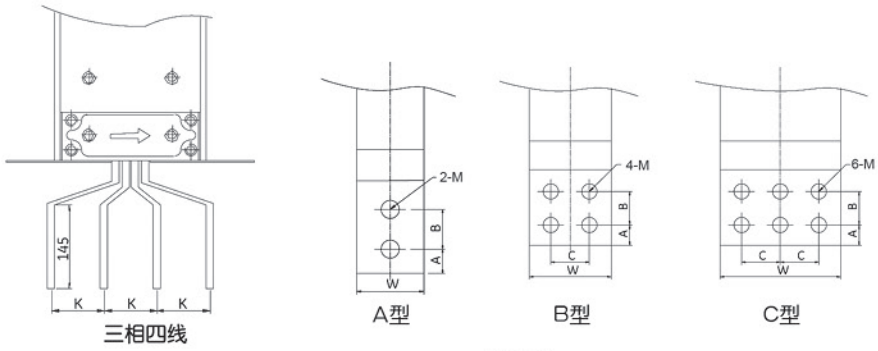


图14-2

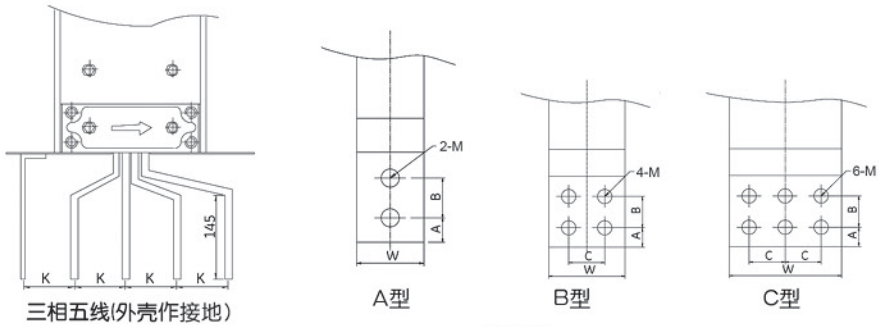
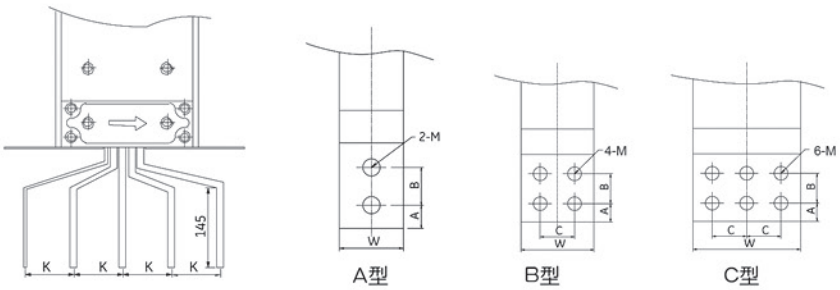


图14-3



三相五线(内部50%接地排)

图15-1

铜母线 Copper busbar 尺寸:mm

额定电流	A	B	C	K	M	类型
100	~	~	~	~	~	~
160	~	~	~	~	~	~
200	~	~	~	~	~	~
250	20	40	~	100	Φ11	A
400	20	40	~	100	Φ11	A
500	~	~	~	~	~	~
630	20	40	~	100	Φ11	A
800	20	40	~	100	Φ11	A
1000	25	50	40	100	Φ13	A
1250	25	50	40	100	Φ13	B
1600	25	50	60	100	Φ17	B
2000	30	60	60	120	Φ17	C
2500	30	60	60	120	Φ17	C
3150	30	60	60	120	Φ17	B
4000	25	50	50	120	Φ17	C
5000	30	60	60	120	Φ17	C
6300	30	60	60	120	Φ17	C

表格form 15-1

铝母线 Aluminum busbar 尺寸:mm

额定电流	A	B	C	K	M	类型
100	20	40	~	100	Φ11	A
160	20	40	~	100	Φ11	A
200	20	40	~	100	Φ11	A
250	20	40	~	100	Φ11	A
400	20	40	~	100	Φ11	A
500	25	50	~	100	Φ13	A
630	25	50	~	100	Φ13	A
800	20	40	40	100	Φ13	B
1000	20	40	40	100	Φ13	B
1250	30	60	60	100	Φ17	B
1600	25	50	50	100	Φ17	C
2000	30	60	60	120	Φ17	C
2500	30	60	60	120	Φ17	C
3150	25	50	50	120	Φ17	C
4000	30	60	60	120	Φ17	C
5000	~	~	~	~	~	~

表格form 15-2

注：电流≥3150A的母线采用并列的双排设计，并且双排均有始端母排开孔。

Note: Buses with current (> 3150A) are designed in parallel with two rows, and both rows have opening at the beginning of the bus.

始端箱 Start box

始端箱用于保护始端母线进线接口，使进线部分裸露母排全部封闭。标准的始端箱尺寸为（500mm×500mm×500mm），并且我们可以根据用户要求，按照现场情况进行测量确定始端箱尺寸。

所有数据均为标准的产品，如有订制需要，请联系我们的工程师。

The start-end box is used to protect the bus line interface of the start-end, so that the bare bus bars are completely closed. The standard size of the start-end box is (500mm * 500mm * 500mm * 500mm), and we can determine the size of the start-end box according to the user's requirements and on-site measurement.

All data are standard products. If you need to order, please contact our engineer.

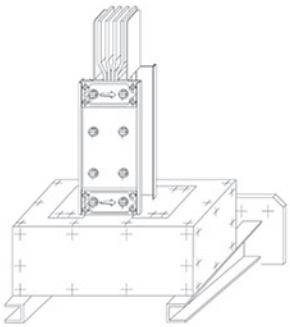


图15-2

终端盖 Terminal cover

终端盖安装于母线（或分支母线）的终端处，使外界不能接触带电部位，从而使整个母线系统全封闭化。

The terminal cover is installed at the terminal of the bus (or branch bus), so that the outside can not contact the live part, thus making the whole bus system completely closed.

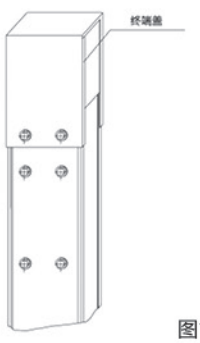


图15-3

功能单元 functional unit

穿墙法兰 Through wall flange

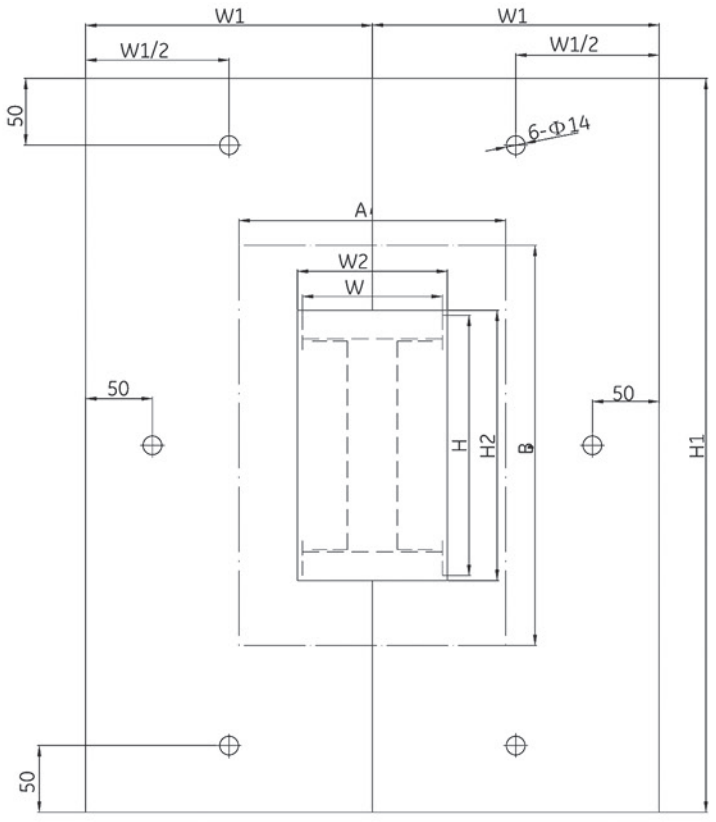


图16-1

注：

1. W和H分别为母线槽的宽度和高度。
2. A和B分别为墙孔的宽度和高度。
3. W1和H1分别为封板外形的宽度和高度。
4. W2和H2分别为封板内孔的宽度和高度。
5. 封板为左右各一半。
6. 墙孔的两侧墙面均设置封板。
7. 封板利用内膨胀螺栓固定于墙面。

Note:

1. W and H are the width and height of busbar slot respectively.
2. A and B are the width and height of the wall holes respectively.
3. W 1 and H 1 are the width and height of the sealing plate shape respectively.
4. W2 and H2 are the width and height of the inner hole of the sealing plate respectively
5. The sealing plate is about half.
6. Seals are arranged on both sides of the wall holes.
7. The sealing plate is fixed on the wall surface with internal expansion bolts.

尺寸:mm

额定电流	母线外部尺寸W×H		开孔尺寸A×B（≥）		法兰门外部尺寸W1×H1（≥）		法兰门外部尺寸W2×H2（≥）	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al
100	~	130×90	~	230×190	~	215×390	~	140×100
160	~	130×90	~	230×190	~	215×390	~	140×100
200	~	130×90	~	230×190	~	215×390	~	140×100
250	130×95	130×90	230×180	230×190	215×380	215×390	140×90	140×100
400	130×105	130×105	230×190	230×200	215×390	215×400	140×100	140×110
500	~	130×115	~	230×210	~	215×410	~	140×120
630	130×110	130×130	230×195	230×220	215×395	215×420	140×105	140×130
800	130×125	130×140	230×205	230×240	215×405	215×440	140×115	140×150
1000	130×140	130×160	230×220	230×255	215×415	215×455	140×125	140×165
1250	130×160	130×190	230×230	230×285	215×430	215×485	140×140	140×195
1600	130×190	130×245	230×260	230×320	215×460	215×520	140×170	140×230
2000	130×220	130×290	230×290	230×360	215×490	215×560	140×200	140×270
2500	130×260	130×455	230×365	230×410	215×565	215×610	140×275	140×320
3150	130×395	130×575	230×442	230×562	215×642	215×762	140×352	140×472
4000	130×485	130×635	230×512	230×692	215×712	215×892	140×422	140×602
5000	130×575	~	230×642	~	215×842	~	140×552	~
6300	130×575	~	~	~	~	~	~	~

表格16-1

功能单元 functional unit

始端箱面板和开孔
Start-end box panel and openings

XLC/A母线槽系统提供了完整的弯通单元可以满足所有的布置要求，特殊的弯通，例如非标准角度或尺寸均可以订制。

XLC/A bus channel system provides a complete bending unit to meet all layout requirements. Special bending, such as non-standard angle or size, can be customized.

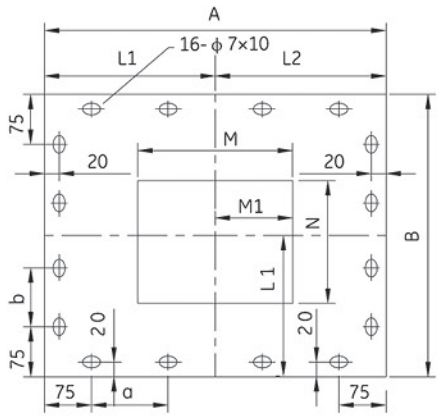


图17-1

铜母线 尺寸:mm

额定电流(A)	M		N
	四线	五线	
100	~	~	~
160	~	~	~
200	~	~	~
250	400	500	120
400	400	500	130
500	~	~	~
630	400	500	135
800	400	500	145
1000	400	500	155
1250	400	500	170
1600	400	500	200
2000	460	580	230
2500	460	580	305
3150	460	580	382
4000	460	580	452
5000	460	580	582

表格form 17-1

铜母线 尺寸:mm

额定电流(A)	M		N
	四线	五线	
100	400	500	130
160	400	500	130
200	400	500	130
250	400	500	120
400	400	500	140
500	400	500	150
630	400	500	160
800	400	500	180
1000	400	500	195
1250	400	500	225
1600	400	500	260
2000	460	580	300
2500	460	580	350
3150	460	580	502
4000	460	580	632
5000	~	~	~

表格form 17-2

注:

1. “A”代表始端箱的长度，“B”代表始端箱的宽度，值的大小由现场实际情况而定。

2. “L1”和“L2”是根据始端法兰的位置而定的，对于标准产品，L1=L2。

3. “M1”是根据始端法兰的位置而定的，对于标准产品，M1=M/2。

4. 如图所示，拐弯处的孔距离始端箱一边75mm，距离另一边20mm，根据实际情况均分剩余的距离并布孔。

5. “a”和“b”为孔中心到中心的间距，其值应界于100到250之间。

Note:

1. "A" represents the length of the starting box and "B" represents the width of the starting box. The size of the value depends on the actual situation on site.

