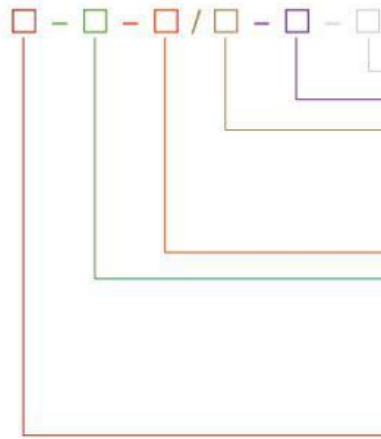




封闭式母线槽
Enclosed busbar channels

一、FKC空气绝缘型母线槽 FKC air insulated busbar channels



- 干线长度 Chain wire length (mm)
- 功能单元代号 Functional unit code
- 线制 Wire system
- 3 表示三相三线制 3 means three-phase three wire
- 4 表示三相四线制 4 means three-phase four wire
- 5 表示三相五线制 5 means three-phase five wire
- 额定电流 Rated current (A)
- 母线槽品种 Busbar channels varieties
- CMC表示密集绝缘型母线槽 means Intensive type insulated busbar channels
- FKC表示空气绝缘型母线槽 means air insulated busbar channels
- GFM高压共箱母线槽 means the busbar channels of the high pressure common box
- FZM表示照明封闭式母线槽 means the lighting enclosed busbar channels
- ZR表示阻燃(难燃) means inflaming retarding (difficult to burn)
- NH表示耐火 means fire-resistant
- 无表示普通性能 No means ordinary functions

空气绝缘型母线槽用绝缘衬垫支撑在壳体内，靠空气介质来绝缘的母线槽，称为空气型母线槽。

Air-insulated busbar channels is supported by insulating liner in the shell, by the media to air-insulated busbar, called Air-busbar.



母线槽断面结构及每米重量 Busbar channel sectional area and weight of each meter

额定电流 Rated current (A)	每相母排规格 (mm) 层-厚×宽 Each phase mother row specifications (mm) layer-thick wide	母线槽高度 Height of bus bar channel (mm)	母线槽每米重量 Weight of each meter of busbar channel (kg)		
			III 线制 wire system	IV 线制 wire system	V 线制 wire system
100	3×30	90	10	13	15
160	3×35	100	11	14	16
200	3×40	110	12	15	17
250	3×50	110	13	16	19
400	6×40	110	14	18	22
630	6×50	110	16	23	27
800	6×60	120	18	23	27
1000	6×80	140	21	27	32
1250	6×110	180	29	37	44
1600	6×150	220	35	45	54
2000	6×175	250	44	56	68
2500	6×230	300	53	68	83
3150	6×280	350	67	86	105
4000	2-6×200	500	80	104	128
5000	2-6×225	610	110	132	155

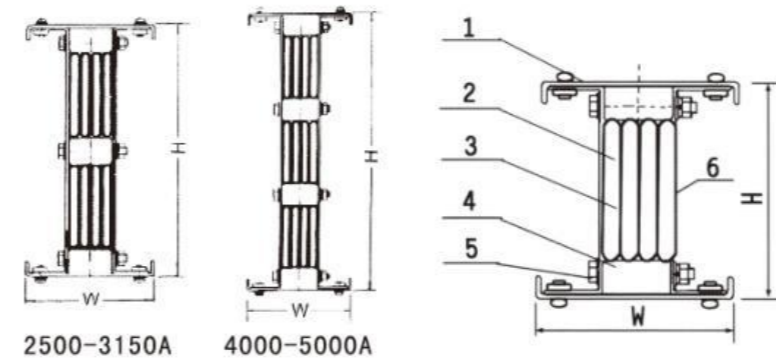
说明：III、IV线制W=150，V线制W=160，电流等级≥630A时PE线截面为相线的1/2。

Illustration: III IV wire system w=150 V wire system w=160 Current level ≥630 A, the section of PE wire is half of phase wire.