2. "L1" and "L2" are determined by the position of the flange at the beginning. For standard products, L1 = L2.

3. "M1" is determined by the position of the flange at the starting end. For standard products, M1 = M/2.

4. As shown in the figure, the hole at the corner is 75 mm from the side of the box at the beginning and 20 mm from the other side. According to the actual situation, the remaining distance is divided equally and the holes are arranged.

5. "a" and "b" are the spacing between the center of the hole and the center, and their values should be between 100 and 250.

功能单元 functional unit

膨胀母线 Expansion Bus

膨胀母线为补偿母线热胀冷缩的过渡节，通常直线距离每60m设置一处。

Expansion busbar is the transition section of compensating busbar for thermal expansion and cold contraction. Usually the straight line distance is set at one place every 60m.

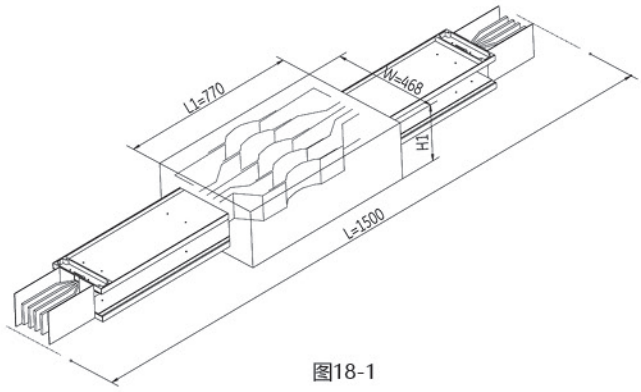


图18-1

注：H1=H+67（H为母线的高度）

Note: H1 = H + 67 (H is bus height)

换相母线 Commutating busbar

换相母线为母线变换相序时的过渡节，其最小尺寸为1500mm。两侧的相序要求需要由客户提供。

The commutation bus is the transition section when the bus transforms the phase sequence, and its minimum size is 1500mm. The phase sequence requirements on both sides need to be provided by customers.

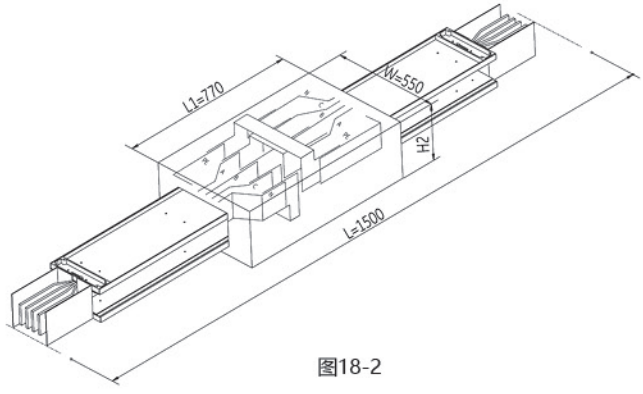


图18-2

注：H2=H+200mm（H为母线的高度）

Note: H1 = H + 200mm (H is bus height)

注：

1. H母线槽高度的数据请参见表9-1。
2. 所有数据均为标准的产品，特殊要求可以订制。

Note:

1. Refer to Table 9-1 for height data of H busbar slot.
2. All data are standard products, special requirements can be customized.

功能单元 functional unit

插接箱 Jack box

XLC/A插接箱将电能从母线槽分配到负载上，并且作为开断分支电流的机构，插接箱是用户使用最为频繁、分支电流保护的关键部位。

XLC/A在设计时充分考虑了用户的要求，提供了内部装断路器或者熔断器进行保护的多种选择。

XLC/A plug-in box distributes electric energy from busbar slot to load, and as a mechanism of breaking branch current, plug-in box is the most frequently used and key part of branch current protection for users.

XLC/A fully considers the user's requirements in design, and provides a variety of options for internal circuit breaker or fuse protection.

带断路器的插接箱 Plug box with circuit breaker

—采用断路器保护标准，标准电流为16A~630A。

—可在插接箱内安装3极或4极断路器对负载进行保护，

—可选配断路器的附件，如操作手柄、分励脱扣和漏电保护模块等。

The standard current of circuit breaker protection is 16A~630A.

3-pole or 4-pole circuit breakers can be installed in the socket box to protect the load.

Optional accessories for circuit breakers, such as operating handles, shunt tripping and leakage protection modules.

带断路器的插接箱 Plug-in box with circuit breaker

带熔断器的插接箱根据客户提供的规格制作。

—独特的防错相插接：插接箱上带自制的定位装置，可以有效地预防错相插接。

—插脚：所有插脚均镀银处理，以提高导电能力。

The socket box with fuse is made according to the specifications provided by customers.

Unique anti-misalignment interpolation: The self-made positioning device on the socket box can effectively prevent misalignment interpolation.

Pins: All pins are silver plated to improve conductivity.

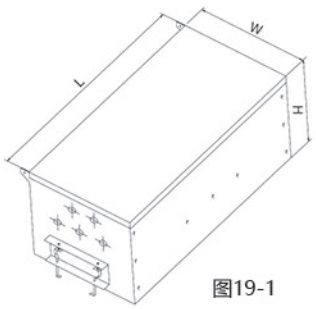


图19-1

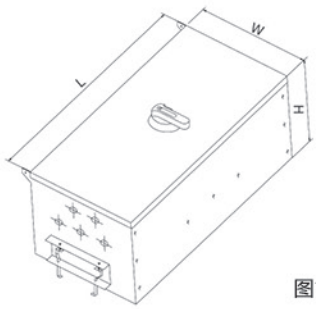


图19-2

插接箱外形尺寸 Contour dimension of socket box （L×W×H）mm

* 非标尺寸和大电流等级的插接箱请与厂商联系

* Contact the manufacturer for connectors of non-standard size and high current level

操作方式 Operation mode	电流等级 Current level （A）	插接箱尺寸 Plug box size(L×W×H)mm
手动操作 Manual operation	100	450×240×260
	160~250	550×260×260
	400	650×300×300
	630	750×340×320
	800	950×370×340
旋转式操作机构 Rotary operating mechanism	100	450×240×(300+70)
	160~250	550×260×(320+70)
	400	650×300×(340+70)
	630	750×340×(360+70)
	800	950×370×(360+70)

表格form 19-1

注：1. 表19-1尺寸是根据常规3p/4p断路器尺寸确定的，附加的70mm是考虑旋转手柄的安装空间。

2. 所有数据均为标准的产品，特殊要求可以订制。

Note: 1. Table 19-1 is based on the size of conventional 3p/4p circuit breaker. Additional 70mm is the installation space of rotating handle.

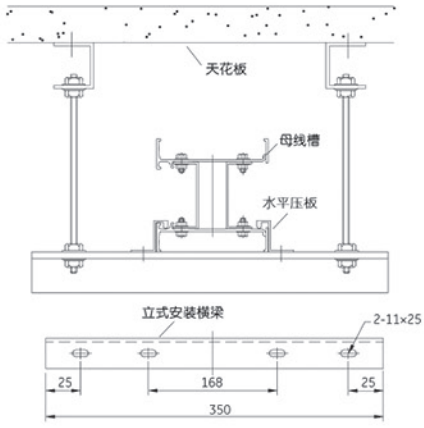
2. All data are standard products, special requirements can be customized.

安装附件 Installation accessories

立式安装压板和立式安装横梁 Vertical Installation Plate and Vertical Installation Beam

当母线槽立式安装时需要使用立式安装压板，它适用于所有电流等级的母线槽。

Vertical mounting pressure plate is needed for vertical installation of busbar groove, which is suitable for busbar grooves of all current levels.



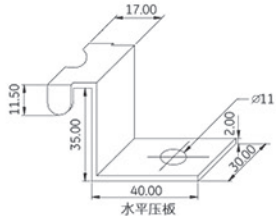
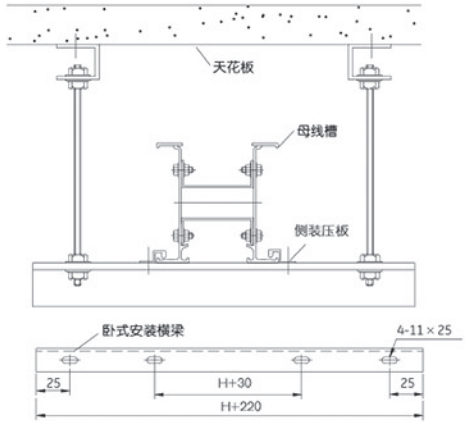


图20-1

卧式安装压板和卧式安装横梁
Horizontal Installation Pressure Plate and Horizontal Installation Beam

当母线槽卧式安装时需使用卧式安装压板。它适用于所有电流等级的母线槽。卧式安装横梁的尺寸与电流安培等级有关。

Horizontal installation pressure plate should be used when busbar slot is installed horizontally. It is suitable for busbar slots of all current levels. The size of the horizontal mounting beam is related to the ampere level of the current.



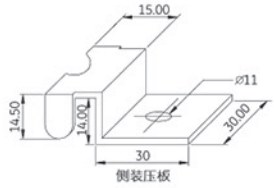


图20-2

注:

1. 所有的尺寸单位都是mm。
2. 提供均为标准产品的尺寸。产品尺寸若需定制请联系我们的工程师。
3. 水平压板和侧装压板由工厂提供。

Note:

1. All size units are mm.
2. Dimensions of standard products are provided. If you need to customize the product size, please contact our engineer.
3. Horizontal and side-mounted presses are provided by factories.

安装附件 Installation accessories

中间固定支架 Intermediate fixing bracket

当母线槽垂直安装于超过3.5m高度的楼层内的时候使用中间固定支架。中间固定支架安装在两层楼之间的墙上，以防止母线槽水平方向的移动，适用于所有电流等级的母线槽。

Intermediate fixing brackets are used when busbar slots are installed vertically in floors over 3.5m height. The middle fixing bracket is installed on the wall between the two floors to prevent the horizontal movement of the bus channel. It is suitable for all current levels of the bus channel.

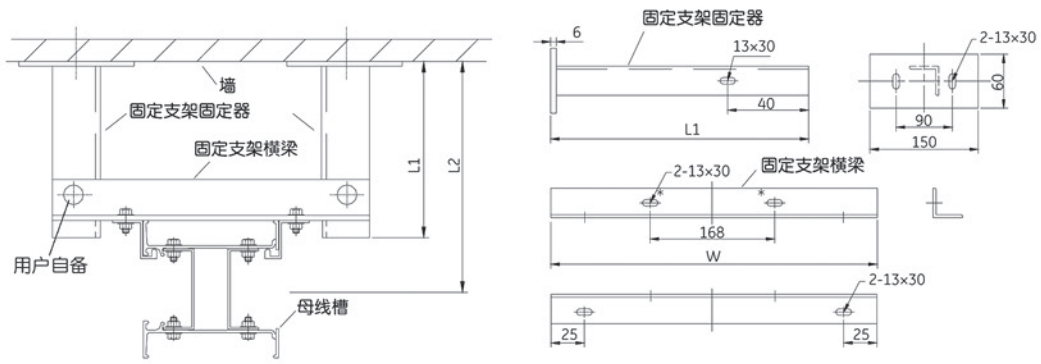


图21-1

注:

1. L1和L2基于不同的工程而定制，其余的尺寸用于标准产品。

Note:

1. L 1 and L2 are customized for different projects, and the remaining dimensions are used for standard products.

安装附件 Installation accessories

弹簧支架 Spring bracket

弹簧支架在每层均需使用，用来支撑垂直安装的母线槽在该层的重量。

弹簧支架与母线槽之间通过螺栓连接。

根据母线槽电流安培等级的不同，弹簧支架的数量也不同。请参照表22-1

Spring brackets are used on each floor to support the weight of vertically mounted busbar slots in that layer.

The spring bracket is bolted to the busbar groove.

The number of spring brackets varies according to the ampere level of busbar current. Refer to Table 22-1.

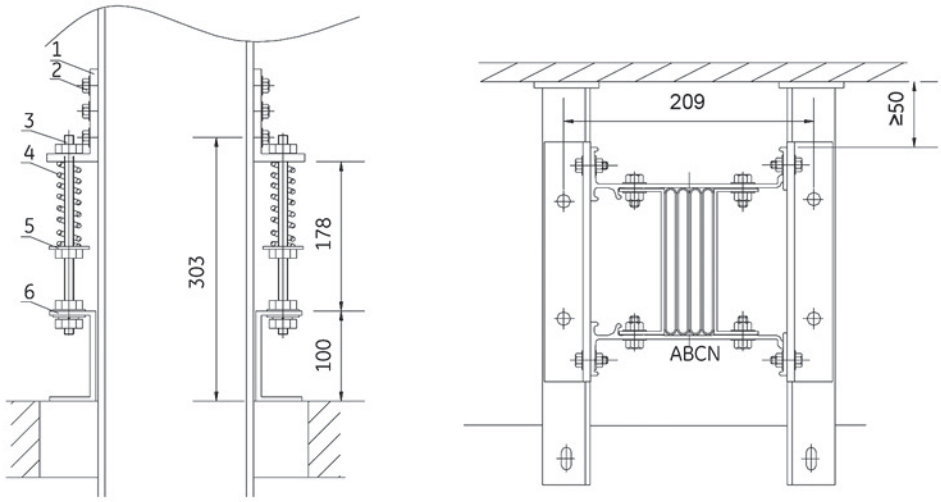


图22-1

附件：	Enclosure:
1. 弹簧支架	1. Spring bracket
2. 六角螺栓	2. Hexagonal bolts
3. 双头螺栓	3. Double-headed bolts
4. 弹簧	4. spring
5. 垫片	5. gaskets
6. 槽钢底座(用户自备)	6. Channel steel base (user-provided)

表22-1

电流等级 Current level	弹簧数量 Spring quantity
250-800	2
1000-2500	4
3150-5000	6

注：

1. 所有的尺寸单位是mm
2. 所有的尺寸都是为标准产品提供的，订制产品的相关尺寸请联系我们的工程师。

Note:

1. All size units are mm.
2. All sizes are provided for standard products. Please contact our engineer for the relevant sizes of customized products.

应用 Application

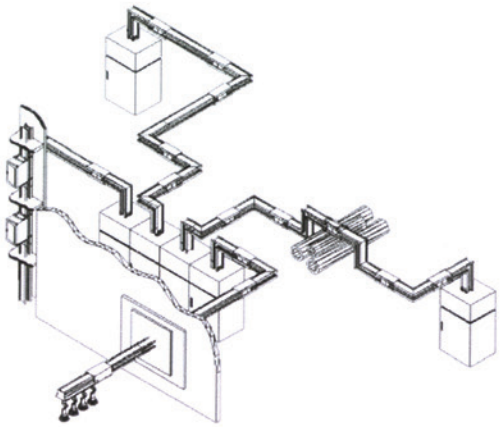
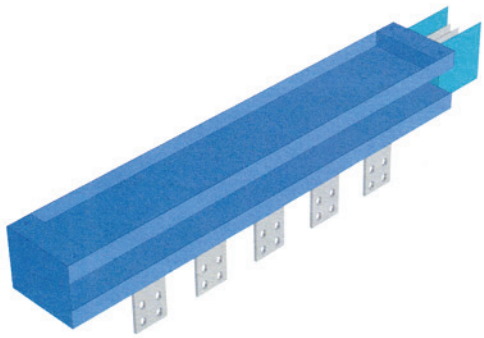


图23-1



变压器连接装置，用于便捷地与变压器连接

Transformer Connector for Convenient Connection with Transformer

图23-2

与变压器的连接
Connection with transformer

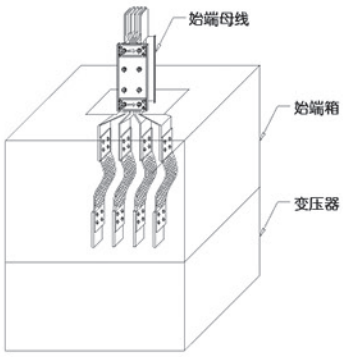


图23-3

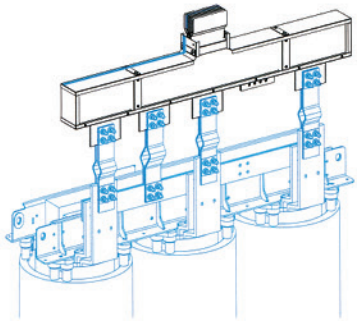


图23-4

与低压配电柜的连接
Connection with Low Voltage Distribution Cabinet

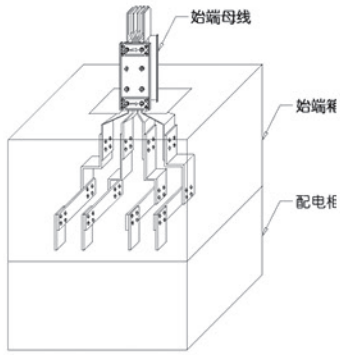


图23-5

安装 Installation

安装所需的最小距离 Minimum distance required for installation

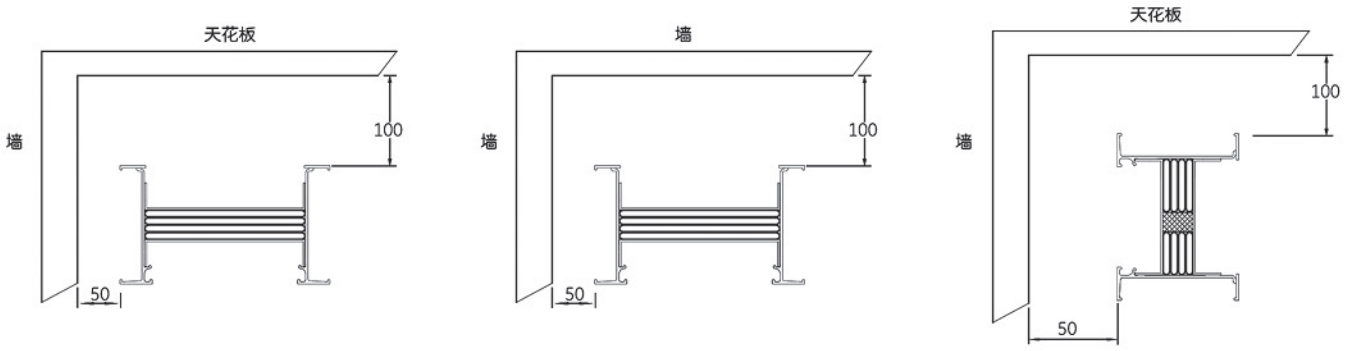
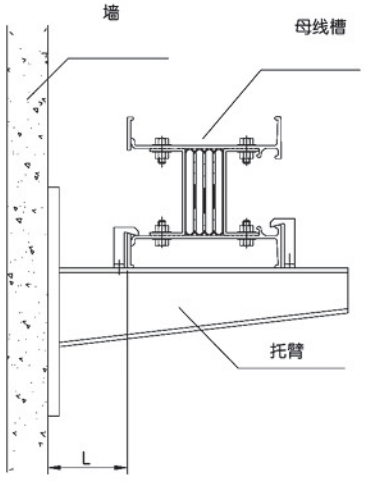


图24-1

为安装插接箱预留的最小距离 Minimum distance reserved for installation of socket box

当母线槽靠近墙水平或者垂直安装时，必须为安装插接箱预留一定尺寸。请参照表24-1

When the busbar slot is installed horizontally or vertically near the wall, a certain size must be reserved for the installation of the socket box. Refer to Table 24-1.



立式安装 Vertical installation

图24-2

母线槽带插接箱时的预留最小距离 Minimum distance reserved for busbar slot with socket box

插接箱电流等级（A） Current Class of Plug Box	100	250	400	630	800	1000
L(mm)	150	195	210	230	260	300

表格form 24-1

水平安装 Horizontal installation

1.水平穿墙安装 Horizontal Wall Installation

水平穿墙安装预留孔尺寸见下图:

The dimension of reserved holes for horizontal wall-piercing installation is shown in the following figure:

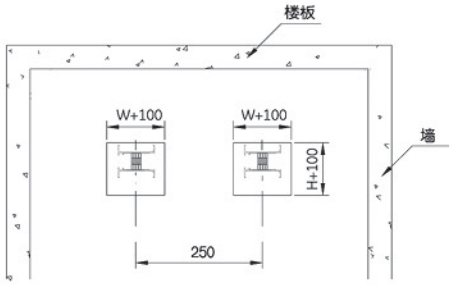


图25-1

2.水平吊顶安装 Horizontal ceiling installation

母线吊顶安装时，应预先在楼板上打孔镶入钢制膨胀螺栓（也可以现场打孔，以便灵活安装）或预埋钢制件现场焊接吊装支架，相邻吊架间的距离设置一般不应超过2m，如有特殊要求请订货时说明。

母线水平吊装时有两种不同形式，见下图:

When busbar ceiling is installed, steel expansion bolts (or on-site drilling for flexible installation) or welded lifting brackets with embedded steel parts should be inserted into the floor in advance. The distance between adjacent hangers should not exceed 2 m in general. If there are special requirements, please specify when ordering.

There are two different forms of bus horizontal hoisting, as shown in the following figure:

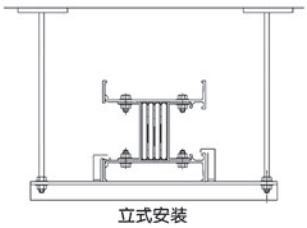


图25-2

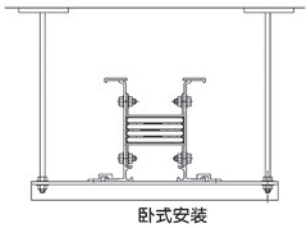


图25-3

3.水平沿墙安装 Horizontal wall mounting

请注意安装孔的直线性（即整列支架安装在一水平面内）。安装型式参照图示。

水平沿墙安装也有立式和卧式两种。

Please pay attention to the linearity of the mounting holes (that is, the whole row of brackets are installed in a horizontal plane). Installation type is shown with reference to Fig.

There are also vertical and horizontal installations along the horizontal wall.

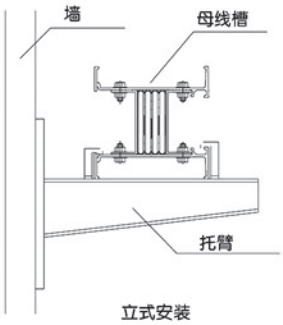


图25-4

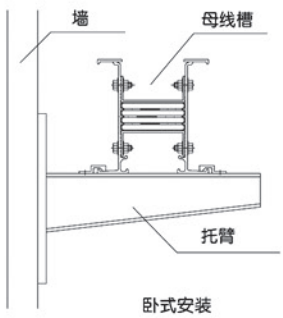


图25-5

垂直安装 Vertical installation

垂直穿越楼层安装的母线预留孔尺寸见图，如为两列或两列以上母线穿越时，则应保证每两列母线的间距不小于350mm。

The dimension of reserved busbar holes installed vertically through the floor is shown in the figure. If two or more buses are crossed, the spacing between each two buses should be ensured not less than 350 mm.

见下图 See figure below:

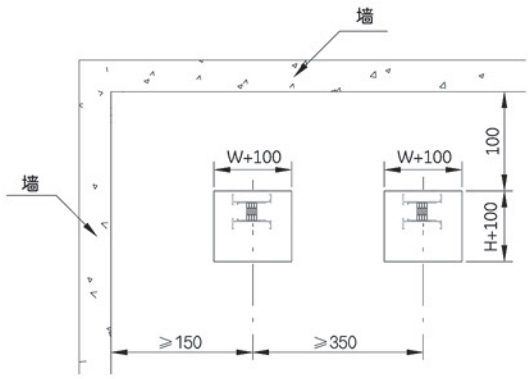


图26-1

1. 弹簧支架的主要安装方式如下:
   The main installation methods of spring bracket are as follows:

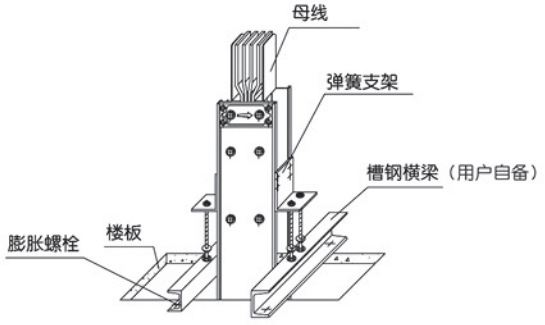


图26-2

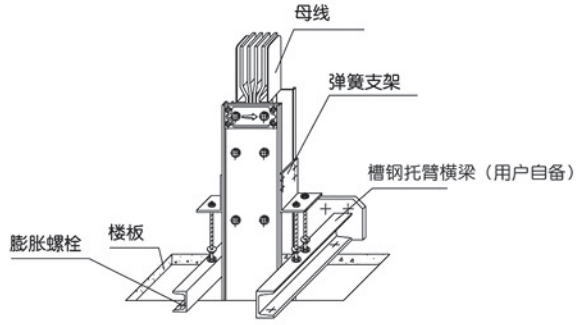
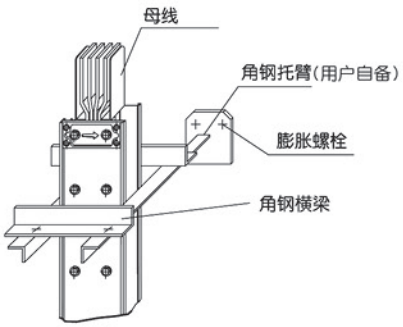