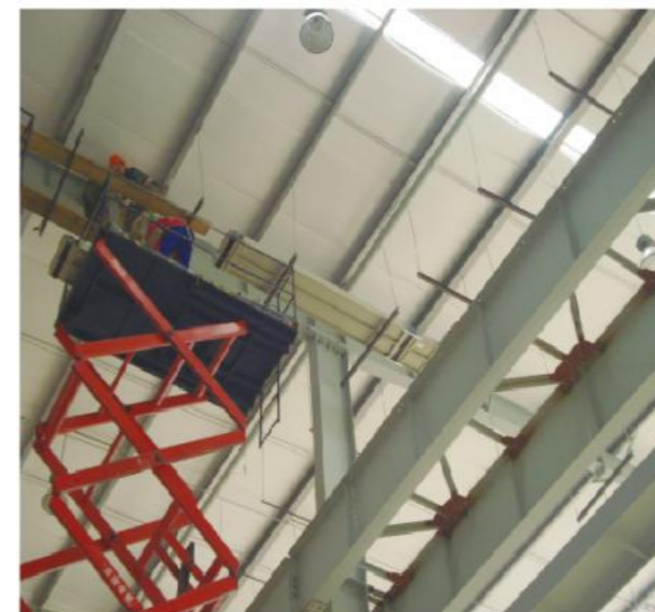
二、CMC密集绝缘型母线槽 CMC intensive insulated bus bar channel

CMC密集绝缘型母线槽由铜母排、壳体、绝缘材料等组成。铜排表面有绝缘层，并紧固后夹装在壳体内，称为密集绝缘型母线槽。

CMC insulated busbar is composed of the intensive copper busbars, housing, insulation and other components. Copper surface insulation and tighten the clamp after the shell, called the dense insulation busbar.



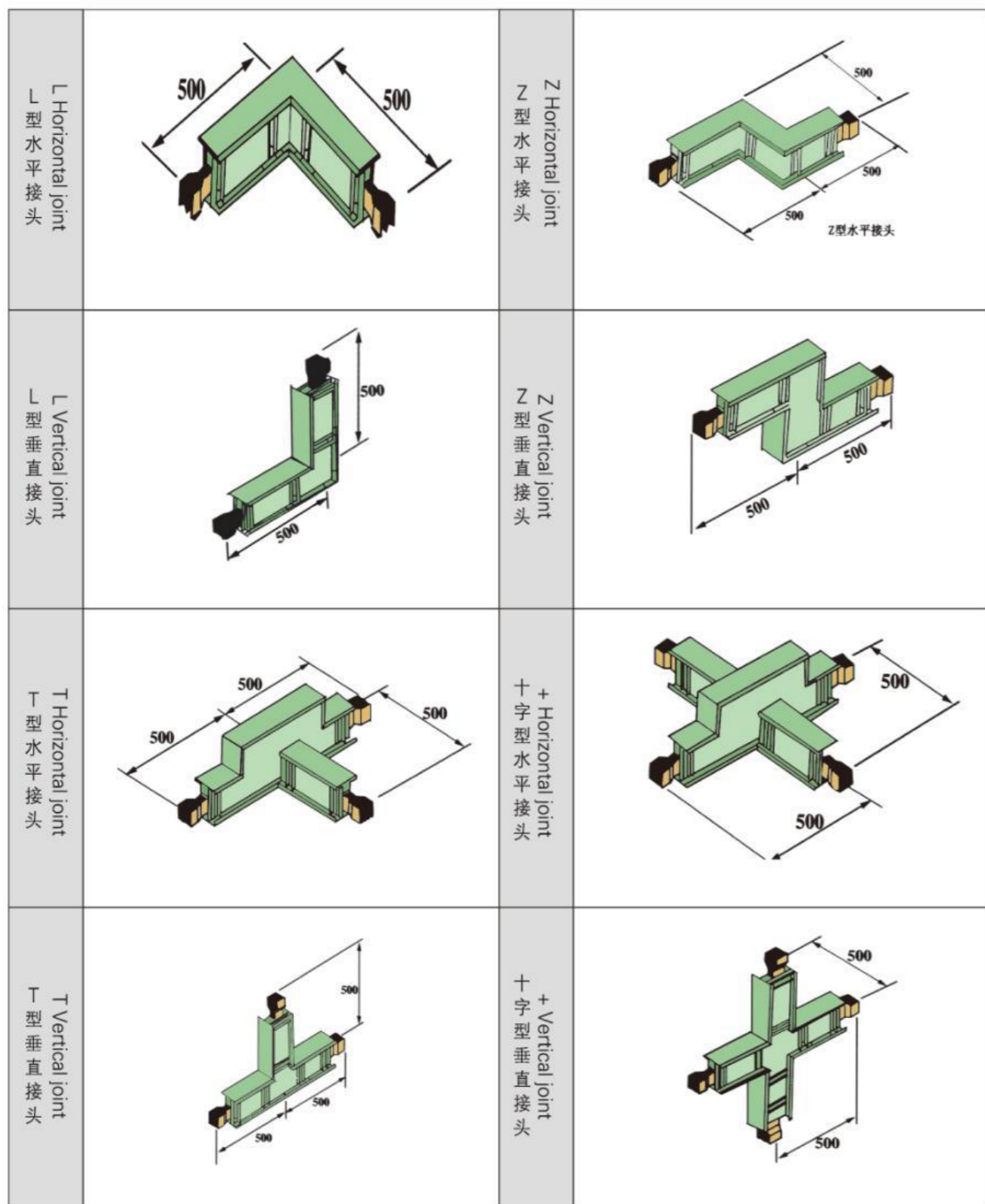
- 1、母线槽本体盖板
Bus bar channel reality cover board
- 2、导体铜排
Conductor copper platoon
- 3、绝缘层
Insulation layer
- 4、绝缘垫块
Insulation spacer
- 5、紧固螺栓
Fastened bolt
- 6、母线槽本体侧板
Bus bar channel reality lateral board