图26-3

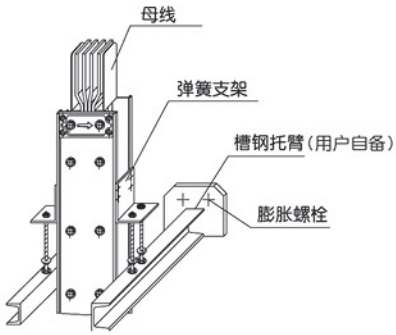
2. 安装在竖井里的母线槽应在中间部位对其加固（一般来说，当相邻两层的距离超过3.5米时或者由于客户有特殊要求时）。角钢和弹簧支架是两种可选的方案：

Bus bar grooves installed in the shaft should be reinforced in the middle part (generally speaking, when the distance between adjacent two floors exceeds 3.5 meters or due to special requirements of customers). Angle steel and spring bracket are two options:



采用角钢的方案

图27-1

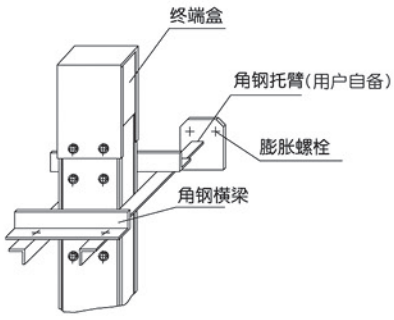


采用弹簧支架的方案

图27-2

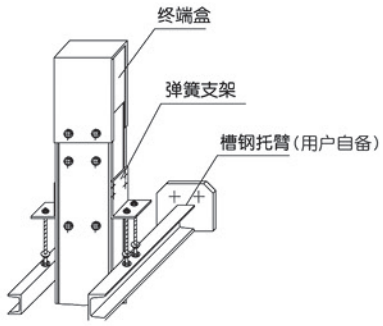
3. 母线槽的终端也要进行加固，如下图所示：

Bus bar groove terminals should also be strengthened, as shown in the following figure:



采用角钢的方案

图27-3

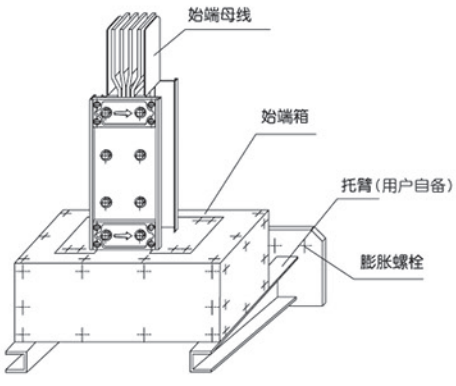


采用弹簧支架的方案

图27-4

4. 始端箱的加固可以通过以下方法来完成：

The reinforcement of the start-end box can be accomplished by the following methods:



采用托臂

图27-5

选用须知及订单 Selection instructions and orders

选用须知 Selection notes

下列资料需要在建筑安装图、母线走向图纸上标明:
The following information should be marked on the building installation drawings and bus line drawings:

* 母线槽的型号、额定电流和使用的电压等级;
* 母线槽是插入式还是馈入式;
* 使用电源的性质及防护等级;
* 母线槽安装方式,所有附件的安装位置和限制的尺寸;
* 母线槽的电源连接方式;
* 母线槽及附件的表面处理方式和颜色;
* 插接箱内元件名称、型号、规格和数量。

* The type of bus bar, rated current and voltage grade used;
* Bus bar slot is insertion type or feeding type.
* The nature and protection level of power supply;
* Busbar slot installation mode, installation position and limited size of all accessories;
* Power connection mode of busbar slot;
* Surface treatment and color of busbar groove and accessories;
* Name, model, specification and quantity of components in the socket box.

订货单 Order form

项　目	具体内容	
导体类型	□铜导体　□铝导体	
额定容量	□100A □160A □200A □250A □400A □500A □630A □800A □1000A □1250A □1600A □2000A □2500A □3150A □4000A □5000A □6300A	
相数和线制	□3P3W L1,L2,L3　□3P4W L1,L2,L3,PEN100% □3P5W L1,L2,L3N100%PE50%　□3P5W L1,L2,L3N100%PE100% □3P5W L1,L2,L3N200%PE50%　□3P5W L1,L2,L3N200%PE100% □外壳做50%的接地(当外壳做50%接地时，此项须注明)	
相　序	□选择1 □选择2 □选择3 □选择4 □选择5 □选择6 □选择7 □选择8 □其它	
频　率	□50Hz　□60Hz	
电　压	□400V　□690V	
防护等级	□IP40　□IP42　□IP54　□IP65　□其他	
颜　色	□RAL7000　□RAL7032　□其他	
产品型号	□插入式母线槽数量___米　□馈入式母线槽数量___米	
插接口数量	□1　□2　□3　□4　□One side　□Both side	
附　件	□L型垂直弯(N相内侧)数量___个　□L型垂直弯(N相外侧)数量___个	
	□L型垂直弯(N相上侧)数量___个　□L型垂直弯(N相下侧)数量___个	
	□T型垂直弯(N相内侧)数量___个　□T型垂直弯(N相外侧)数量___个	
	□T型垂直弯(N相上侧)数量___个　□T型垂直弯(N相下侧)数量___个	
	□终端数量___个　□始端母线数量___个	
	□变容母线数量___个　□膨胀母线数量___个　□换相母线数量___个	
插接箱	□隔离开关+保险丝　□MCCB　□旋转式手柄操作　□转动曲柄式操作	
	额定电流	__A__只　__A__只　__A__只　__A__只　__A__只　__A__只
		__A__只　__A__只　__A__只　__A__只　__A__只　__A__只
	短路电流	
支　架	□水平____个　□垂直____个	
交货日期		
运输方式		
目的地地址		
联系人		
联系方式		
特殊要求		
联系方式		

表格form 28-1

母线槽相位序列 Busbar slot phase sequence

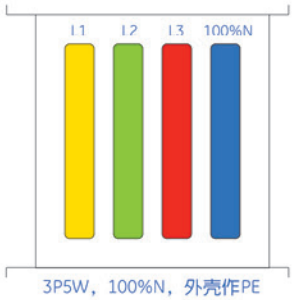
选择1

3P3W

选择2

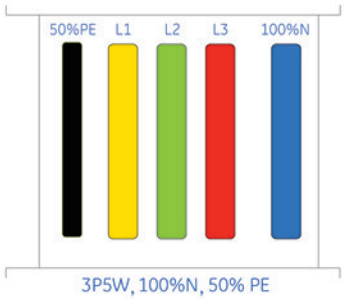
3P4W

选择3



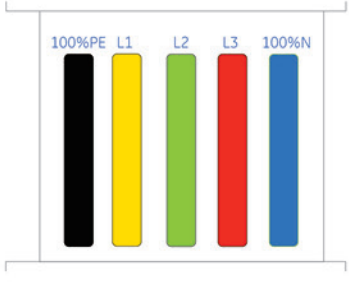
3P5W，100%N，外壳作PE

选择4



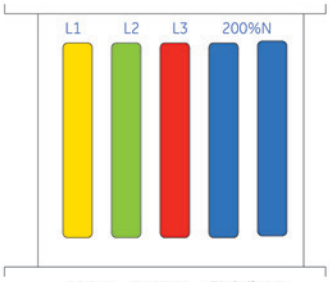
3P5W, 100%N, 50% PE

选择5



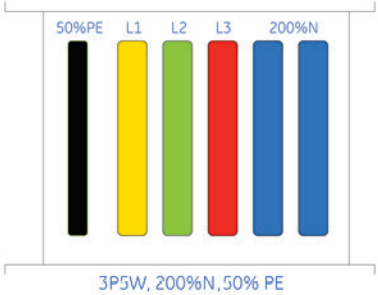
3P5W, 100%N，100% PE

选择6



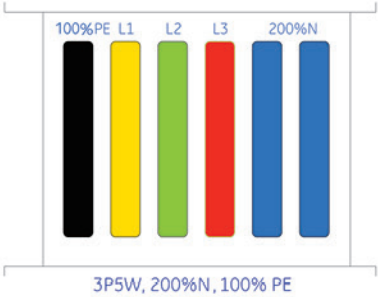
3P5W，200%N，外壳作PE

选择7



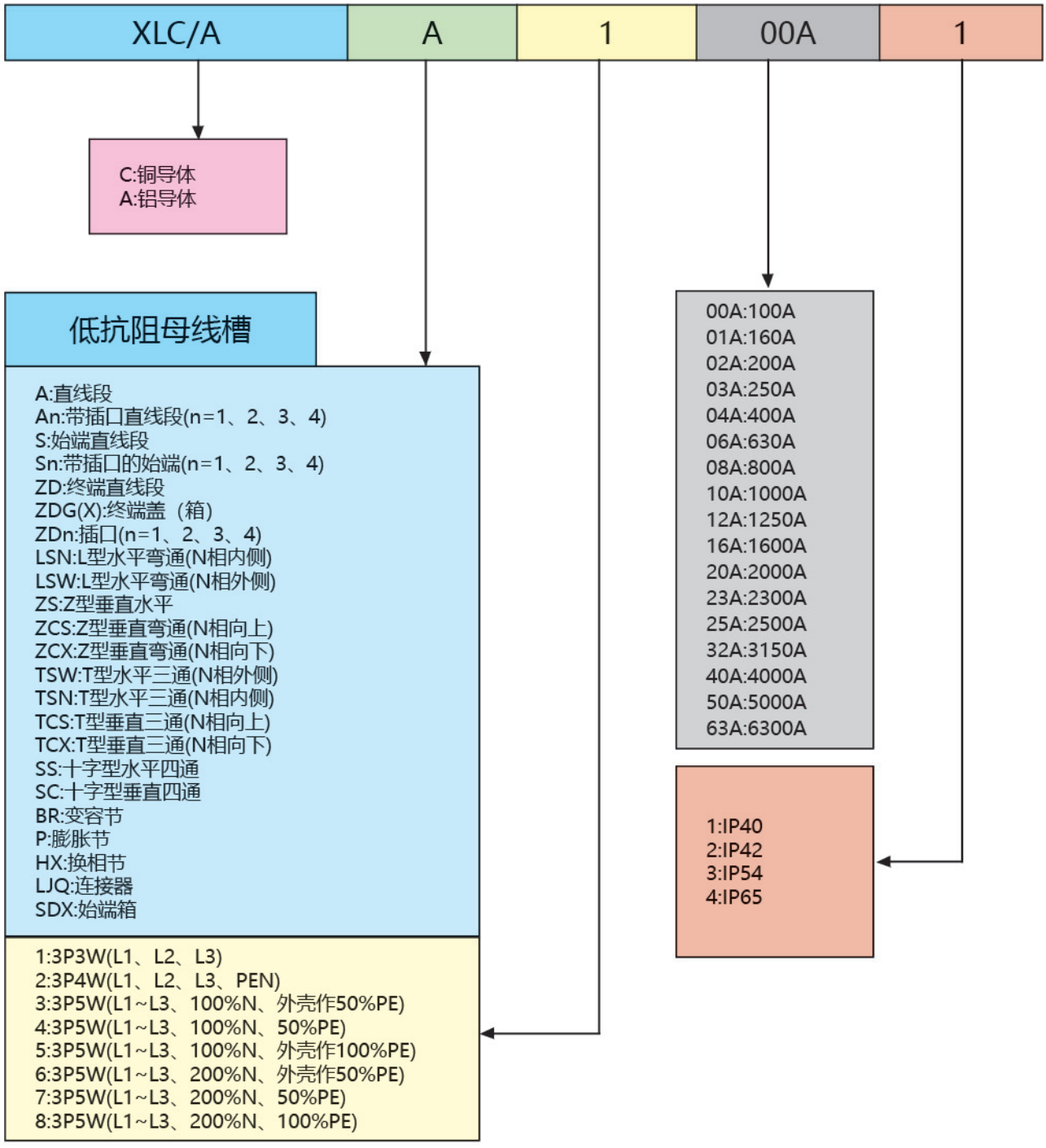
3P5W, 200%N, 50% PE

选择8



3P5W, 200%N, 100% PE

XLC/A系列母线槽编码系统 XLC/A Series Bus Channel Coding System

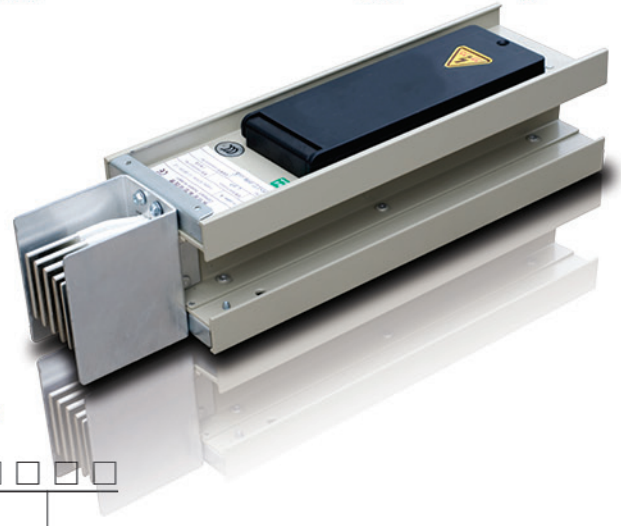


XLC/A系列插接箱编码系统 XLC/A Series Plug Box Coding System

CJX	R	D	3P	10	40
插接箱	R不带手柄操作机构 Z带手柄操作机构 P带电操作机构	D:内装断路器 DF:断路器带分励脱扣 FU:内装铬断路器 W:不带任何开关和保险 OT:其他	3P:3极开关 无线性引出P:3极开关 无线性引出 3N:3极开关 引出固定中性 4P:4极开关	10:额定电流输至100A 16:额定电流输至160A 20:额定电流输至200A 25:额定电流输至250A 32:额定电流输至320A 40:额定电流输至400A 63:额定电流输至630A 80:额定电流输至800A	40:IP40 42:IP42 54:IP54 65:IP65

A	C	DG	00A
附件	C:连接附件 T:安装附件	DG:吊杆 LZJ5:立柱(5#角钢) LC8:立柱(8#角钢) HJ5:横梁(5#角钢) HC8:横梁(8#角钢) TB1:水平沿墙安装托臂 TB2:竖井安装角钢托臂 TZ:弹簧支架 SY:水平压板 RLJ:软连接 GDP:过渡排 LJG:连接盖板 OT:其他	00A:100A 01A:160A 02A:200A 03A:250A 04A:400A 06A:630A 08A:800A 10A:1000A 12A:1250A 16A:1600A 20A:2000A 25A:2500A 32A:3150A 40A:4000A 50A:5000A

C□LJ新型节能母线槽 C□LJ New Energy-saving Busbar



产品选型 Product selection

C □ L J - □□□□

- 额定电流 Rated current
- 节能 Energy conservation
- 铝合金外壳 Aluminum alloy shell
- 结构形式：M密集绝缘型 K空气绝缘型 F风电型 — Structural form: M-intensive insulation type K Air Insulation Type F wind power type
- 母线槽 Busbar

用途 purpose

C□ L J 新型节能母线槽是天津电气传动设计研究所、中国电器工业协会电控配电分会组织了全国五十多家母线槽骨干生产企业联合设计的新产品，采用铜铝复合排做导体，既降低了成本，又实现了节能的目标，是当前性价比最高的母线槽。结构型式分为密集型、空气型、风电型，交流三相五线制,额定工作电压400V，690V；频率50（60）Hz；额定电流至7200A。主要适用于化工、冶金、工矿企业和文化体育场馆、展览馆、档案馆、博物馆、机场、车站、商厦等社会公共场所和高层建筑及风力发电的输配电供电系统。

C□ L J new energy-saving busbar groove is a new product jointly designed by Tianjin Electric Drive Design Institute and China Electrical Appliance Industry Association Electrical Control and Distribution Branch. More than 50 key busbar groove manufacturers in China have jointly adopted copper-aluminium composite busbar as conductor, which not only reduces the cost, but also achieves the goal of energy saving. It is the busbar groove with the highest performance-price ratio at present. The structure type is divided into dense type, air type, wind power type, AC three-phase five-wire system, rated working voltage 400V, 690V; frequency 50 (60) Hz; rated current to 7200A. Mainly applicable to chemical, metallurgical, industrial and mining enterprises and cultural and sports venues, exhibition halls, archives, museums, airports, stations, commercial buildings and other social public places and high-rise buildings and wind power transmission and distribution power supply system.

使用条件 Conditions of use

正常使用条件 Normal conditions of use

周围空气温度 Ambient air temperature

周围空气温度的上限为+40 ℃,24小时内其平均温度不得超过+35℃, 周围空气温度的下限为-5 ℃（风电母线槽下限为-40℃）。

The upper limit of ambient air temperature is + 40 C, the average temperature should not exceed + 35 C in 24 hours, and the lower limit of ambient air temperature is - 5 C (the lower limit of wind power bus channel is - 40 C).

大气条件

安装地点的空气相对湿度在最高温度为40℃时不超过50%,在较低的温度下可允许有较高相对湿度,最湿月的平均最低温度不超过+25℃,该月的平均最大相对湿度不超过90%,由于湿度变化发生在产品上的凝露情况要给予注意。对于风电型母线槽，最高温度为+25℃时，相对湿度短时可达100%。

海拔高度：安装场地的海拔高度不超过2000m。

污染等级：污染等级为3级。

特殊使用条件

当存在下述任一特殊情况时，用户应与制造厂协商解决；

- 与1.2.1规定的温度、湿度、海拔高度不相同的情况；
- 在使用中，温度或气压急剧变化，以致在装置内易出现异常的凝露；
- 空气被尘埃、烟雾、腐蚀性微粒、放射性微粒、蒸汽或烟雾严重污染；
- 暴露在强电场或强磁场中；
- 暴露在高温中，例如太阳的直射或火炉的烘烤；
- 受霉菌或微生物侵蚀；
- 安装在有火灾或爆炸危险的场所；
- 遭受强烈振动或冲击；
- 安装在会使载流容量和分断能力受到影响的地方，例如：将设备安装在机器中或嵌入墙内；
- 为解决电磁辐射的干扰而采取的适当措施

Atmospheric condition

The relative humidity of the air at the installation site does not exceed 50% at the highest temperature of 40 C. Higher relative humidity can be allowed at lower temperatures. The average minimum temperature of the wettest month does not exceed + 25 C. The average maximum relative humidity of the month does not exceed 90%. Attention should be paid to the condensation of products due to humidity changes. For wind power busbar, the relative humidity can reach 100% in a short time when the maximum temperature is + 25 C.

Elevation: The elevation of the installation site shall not exceed 2000m.

Pollution Level: Pollution Level is 3.

Special conditions of use

When any of the following special circumstances exist, the user shall negotiate with the manufacturer to solve them.

- Different conditions of temperature, humidity and altitude as stipulated in 1.2.1;
- In use, the temperature or air pressure changes sharply, so that abnormal condensation can easily occur in the device.
- Air is seriously polluted by dust, smoke, corrosive particles, radioactive particles, steam or smoke.
- Exposure to strong electric or magnetic fields;
- Exposure to high temperatures, such as direct sunlight or oven baking;
- Corroded by mould or microorganism;
- Installed in places with fire or explosion hazards;
- Strong vibration or shock;
- Installation where current carrying capacity and breaking capacity will be affected, e.g. installing the equipment in the machine or embedded in the wall;
- Appropriate measures taken to solve the interference of electromagnetic radiation

主要规格 Main specifications

母线槽额定电流见表1

The rated current of busbar groove is shown in Table 1.

表1 额定电流值 (方均根值) 单位: A

Table 1 Rated Current Value (RMS) Units: A

密集型 Intensive type	400，630，800，1000，1250，1600，2000，2500，3150，4000，5000，6300，7200
空气绝缘型 Air-insulated type	400，630，800，1000，1250，1600，2000。
风电型 Wind power type	630，800，1000，1250，1350，1600。

功能单元名称及功能单元代号见表2

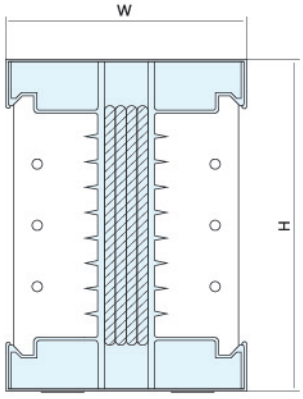
The names and codes of functional units are shown in Table 2.

表2

功能单元名称 Functional unit name	代号 Code name	功能单元名称 Functional unit name	代号 Code name
直线段单元 Linear segment element	ZX	接头单元 Joint unit	JT
始端单元 Initial unit	SD	T型垂直单元 T-type vertical element	TC
L型水平单元 L-type horizontal element	LS	Z型水平单元 Z-type horizontal element	ZS
L型垂直单元 L-type vertical element	LC	Z型垂直单元 Z-type vertical element	ZC
插接箱 Jack box	CX	伸缩单元 Expansion unit	SS

母线干线单元外形尺寸见图1、图2、图3和表3

The outline dimensions of bus trunk elements are shown in Fig. 1, Fig. 2, Fig. 3 and Fig. 3.



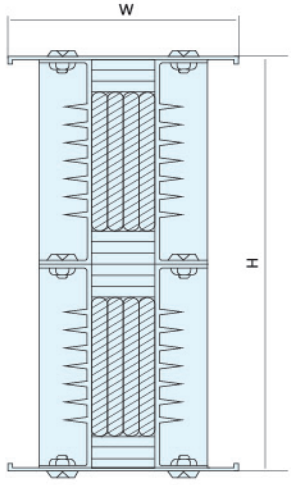


图1　密集型 Intensive type

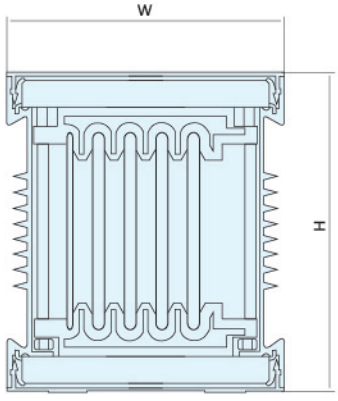


图2　空气型 Air type

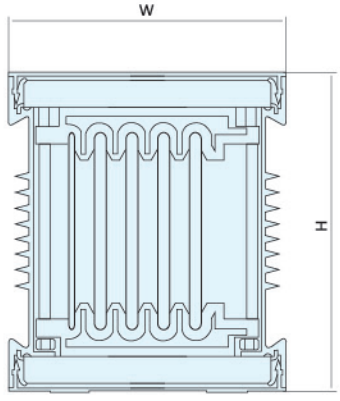


图3　风电型 Wind power type

表3

额定电流 Rated current	密集型 Intensive type		空气型 Air type		风电型 Wind power type	
A	W	H	W	H	W	H
400	152	113	166	114	/	/
630	160	113	166	114	166	114
800	160	123	166	124	166	124
1000	160	163	166	164	166	164
1250	160	188	166	204	166	204
1350	/	/	/	/	166	224
1600	160	223	166	264	166	264
2000	160	263	178	264	/	/
2500	169	263	/	/	/	/
2500	128	373	/	/	/	/
3150	128	373	/	/	/	/
4000	128	443	/	/	/	/
5000	128	524	/	/	/	/
6300	147	524	/	/	/	/
7200	147	784	/	/	/	/

分接单元 Tapping unit

自动空气开关脱扣电流的选用见表4

Selection of tripping current of automatic air switch is shown in Table 4

表4

分线箱额定电流(A) Distribution box rated current	自动空气开关脱扣额定电流 Ie Automatic Air Switch Release Rated Current
100	16、20、25、32、40、50、63、80、100
250	100、125、160、200、225、250
400	200、250、315、400

主要技术参数 Main technical parameters

额定电流(见表1)

电阻、电抗和阻抗见表6-1，6-2，6-3

绝缘电阻

母线槽各相之间及各相导体与接地端子之间的绝缘电阻应不小于20MΩ/每单元。

Rated current (see Table 1)

Resistance, reactance and impedance are shown in Table 6-1, 6-2, 6-3.

insulation resistance

The insulation resistance between the phases of the busbar slot and between the phase conductor and the grounding terminal shall be no less than 20M/unit.