额定电流 Rated current (A)	每相铜规格 Each phase copper specifications (mm)	每米重量 Each meter weight kg/m	外形 Appearance H×W
5000	3×175×6	165	630×170
4000	3×125×6	125	483×170
3150	2×140×6	90	362×170
2500	2×115×6	75	312×170
2000	175×6	55	231×170
1600	140×6	45	196×170
1250	100×6	35	156×170
1000	80×6	30	136×170
800	60×6	25	126×170
630	50×6	22	106×140
400	30×6	15	96×140
250	35×3	13	86×140
160	25×3	10	86×140



GHG照明供电母线槽
Lighting & Power Bus Bar



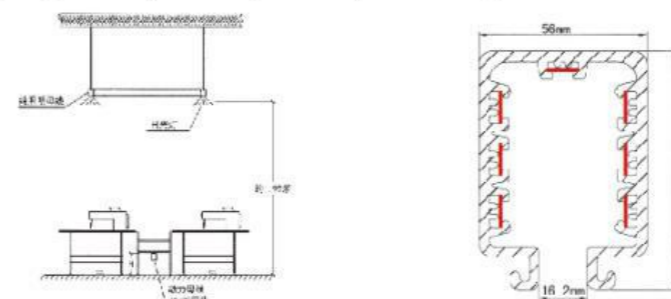
一、关于母线槽 About Busway

母线槽作为一种高效输送电流的配电装置，其优点是传统多路电线并联的桥架所无法替代的。母线槽的导电方式是通过绝缘管体内2-7根导电铜带，采取空气绝缘的方式，形成照明和动力（220V&380V）单独分路控制，提供动力的移动供电插座（220V&380V）可在贯通的整条母线槽内滑动至任意位置供电并且可在任意位置增加或减少供电点。以碳刷为触点的插座在通电的情况下，可避免因插座滑动而产生火花，杜绝安全隐患。母线槽正常采用标准（4米/根）对接方式进行安装，使用过程中的检修及维护非常简单、方便。对于后续的母线槽线路的移动和改造可重复利用，不会产生损耗。
新型照明供电母线槽作为一种新的供配电方式正逐步取代传统电缆桥架，其安全、可靠、灵活；安装、维护便捷；外观整洁、大方的特点已普遍被广大用户所接受。

As an efficient current distribution device, lighting busway can not be replaced by the traditional multi-wire parallel traditional cable tray.
The lighting system includes enclosed 2-7 copper bar and PVC insulation tube outside. The copper bars are insulated by PVC tube and air at the same time. This system can supply power to lighting and machine simultaneously. User can add or deduct power supply points by adding or deducting sockets. Using carbon brush as electrical contact can avoid spark efficiently, which greatly improve the safety and reliability. The standard length is 4m/pc. It is very simple and easy to install and maintain by adopting butt joint and the system is reusable.
As a new power supply and distribution device, lighting busway is gradually replacing the traditional cable tray. It has generally been accepted by the majority of users with its features of safe, reliable, flexible installation, maintenance and convenient, appearance of clean.

二、塑管照明配电母线 PVC Tube Lighting & Power Busway

本产品可提供独立照明和动力，也可单独使用照明或动力。
This product can provide independent or combined use of lighting and power.
特点：采用优质PVC材质，具有高阻抗和绝缘性，照明和动力兼备使用场所广泛，适合于各类服装厂和密集型供电场所，性价比高。
Feature: This product uses the aluminum alloy, with 5 conductive copper bars. The socket adopts the wheel design, which move more smoothly. It is mainly used for garment factory cutting. At the same time, the lighting busway not only can disposition large current conductive copper bar, but also for power supply.



导管母线
tube busway



标准长度 Standard Length: 4米/7p

型号 (Model)	重量 (Weight)	备注 (Remarks)
GHG-7(7)-30	3.4kg/m	7p-30
GHG-7(7)-30/50	3.6kg/m	2p-30;5p-50
GHG-7(7)-30/80	4.0kg/m	2p-30;5p-80



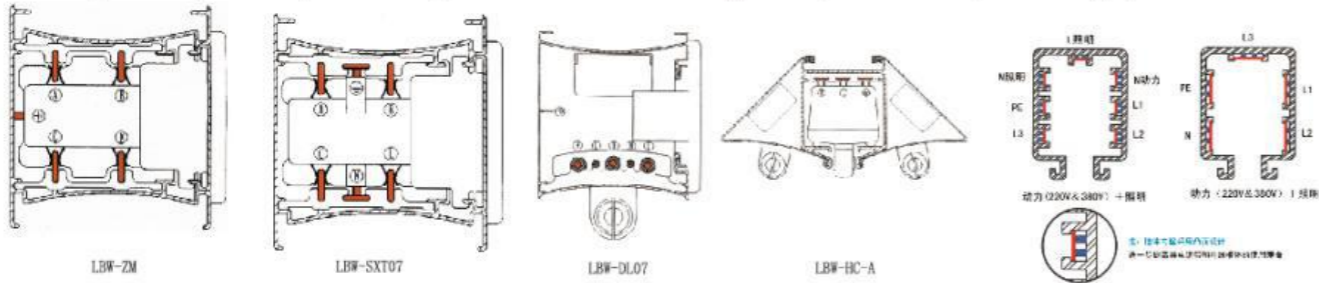
三、铝合金移动电母线 Aluminum Alloy Mobile Power-supply Busway

本产品提供 单相 & 三相动力

This product provides single-phase & three-phase power

特点: 该产品采用外壳铝合金, 内置5根导电铜带, 插座采用轮式设计, 移动更顺畅, 主要用于服装厂裁剪区域, 同时该母线可配大电流铜带, 也可用作母线供电。

Feature: This product uses the aluminum alloy, with 5 conductive copper bars. The socket adopts the wheel design, which move more smoothly. It is mainly used for garment factory cutting. At the same time, the lighting busway not only can disposition large current conductive copper bar, but also for power supply.