表格form 6-1 密集型 Intensive type

额定电流 (A)	导体截面尺寸 mm	20℃电阻 μΩ/m	电阻 μΩ/m	电抗 μΩ/m	阻抗 μΩ/m
400	4*50	0.1234	0.1530	0.031	0.156
630	6*50	0.0823	0.1070	0.031	0.111
800	6*60	0.0514	0.0678	0.029	0.0737
1000	6*100	0.0411	0.0543	0.027	0.0603
1250	6*125	0.0329	0.0434	0.024	0.0496
1600	6*160	0.0257	0.0349	0.018	0.0392
2000	6*200	0.0205	0.0278	0.015	0.0312
2500	8*200	0.0154	0.0203	0.012	0.0236
3150	6*200*2	0.0128	0.0166	0.010	0.0194
4000	8*200*2	0.0096	0.0123	0.008	0.0146
5000	8*200*3	0.0071	0.0089	0.006	0.0108
6300	12*200*2	0.0051	0.0063	0.005	0.008
7200	12*200*3	0.0041	0.0049	0.005	0.006

表格form 6-2 空气型 Air type

额定电流 (A)	导体截面尺寸 mm	20℃电阻 μΩ/m	电阻 μΩ/m	电抗 μΩ/m	阻抗 μΩ/m
400	4*50	0.1234	0.1530	0.031	0.156
630	6*50	0.0823	0.1070	0.031	0.111
800	6*60	0.0514	0.0678	0.029	0.0737
1000	6*100	0.0411	0.0543	0.027	0.0603
1250	6*125	0.0329	0.0434	0.024	0.0496
1600	6*160	0.0257	0.0349	0.018	0.0392
2000	6*200	0.0205	0.0278	0.015	0.0312
2500	8*200	0.0154	0.0203	0.012	0.0236
3150	6*200*2	0.0128	0.0166	0.010	0.0194
4000	8*200*2	0.0096	0.0123	0.008	0.0146
5000	8*200*3	0.0071	0.0089	0.006	0.0108
6300	12*200*2	0.0051	0.0063	0.005	0.008
7200	12*200*3	0.0041	0.0049	0.005	0.006

表格form 6-3 风电型 Wind power type

额定电流 (A)	导体截面尺寸 mm	20℃电阻 μΩ/m	电阻 μΩ/m	电抗 μΩ/m	阻抗 μΩ/m
630	6*50	0.0823	0.107	0.032	0.113
800	6*60	0.0514	0.0678	0.030	0.0739
1000	6*100	0.0411	0.0543	0.029	0.0606
1250	6*125	0.0294	0.0400	0.028	0.0500
1350	6*160	0.0257	0.0300	0.027	0.0405
1600	6*200	0.0205	0.0278	0.026	0.0380

介电强度

母线槽在正常使用条件下各相母线之间以及带电部件与裸露带电部件之间应能耐受下列规定的工频试验电压历时1min应无击穿或闪络。

密集型：2500V；空气型：2500V；风电型：3500V

保护电路连续性

母线单元外壳上任一未涂覆点与接地端子之间的连接电阻应不大于0.1Ω。

外壳防护等级

◆ 母线槽外壳防护等级不低于GB4208-2008规定的IP54。

◆ 母线槽运到施工现场后，应放在干燥通风的地方，下面用方木垫平，防止受潮，防止运输中的磕碰。

◆ 安装前应认真检查母线槽是否完整无损,接头镀锡处应擦拭干净，安装中注意防止灰砂异物掉入接口损坏绝缘层。

◆ 母线槽安装前应逐单元检测绝缘电阻，其绝缘电阻值应不小于20MΩ。

◆ 母线槽安装前应预先安装好固定支架,母线槽垂直安装时其支架间距应不大于3m，水平安装时其支架间距应不大于2m。

◆ 母线槽垂直安装穿过楼板处必须做好防火封堵，在封堵区外围做好防水平台。

◆ 母线槽水平安装形式见图4、图5。

◆ 母线槽过楼装置见图6。

◆ 风电型母线槽安装见图7。

◆ 母线槽在连接时应注意相序的一致性,接头安装时应按表9给定的扭矩拧紧连接螺栓。

Dielectric strength

Bus-bar grooves should be able to withstand the following power-frequency test voltage for 1 min without breakdown or flashover between buses of each phase and between live and bare live components under normal operating conditions.

Dense type: 2500V; Air type: 2500V; Wind power type: 3500V

Protective circuit continuity

The connection resistance between any uncoated point on the bus unit housing and the grounding terminal shall not exceed 0.1Ω.

Shell Protection Level

◆ Bus channel housing protection level is not lower than IP54 stipulated by GB4208-2008.

◆ Bus bar trough should be placed in a dry and ventilated place after being transported to the construction site. The bottom of the trough should be padded with square wood to prevent dampness and collision during transportation.

◆ Before installation, busbar grooves should be carefully checked for integrity and non-destructive. Tin-plated joints should be wiped clean. Attention should be paid to prevent foreign lime and sand from falling into the joints to damage the insulating layer.

◆ Bus bar groove should be inspected unit by unit before installation, and its insulation resistance value should not be less than 20M.

◆ Fixed brackets should be pre-installed before installation of busbar groove. When busbar groove is installed vertically, the bracket spacing should be no more than 3m, and when horizontal installation, the bracket spacing should be no more than 2m.

◆ Bus bar groove vertical installation through the floor must do a good job of fire prevention blockade, waterproof platform in the periphery of the blockage area.

◆ The horizontal installation form of busbar groove is shown in Fig. 4 and Fig. 5.

◆ Bus-bar groove crossing device is shown in Fig. 6.

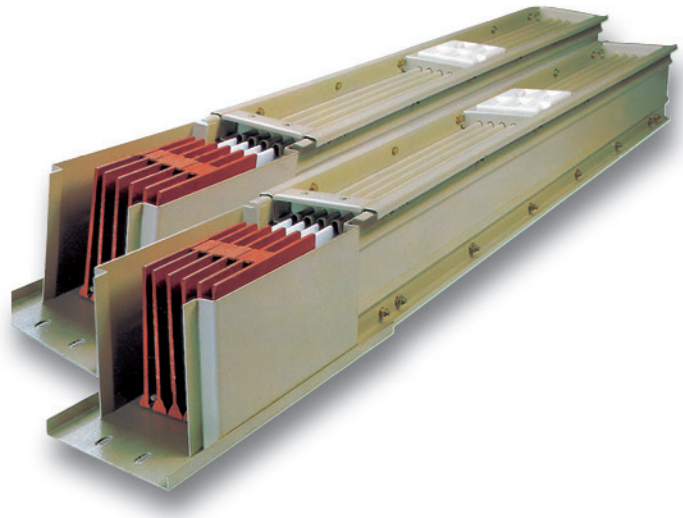
◆ The installation of wind power busbar trough is shown in Fig. 7.

◆ Bus bar grooves should be connected in accordance with the phase sequence. Connection bolts should be tightened according to the given torque in Table 9.

表9

螺纹直径(mm) Thread diameter	拧紧力矩(N.m) Tightening torque
10	15-18
12	25-32
16	63-78

CFW-2A高强型母线槽 CFW-2A High Strength Bus Channel



产品选型 Product selection

C FW-2A-□-□ A /-□P

- 4：三相四线制；5：三相五线制
  4: Three-phase four-wire system; 5: Three-phase five-wire system
- 额定电流 Rated current：
  250、400、500、630、800、1000、1250、1600、2000、2500、3150、4000、5000、6300
- T：铜排；L：铝排；F：铜铝复合排
  T: Copper Bar; L: Aluminum Bar; F: Copper-Aluminum Composite Bar
- 高强型
  High-strength type
- 空气型母线
  Air bus
- 江苏士林电气集团有限公司
  Jiangsu Shilin Electrical Equipment Co., Ltd.

例：CFW-G-T-1000A/4P：士林空气型母线，钢制壳体、铜排导体、额定电流1000A、三相四线制。
Example: CFW-G-T-1000A/4P: Shilin air bus, steel shell, copper conductor, rated current 1000A, three-phase four-wire system.

适用范围 Scope application

CFW-2A系列高强型母线槽适用于交流三相四线、三相五线制，频率50～60Hz，额定电压至660V，额定工作电流250～6300A的供配电系统，由于外壳做成瓦沟形式，坑沟位置有意将母线分隔固定，母线之间有18mm的间距，线间通风良好，使母线槽的防潮和散热功能有明显的提高，比较适用于南方大跨距工程。

CFW-2A series of high-strength busbar grooves are suitable for AC three-phase four-wire and three-phase five-wire systems with frequencies of 50-60 Hz, rated voltage of 660 V and rated working current of 250-6300A. Because the shell is made of tile grooves, the pit grooves are deliberately separated and fixed, and the spacing between buses is 18 mm, the ventilation between busbar lines is good, which makes the busbar grooves have obvious functions of moisture prevention and heat dissipation. It is more suitable for large-span projects in South China.

产品特点 Product characteristics

1. 母线选用高导电率的铜或铝导体材料，经过表面处理等加工处理后，用PVC热缩套管整体包覆，相间用高强度环氧树脂绝缘块隔开，使母排得到双重绝缘保护，绝缘性能大大提高，然后封闭在接地的金属外壳内。极为安全可靠。

2. CFW-2A高强型母线，母线外壳采用优质高强度冷轧钢及铝镁合金型材制作，其工艺制造不受板材限制，外壳做成瓦沟形式，不仅外形美观大方，更使母线机械强度增加，可彻底解决施工现场大跨距安装的难题， 母线水平段可生产至13m长。

3. 由于线间有一定的空隙，使导线的温升下降，这样就提高了过载能力，并减少了磁振荡噪声。但它产生的杂散电流及感抗要比密集型母线槽大得多，因此在同规格比较时，它的导电排截面必须比密集绝缘插接母线槽大。

4. 高强封闭母线既能承受较强的电动力，又具有较好的散热性能，大大提高了其载荷能力，并且还解决了大跨度安装无法支撑吊装的困惑。根据系统需求，可在母线槽任意位置设置插接口，安装快捷，分接方便，使用安全。

1. The busbar is made of copper or aluminium conductors with high conductivity. After surface treatment and other processing, the busbar is coated with PVC heat shrinkable sleeve. The busbar is separated by high strength epoxy resin insulating blocks, so that the busbar can be protected by double insulation, the insulation performance is greatly improved, and then sealed in the grounded metal shell. Very safe and reliable.

2. CFW-2A high-strength busbar is made of high-quality and high-strength cold-rolled steel and Al-Mg alloy profiles. Its manufacturing process is not limited by plate. The busbar shell is made of tile groove. It not only has beautiful appearance, but also increases the mechanical strength of busbar. It can completely solve the problem of large-span installation in construction site. The horizontal section of busbar can be produced to 13 m long.

3. Because there is a certain gap between the wires, the temperature rise of the wires decreases, which improves the overload capacity and reduces the magnetic oscillation noise. However, its stray current and inductance are much larger than that of the dense busbar slot. Therefore, when compared with the same specifications, the section of its conductive row must be larger than that of the dense insulated plug-in busbar slot.

4. High-strength enclosed bus not only can withstand strong electric force, but also has good heat dissipation performance, which greatly improves its load capacity, and also solves the puzzle that large-span installation can not support hoisting. According to the system requirements, plug-in interface can be set at any position of bus bar, which is fast to install, convenient to disconnect and safe to use.

主要技术参数 Main technical parameters

1. 频率50～60Hz，额定电压至660V，额定工作电流250～5000A，温升小于60K

2. 母线槽能保证在额定电流及额定电压下长期正常工作。

3. 母线槽能承受2500V工频耐压，历时1min无击穿和闪络现象。

4. 插接箱与母线槽的插接次数不少于50次。

5. 防护等级为IP30-40。

1. Frequency 50-60Hz, rated voltage 660V, rated working current 250-5000A, temperature rise less than 60K.

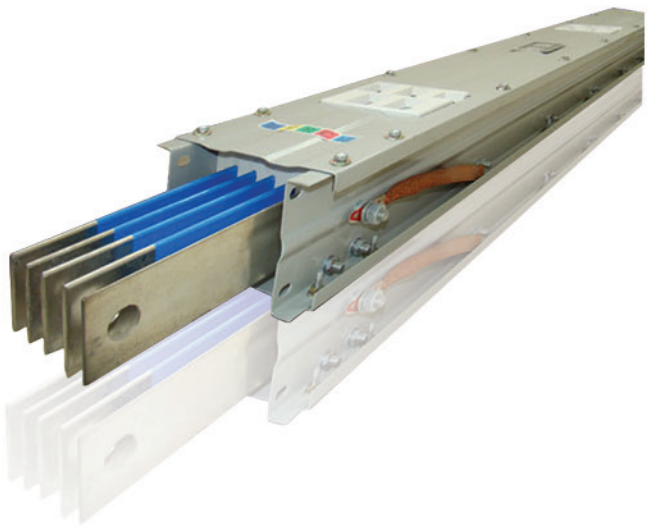
2. Busbar slot can ensure long-term normal operation under rated current and voltage.

3. Bus channel can withstand 2500V power frequency withstand voltage, and lasts 1 minute without breakdown and flashover.

4. The number of plug-in between plug-in box and busbar slot is not less than 50 times.

5. The protection level is IP30-40.

CFW系列空气型母线槽 CFW Series Air Bus Groove



产品选型 Product selection

C FW-□-□-□A/-□P

- 4：三相四线制；5：三相五线制
  4: Three-phase four-wire system; 5: Three-phase five-wire system
- 额定电流 Rated current：
  250、400、500、630、800、1000、1250、1600、2000、2500、3150、4000、5000、6300
- T：铜排；L：铝排；F：铜铝复合排
  T: Copper Bar; L: Aluminum Bar; F: Copper-Aluminum Composite Bar
- G：钢制壳体；L：铝合金壳体
  G: Steel shell; L: Aluminum alloy shell
- 空气型母线
  Air bus
- 江苏士林电气集团有限公司
  Jiangsu Shilin Electrical Equipment Co., Ltd.

例：CFW-G-T-1000A/4P：士林空气型母线，钢制壳体、铜排导体、额定电流1000A、三相四线制。
Example: CFW-G-T-1000A/4P: Shilin air bus, steel shell, copper conductor, rated current 1000A, three-phase four-wire system.