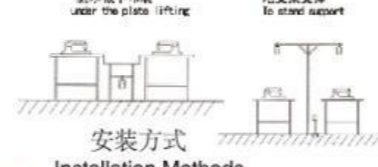
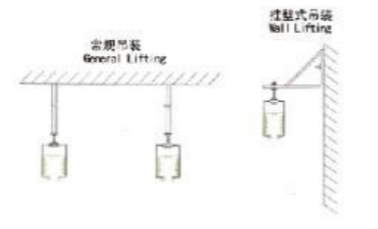
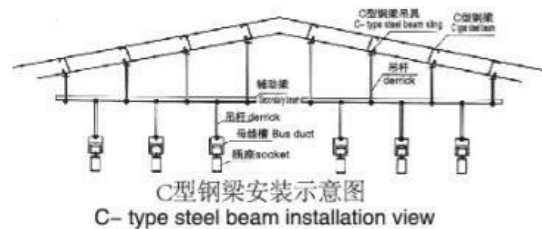
标准长度 Standard Length: 4米/7p

裁剪车间 Tailoring workshop

型号 (Model)	重量 (Weight)	备注 (Remarks)
LBW/GHG-7(7)-30	3.4kg/m	7p-30
LBW/GHG-7(7)-30/50	3.6kg/m	2p-30;5p-50
LBW/GHG-7(7)-30/80	4.0kg/m	2p-30;5p-80