适用范围 Scope application

CFW系列空气型母线槽适用于交流三相四线、三相五线制，频率50～60Hz，额定电压至660V，额定工作电流250～6300A的供配电系统，承担配电任务，用于低压配电屏与大、中型负载的连接，主要应用于现代化的车间、厂房和高层建筑。

CFW series air bus grooves are suitable for AC three-phase four-wire and three-phase five-wire systems with frequencies of 50-60 Hz, rated voltage of 660 V and rated working current of 250-6300A. They undertake distribution tasks and are used to connect low-voltage distribution panels with large and medium-sized loads. They are mainly used in modern workshops, factories and high-rise buildings.

产品特点 Product characteristics

1. 分离空气绝缘，绝缘效果好；其相间的安全净距和爬电距离远远大于标准要求。尺寸紧凑；电压降较低；易于安装；传输能效更好；未来灵活的扩充；外观协调。

2. 母线选用高导电率的铜或铝导体材料，经过表面处理等加工处理后，用PVC热缩套管整体包覆，相间用高强度环氧树脂绝缘块隔开，使母排得到双重绝缘保护，绝缘性能大大提高，然后封闭在接地的金属外壳内。极为安全可靠。

3. 母线外壳采用优质高强度冷轧钢或铝镁合金型材制作，不仅外形美观大方，更大大增强母线槽的机械强度和系统的动热稳定性，可彻底解决施工现场大跨距安装的难题。根据系统需求，可在母线槽任意位置设置插接口，安装快捷，分接方便，使用安全。

4. 采用对接式安装方式，使得母线槽在安装过程中显得非常便捷、灵活，大大节省了安装时间；安装极为方便。

1. Separation of air insulation, insulation effect is good; the safe net distance and creepage distance between them are far greater than the standard requirements. Compact size; low voltage drop; easy installation; better transmission efficiency; flexible expansion in the future; appearance coordination.

2. The busbar is made of copper or aluminium conductors with high conductivity. After surface treatment and other processing, the busbar is coated with PVC heat shrinkable sleeve. The busbar is separated by high strength epoxy resin insulating blocks, so that the busbar can be protected by double insulation, the insulation performance is greatly improved, and then sealed in the grounded metal shell. Very safe and reliable.

3. The busbar shell is made of high-quality and high-strength cold-rolled steel or Al-Mg alloy profiles. It not only has a beautiful appearance, but also greatly enhances the mechanical strength of busbar groove and the dynamic and thermal stability of the system. It can thoroughly solve the problem of large-span installation in construction site. According to the system requirements, plug-in interface can be set at any position of bus bar, which is fast to install, convenient to disconnect and safe to use.

4. Adopting docking installation mode makes busbar slot very convenient and flexible in the process of installation, which greatly saves installation time and is very convenient to install.

主要技术参数 Main technical parameters

1. 频率50～60Hz，额定电压至660V，额定工作电流250～6300A

2. 母线槽能保证在额定电流及100%的额定电压下长期正常工作。

3. 母线槽在周围空气温度为20±5℃，相对湿度为50~70%的常态下，其每节的绝缘电阻不低于20MΩ

4. 母线槽能承受2500V工频耐压，历时1min无击穿和闪络现象。

5. 插接箱与母线槽的插接次数不少于200次。

6. 防护等级达IP30-40。

1. Frequency 50-60Hz, rated voltage 660V, rated working current 250-6300A.

2. Busbar slot can ensure long-term normal operation under rated current and 100% rated voltage.

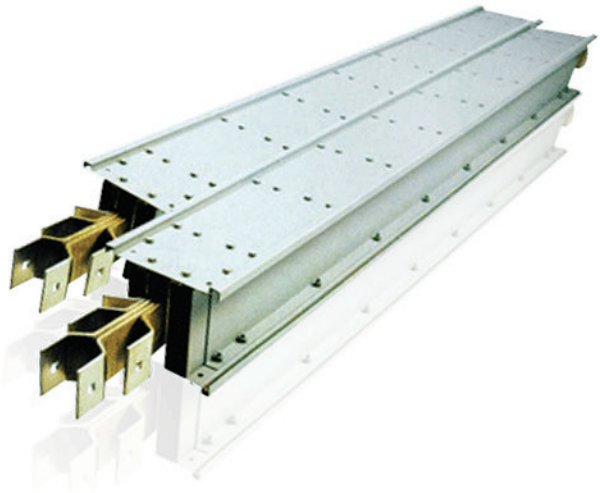
3. The insulation resistance of busbar slot is not less than 20M under the normal condition of ambient air temperature 20+5 C and relative humidity 50~70%.

4. Bus channel can withstand 2500V power frequency withstand voltage, and lasts 1 minute without breakdown and flashover.

5. The number of plug-in between the plug-in box and bus channel is not less than 200.

6. The protection level is IP30-40.

NHJX耐火型母线槽　NHJX refractory busbar



产品选型 Product selection

NHJX- □ - □ - □A /- □P

- 4：三相四线制；5：三相五线制
  4: Three-phase four-wire system; 5: Three-phase five-wire system
- 额定电流 Rated current：
  250、400、500、630、800、1000、1250、
  1600、2000、2500、3150、4000、5000
- T：铜排；L：铝排；F：铜铝复合排
  T: Copper Bar; L: Aluminum Bar; F: Copper-Aluminum Composite Bar
- G：钢制壳体；L：铝合金壳体
  G: Steel shell; L: Aluminum alloy shell
- 耐火型母线
  Refractory busbar

例：NHJX-L-T-2000A/5P：耐火型母线，铝合金壳体、铜排导体、额定电流2000A、三相五线制。
Example: NHJX-L-T-2000A/5P: refractory busbar, aluminum alloy shell, copper conductor, rated current 2000A, three-phase five-wire system.

适用范围 Scope of application

NHJX系列耐火型母线槽适用于交流三相四线、三相五线制，频率50～60Hz，额定电压至660V，额定工作电流250～6300A的供配电系统。耐火型母线槽具有优良的绝缘性能，既可在正常环境中连续使用，又可在失火环境中连续使用一小时以上，可适用于高层建筑及重要设施中，代替耐火电缆起输配电作用。

NHJX Series Refractory busbar slots are suitable for AC three-phase four-wire and three-phase five-wire systems with frequencies of 50-60 Hz, rated voltage of 660 V and rated working current of 250-6300A. Fire-resistant busbar groove has excellent insulation performance. It can be used continuously in normal environment and in fire environment for more than one hour. It can be used in high-rise buildings and important facilities instead of fire-resistant cables to play the role of transmission and distribution.

产品特点 Product characteristics

1. 耐火型母线槽除在电气性能上有绝缘母线槽之优点外，更具有独特的防火性能。其导电材料选用高导电率的铜或铝导体材料，绝缘采用云母及高强陶瓷材料，母线外壳

2. 母线槽外壳采用优质高强度冷轧钢或铝镁合金型材制作，并采用双层隔热且内外采用防火材料处理。耐火型母线槽外壳开有通风孔，发生火灾时，防火涂料能迅速膨胀，隔断热源。

3. 耐火型母线槽绝缘材料为高温云母带，耐高温950℃；

4. 耐火型母线槽由涂有防火涂料的外壳，包缠耐火云母带的母线和由耐火绝缘材料制成的支架组成。支架上开有多个凹槽，凹槽内置入母线并将其固定。在母线槽的一端有母线槽连接盒，在母线槽内有母线分接盒。

1. Fire-resistant busbar groove has the advantages of insulated busbar groove in electrical performance and unique fire-proof performance. Its conductive materials are copper or aluminium conductors with high conductivity, mica and high strength ceramics for insulation and busbar housing.

2. Bus channel shell is made of high-quality and high-strength cold-rolled steel or Al-Mg alloy profiles, with double-layer heat insulation and fireproof material inside and outside. Fire-resistant busbar groove shell is provided with ventilation holes. When a fire occurs, the fire-proof coating can expand rapidly and cut off heat source.

3. The insulating material of refractory busbar groove is high temperature mica tape with high temperature resistance of 950 C.

4. The fire-resistant busbar groove consists of a shell coated with fire-resistant paint, a busbar wrapped with fire-resistant mica tape and a bracket made of fire-resistant insulating material. A plurality of grooves are arranged on the bracket, and buses are inserted into the grooves and fixed. At one end of the busbar slot, there is a busbar slot connection box, and in the busbar slot, there is a busbar tapping box.

主要技术参数 Main technical parameters

1. 频率50～60Hz，额定电压至660V，额定工作电流250～6300A

2. 耐火型母线槽能在周围环境温升至960℃时连续正常工作不低于90分钟。耐火型母线槽还具备无毒，无污染及在灭火时能防止水渗透的性能.

3. 耐火型母线槽插接口有防水边，防护等级达IP54

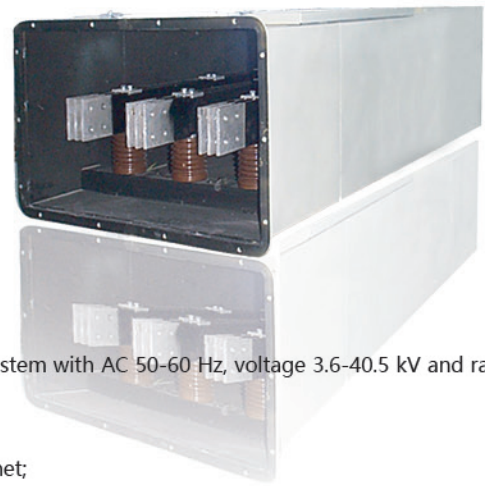
1. Frequency 50-60Hz, rated voltage 660V, rated working current 250-6300A.

2. The refractory busbar can work normally for no less than 90 minutes continuously when the ambient temperature rises to 960 C. Fire-resistant busbar groove also has non-toxic, non-polluting and water penetration resistance in fire extinguishing.

3. Fire-resistant busbar slot socket has waterproof edge, protection level up to IP54

GM系列高压共箱母线槽
GM Series High Voltage Common Box Bus Channel

用途 Purpose



GM型共箱封闭母线适用于交流50~60Hz，电压3.6-40.5kV，额定电流1000~6800A的中高压输电系统。其主要应用于：

1. 发电机与变压器间的电气连接；
2. 变压器与高压配电柜间的电气连接；
3. 交流主励磁机与整流柜间的电气连接；
4. 励磁开关柜与电机转子滑环间的电气连接；
5. 其他高压设备主回路间的电气连接；

GM type enclosed bus is suitable for medium and high voltage transmission system with AC 50-60 Hz, voltage 3.6-40.5 kV and rated current 1000-6800A. Its main applications are:

1. Electrical connection between generator and transformer;
2. Electrical connection between transformer and high voltage distribution cabinet;
3. Electrical connection between AC main exciter and rectifier cabinet;
4. Electrical connection between excitation switch cabinet and motor rotor sliding ring;
5. Electrical connection between main circuits of other high-voltage equipment;

电厂共箱母线应用
Application of Common Box Bus in Power Plant

启备变回路共箱母线
Common-box Bus Bar of Start-up and Standby Transformer Circuit

特点 Characteristic

1. 该系列母线具有优良的抗短路性能，由于具有铝或弱磁钢板外壳的保护，能够有效地减弱涡流或环流引起的结构发热，降低母线外壳温度，减小电能损耗，提高载流量，减小短路电动力。

2. 该系列母线结构先进，安装维修孔可设置于母线的

1. The series buses have excellent short-circuit resistance. Because of the protection of aluminium or weak magnetic steel shell, they can effectively reduce the structural heating caused by eddy current or circulating current, reduce the temperature of busbar shell, reduce power loss, increase current carrying capacity and reduce short-circuit electric force.

2. This series of buses has advanced structure. The installation

上部或下部，对于大电流户内母线在壳体两侧及下部可设有通风百页窗，以加强散热，降低温升。

3. 当母线直线长度达20~30m时，设置母线伸缩节及满足因温度原因引起的热胀冷缩，还可对由基础沉降所引起的误差进行补偿。

4. 为了消除设备运行时产生的震动对母线的影响，母线与设备的连接均采用铜编软连接，并在外壳之间加入橡胶垫以吸收震动；对于母线本体，在系统中可加装减震器，对绝缘子和导体实现弹性支持，能较好地避免设备产生的机械震动及地震波给封闭母线带来的破坏。、

5. 母线的散热主要靠热辐射，为了加强散热效果，在母线外表面喷涂浅灰色油漆来减少对可见光的吸收；在母线内表面喷涂黑色油漆来加强内部热量对外壳的辐射，同时防止电晕。

6. 为了避免冬天室内、外温差引起的凝露现象，在穿墙处设置隔断装置，使户外与户内母线完全隔离。

7. 为了提高母线的允许运行温升，防止沿海露天以及电化腐蚀严重的大气对接头的电解腐蚀，降低接触电阻，所有连接部位均采用镀银处理，使其允许温升提高到65k，大大高于工作时的实际温升。

8. 为了使母线的自振频率避开产生共振的频率范围（对于单条母线其共振频率范围为35~135Hz），并使作用于母线上的电动力减小，优选绝缘子的型号、规格及强度等级，并合理设置绝缘子间的跨距。

9. 为了对可拆接头进行温度监视，在变压器、发电机及配电柜与母线的连接处可设置密封式观察窗，通过示温贴片或远红外测温装置来直接测量温度，配套智能在线监控系统可实时监视母线系统的运行情况，大大方便了运行人员的检测维护工作，提高了封闭母线的安全运行水平。

and maintenance holes can be set on the upper or lower part of buses. For large current indoor buses, ventilation shutters can be set on both sides and the lower part of buses to enhance heat dissipation and reduce temperature rise.