四、常规吊装 General Lifting

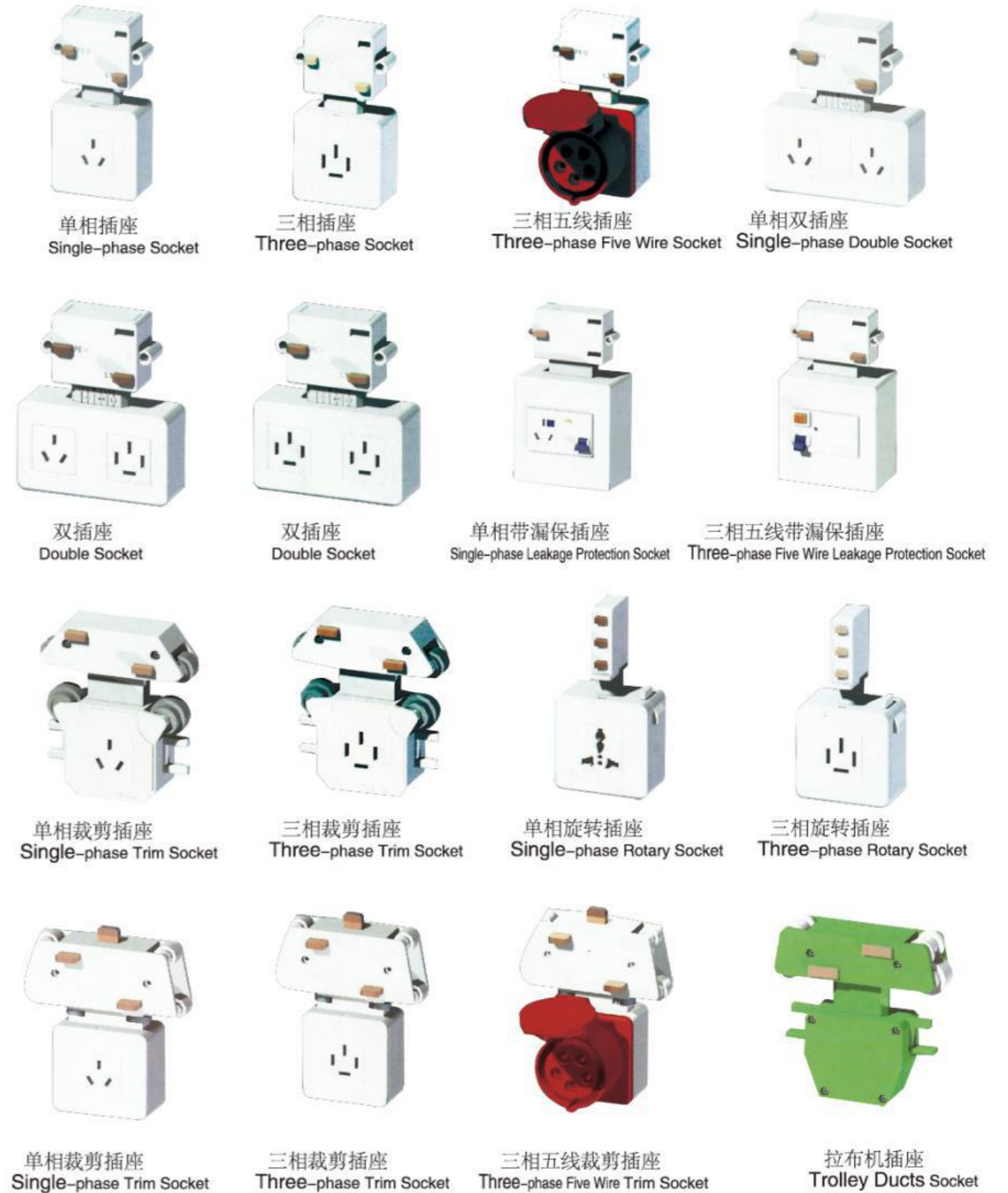


裁剪母线 cutting busway



铝合金母线 aluminum alloy busway

五、服装照明母线槽配件 Lighting Appraue Bus duct Accessories



六、服装照明母线槽配件 Lighting Appraue Bus duct Accessories



绝缘管型输电母线槽 Insulated tube aluminum bus bar system for power transmission

一、产品介绍 product introduction

该产品是专供各厂矿业设备替代常规电缆线作为电力馈电配电使用的新颖输电母线槽。

当今现代工程的高要求，尤其要求配电设备应具备较高的适应能力和灵活性，以适应工程需要。但随着市场有色金属材料成本不断上涨，工程投资成本高，而本公司的分相绝缘管型铝质输电母线（全封闭矩形管及圆形管）考虑用户要求，在确保同电流等效导电性能替代电缆线或铜质母线槽使用，投资运行成本低（相对于铜电缆加配套桥架，可节省费用50%~60%以上），并具有一下优点：

the insulated tube aluminum bus bar system is idea replacement of cable as power transmission system, applied in new modern industrial factory. The products conforms to the strict requirements in modern industries, with high reliability and flexibility. Compared to the cable system and copper bus bar system, it has the advantages of low cost and high effectiveness.

- 材质为空心导体，表面经阳离子氧化处理，表面积大，集肤效应低，单位截面积流量大于常规矩形母线。
Adopting hollow aluminum conductor with surface cation oxidation treatment, the current loading capacity is greater than the ordinary square busbar.
- 空心导体内部易自然形成空气对流，散热条件好，绝对温升低，而常规矩形母线槽及电缆是无法达到这一效果的。
Compared to ordinary busbar system and cable system, Inner hollow design is benefit for heat disperse and low temperature rising with good air convection,
- 管式导体为单相敷设，不受其他相位母线的电磁场干扰
Single phase installation effectively avoids Electromagnetic interference.
- 结构紧凑，电气绝缘性能强，主绝缘材料稳定性高，阻燃，耐老化，使用寿命大于20年。
With Compact & simple structure and high stability, fire retardant, anti-aging insulation material, the service life of the aluminum busbar system can last 20 years.
- 一般安装于车间行车梁背面或沿墙铺设，占用空间少，整体美观，
Small size and environmentally beauty: the location is the back of the beam or along the wall.
- 配电引出方便灵活（可用母线硬连接或用铜编织线软连接），机动性强
Flexible end feed, it can be connected to the switchgear directly or by flexible braided copper wire.
- 日常维护量小。
Free-maintenance.

二、技术要求 technical parameter

- 产品符合IEC439-2（GB7251.0-2006标准要求制造）
Conforms to IEC439-2（GB7251.0-2006）
- 产品使用环境温度：-10℃~70℃（24小时内平均温度不大于+50摄氏度）
Ambient temperature: -10℃~70℃（within 24 hours, average temperature less than +50℃）
- 产品适用于额定电压660V/380V,频率50Hz,额定电流最大4000A
Rated voltage 660V/380V, frequency 50Hz, Max. Current 4000A.
- 产品一般应用于室内。当用于室外时，必须外加金属防护槽。
Indoor application. For outdoor application, metal cover should be installed.
- 产品防护等级IP54,污染等级为3级
IP degree: IP54. Pollution degree: III.



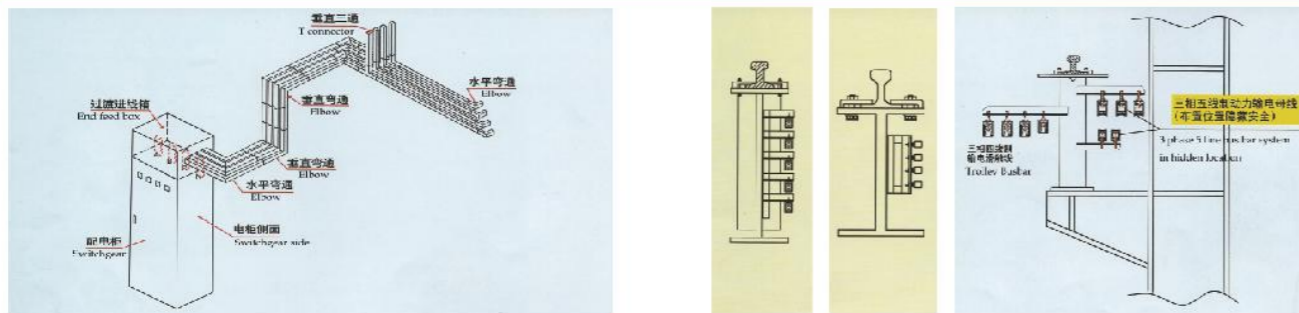
三、铝基母线规格 Aluminum busbar specification:

规格 Specification	额定电流 Rated current (A)	导体尺寸 Conductor Cross Section	外壳厚度 Housing Thickness	环境温度 Ambient Temperature	电阻 Resistance(Ω) 50Hz/380V
TBHM-400	400A	32 × 32	2.7mm	35℃	0.010907
TBHM-500	500A				0.009848
TBHM-630	630A				0.008549
TBHM-800	800A				0.006733
TBHM-1000	1000A	50 × 50	3.0mm		0.004977
TBHM-1250	1250A				0.003095
TBHM-1600	1600A				0.002441
TBHM-2000	2000A				0.010907
TBHM-2500	2500A	72 × 72	3.0mm	0.001929	
TBHM-3150	3150A			0.001715	
TBHM-4000	4000A			0.001323	

四、主要部件 main components



五、安装图示 installation layout



垂直安装与侧面安装
Vertical mount and side mount

GCMC树脂浇注母线槽(防尘、防水、防火) GCMCresin cast busbar trunking (dustproof, waterproof, fireproof)

一、产品说明 Product Description

● 适用于各种复杂环境 Application for various environments

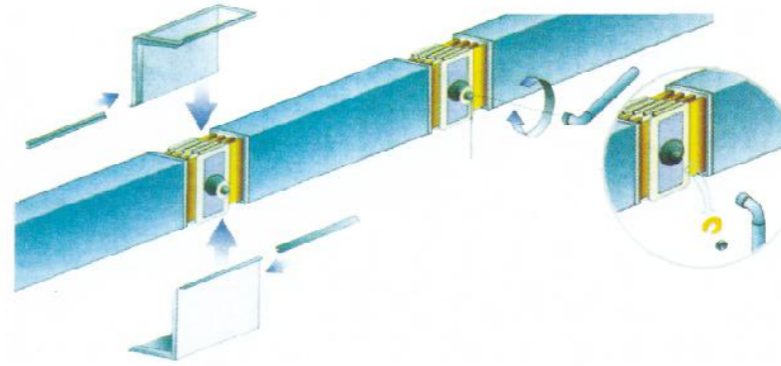
公司新研制成功的GCMC固体全封闭防水母线槽，在保留传统密集母线槽结构紧凑，安全可靠的基础上，利用树脂浇注固化的科研成果，加上耐腐蚀高强度铝合金外壳，解决了其它形式母线槽不能防潮、防水、防火、防腐蚀等问题。特别适合在船舶、港口、地下室、地沟、高层建筑竖井等水雾酸碱等复杂环境下使用。

With the enclosure made of al-alloy, GCMC Solid Enclosed Water-proof Bus Duct has many advantages such as: humidity-proof, water-proof, fire-proof, anti-corrosion, compared with the traditional types of bus duct. It is especially suitable for the complex environments such as: ships, ports, underground rooms, multi-layers buildings with water, fog, acid and alkali and etc.