3. When the straight line length of the bus is 20-30 m, the expansion joint of the bus and the thermal expansion and cold contraction caused by the temperature can be set up, and the error caused by the settlement of the foundation can be compensated.

4. In order to eliminate the impact of vibration on busbar caused by equipment operation, the connection between busbar and equipment is made of copper braided soft connection, and rubber pad is added between the shell to absorb vibration; for busbar body, shock absorber can be installed in the system, and elastic support for insulator and conductor can be realized, which can avoid the breakage of closed busbar caused by mechanical vibration and seismic wave produced by equipment. Bad.

5. Bus heat dissipation mainly depends on thermal radiation. In order to enhance the heat dissipation effect, light grey paint is sprayed on the outer surface of buses to reduce the absorption of visible light; black paint is sprayed on the inner surface of buses to enhance the radiation of internal heat to the outer shell, while preventing corona.

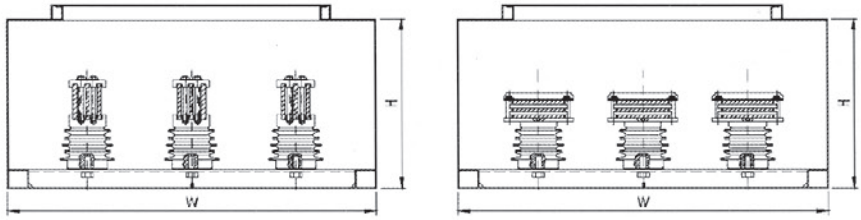
6. In order to avoid condensation caused by temperature difference between indoor and outdoor in winter, a partition device is installed at the wall-crossing place to completely isolate the outdoor bus from the indoor bus.

7. In order to improve the allowable temperature rise of busbar, prevent the electrolytic corrosion of the joint in open air along the coast and the atmosphere with serious electrochemical corrosion, and reduce the contact resistance, all the connecting parts are treated with silver plating, so that the allowable temperature rise can be increased to 65k, which is much higher than the actual temperature rise at work.

8. In order to avoid the resonance frequency range (for a single bus, the resonance frequency range is 35-135Hz) and reduce the electromotive force acting on the bus, the type, specification and strength grade of insulators are optimized, and the span between insulators is reasonably set.

9. In order to monitor the temperature of detachable joints, sealed observation windows can be set at the connection of transformers, generators and distribution cabinets with buses. Temperature can be measured directly by temperature display patches or far-infrared temperature measuring devices. Intelligent on-line monitoring system can monitor the operation of bus system in real time, which greatly facilitates the detection and maintenance work of operators and improves the closed bus system. Safe operation level.

主要技术参数 Main technical parameters



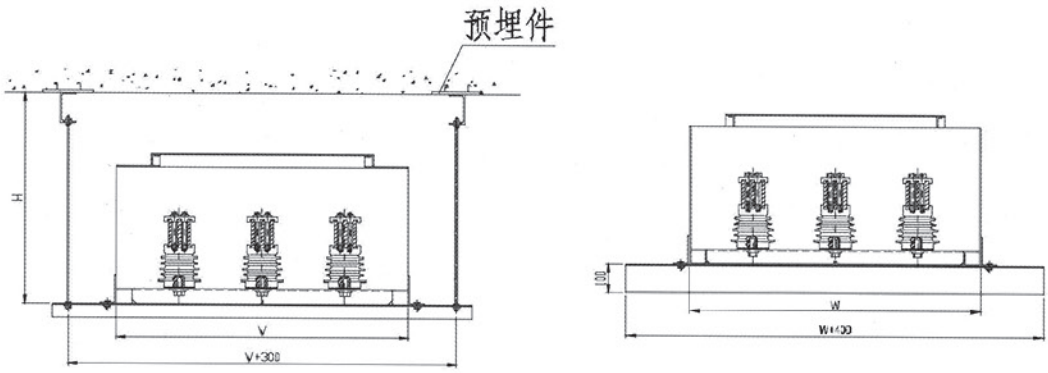
Ⅰ型　　Ⅱ型

符合标准 Meet the standards		IEC364-5-54/GB/T8349-2000/JB/T9639-1999			
环境温度 ambient temperature	℃	-40~+40			
相对湿度 relative humidity		日平均值不大于95%，月平均值不大于90% The daily average is no more than 95% and the monthly average is no more than 90%.			
防护等级 Protection Level		IP40、IP54			
额定电压 Rated voltage	kV	3.15　6.3　10.5　35			
最高工作电压 Maximum operating voltage	kV	3.6　7.2　12　40.5			
绝缘等级 Insulation grade	kV	25/40　32/60　42/75　100/185			
额定频率 Rated frequency	Hz	50（60）			
额定工作电流 Rated working current		外形尺寸（W×H）（mm×mm） Outline size			
1000~3000	A	Ⅰ750×400 Ⅱ850×350	Ⅰ900×560 Ⅱ1060×460	Ⅰ900×560 Ⅱ1060×460	Ⅰ1500×920 Ⅱ1800×880
3500	A	Ⅰ750×400 Ⅱ850×480	Ⅰ900×560 Ⅱ1060×460	Ⅰ900×560 Ⅱ1060×460	
4000	A	Ⅰ750×400 Ⅱ850×480	Ⅰ900×560 Ⅱ1060×460	Ⅰ900×560 Ⅱ1060×460	
4500	A	Ⅰ750×440	Ⅰ1000×560	Ⅰ1000×560	
5000	A	Ⅰ1350×500	Ⅰ1500×600	Ⅰ1500×600	
6300~6800	A	Ⅰ1350×500	Ⅰ1500×600	Ⅰ1500×600	

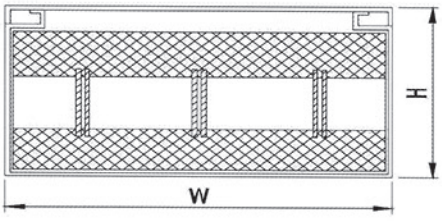
注：4000A以上的共箱封闭母线导体也可采用槽型导体。

Note: The groove conductor can also be used for the common box closed bus conductor above 4000A.

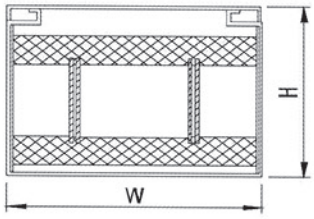
母线固定形式简图 Bus Fixed Form Sketch



交、直流励磁共箱封闭母线
AC and DC Excitation Common Box Closed Bus



交流励磁母线
AC Excitation Bus



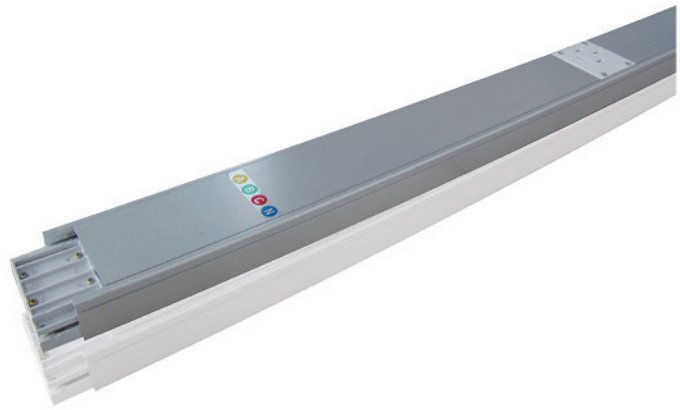
直流励磁母线
DC excitation bus

额定电压（V）Rated voltage		380		1000		1500	
额定工频耐压（kV）Rated power frequency withstand voltage		2.5		4.2		5.4	
额定电流(A) Rated current		外形尺寸（W×H）（mm）Outline size					
		铜导体 Copper conductor	铝导体 Aluminum conductor	铜导体 Copper conductor	铝导体 Aluminum conductor	铜导体 Copper conductor	铝导体 Aluminum conductor
交流励磁 AC excitation （I）型	400~2250	550×400	650×400	650×400	650×400	700×400	700×400
	2500~3250		650×400		750×400		800×400
	3500~6300	650×400		750×400		800×400	
	5000~6300	700×500	700×500	800×500	800×500	900×500	900×500
直流励磁 DC excitation （II）型	400~2250	450×400	450×400	550×400	550×400	500×400	500×400
	2500~3250		500×400		600×400		650×400
	3500~6300	500×400		600×400		650×400	
	5000~6300	600×500	600×500	700×500	700×500	800×500	800×500

注：1. 以上各表的规格尺寸为我公司典型设计；
2. 我公司可根据顾客要求进行特殊设计。

Note: 1. The specifications and sizes of the above tables are typical designs of our company.
2. Our company can make special designs according to customers'requirements.

SLKB照明母线槽 SLKB lighting busbar



产品选型 Product Selection

SL KB- □- □A /- □P

- SL：江苏士林电气集团有限公司 Jiangsu Shilin Electrical Equipment Co., Ltd.
- KB：照明母线 Lighting busbar
- □：T：铜排；L：铝排 T: Copper bars; L: Aluminum bars
- □A：额定电流 Rated current：10、16、25、32、40、50、63、80、100
- □P：4：三相四线制；5：三相五线制 4: Three-phase four-wire system; 5: Three-phase five-wire system

例：SL-KB-T-50A/5P：士林照明母线，铝合金壳体、铜排导体、额定电流50A、三相五线制。

Example: SL-KB-T-50A/5P: Shilin lighting bus, aluminum alloy shell, copper conductor, rated current 50A, three-phase five-wire system.

适用范围 Scope application

照明母线槽适用于额定电压660V，频率为50HZ（60HZ），额定工作电流10-63A的三相四线、三相五线的分配电源及照明。主要应用于高层建筑、宾馆、商场、办公室、学校、医院等中小负载但分支多的照明系统及用电场所。

The lighting busbar slot is suitable for distribution power supply and lighting of rated voltage 660V, frequency 50HZ (60HZ), rated working current 10-63A of three-phase four-wire, three-phase five-wire. Mainly used in high-rise buildings, hotels, shopping malls, offices, schools, hospitals and other small and medium-sized load, but more branches of lighting systems and electricity places.

产品特点 Product characteristics

1. 照明型母线槽外壳采用轨道式铝合金型材，重量轻，耐腐蚀，稳定性强，装配简单快捷，外形美观。所有电流等级母线槽采用同一规格外壳，连接处采用标准连接端子，通用性好。

2. 利用绝缘件支承并隔开绝缘导线，用电安全可靠。采用通用的两孔、三孔插座，引出分支电源方便、快捷。插座设置有利于三相负载均衡。

3. 提供各种现场安装方式，用户可根据需要灵活使用。型材结构合理，可实现2m以下大跨距安装，还可作为小型照明设备的安装支架。母线槽每隔400mm设置一插口，插接箱时可带电插接，插接箱内根据用户要求对安装开关或熔断器。采用积木式结构，具有快速、可靠的电气和机械连接件性能。

1. The shell of lighting busbar groove is made of track-type aluminium alloy profile, which is light in weight, corrosion-resistant, stable, easy to assemble and beautiful in appearance. All current grade busbar grooves adopt the same specification shell, and standard connection terminals are used at the connection points, which has good versatility.

2. Supporting and separating insulated conductors with insulators, the electricity is safe and reliable. The general two-hole and three-hole sockets are used to lead out branch power supply conveniently and quickly. The socket setting is beneficial to three-phase load balancing.

3. Provide a variety of on-site installation methods, users can use flexibly according to their needs. The profile structure is reasonable, and it can be installed in a large span of less than 2m. It can also be used as a mounting bracket for small lighting equipment. Bus bar slot is equipped with a socket every 400 mm. When the socket box is electrified, the switch or fuse can be installed in the socket box according to the user's requirements. With building block structure, it has fast and reliable performance of electrical and mechanical connectors.

主要技术参数 Main technical parameters

1、额定绝缘电压660V

2、额定频率：580HZ-60HZ

3、室内相对温度不超过90%（当周围空气温度为+20℃）。

4、安装地的海拔不超过2000m。

5、外形尺寸：40×30mm

6、高防护等级：IP54。

1. rated insulation voltage 660V

2. Rated Frequency: 580HZ-60HZ

3. Relative indoor temperature should not exceed 90% (when ambient air temperature is + 20 C).

4. The altitude of the installation site shall not exceed 2000m.

5. Shape size: 40 x 30 mm

6. High protection level: IP54.

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