● 更高的防护等级 Higher IP Grade

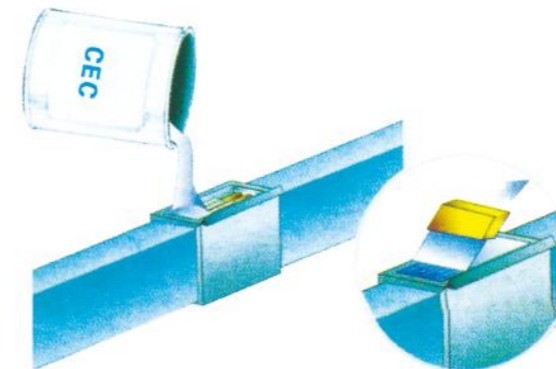
固体全封闭母线槽内部采用高性能的合成树脂进行整体浇注，导电铜排之间用高性能的热缩套管和绝缘板定位，不但能有效的防水防尘，还能防止酸、碱等化合物对铜排的腐蚀及氧化。同时合成树脂还有阻燃性，经国家权威部门检测，防护等级达到IP68。

The inside solid molding of the synthetic resin with high quality, the pyro-condensation bushing and insulating board orientation can protect the bus duct effectively from either water and dust or the corrosion or oxidization from acid or alkali. The IP grade can be up to IP68 tested by the national authorization.



安装好连接器并旋紧连接器螺栓达到预先设定力矩，力矩螺母头会自行脱落
Tighten the bolt unit until the shear of the outer head.

将高性能绝缘材料CEC浇注入模具中
Pour high insulation material CEC immediately into mould until completely filled up to rim.



防喷水防水母线槽在工程中应用实例
Defend spraying water and apply the embodiment in project with waterproof bus bar trough



BMC 母线槽系统 BUS DUST SySTEM

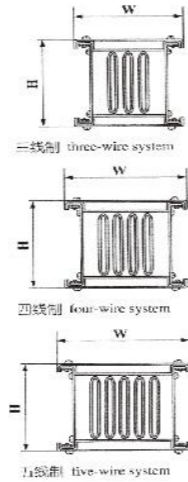
一、产品特点及应用Characteristicsandapplication

BMC空气绝缘封闭母线槽吸取了美国空气型母线之精华，进行优化设计，采用双层绝缘，隔相垫块采用4220耐电弧粉制成，防爆、阻燃，从而弥补了母线绝缘材料耐高温性能之不足，使其更安全可靠，并能承受较大的电动力和较好的散热性能，扩大了该系列产品的应用领域。特别适合用于工矿企业大中型机电设备的输配电。

BMC separating high intensive seal bus c~annel is made with the double layer insulation and 4220 electric arc powder through absorbing the extraction of air type of bus with explosion-proof and flame retardant performance from U.S. And further optional design. This can counteract the weakness of insulation material not beating high temp, and make it safe, reliable; and bear larger power; and have better radiation. So it can enlarge the applicable fields and be suitable for the transmit electricity and the distribution for the medium and large sized mechanoelectrical equipments in industrial and mining enterprises. especially applied to modernizing the workshops and old enterprises.



空气型母线槽
Air insulated busbar trunking



二、BMC铝质母线Bmc Aluminum Buses 三、BMC铜质母线Bmc Copper Buses

电流 (A) Current(A)	三线制 three-wire system		四线制 four-wire system		五线制 five-wire system	
	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)
100	160	100	180	100	200	100
250	160	100	180	100	200	100
400	160	110	180	110	200	110
630	160	120	180	120	200	120
800	160	130	180	130	200	130
1000	160	150	180	150	200	150
1250	160	180	180	180	200	180
1600	160	220	180	220	200	220

三线制 three-wire system (A)	三线制 three-wire system		四线制 four-wire system		五线制 five-wire system	
	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)	W(mm)H(mm)
100	160	100	180	100	200	100
250	160	100	180	100	200	100
400	160	110	180	110	200	110
630	160	120	180	120	200	120
800	160	130	180	130	200	130
1000	160	150	180	150	200	150
1250	160	180	180	180	200	180
1600	160	220	180	220	200	220
2000	160	220	180	220	200	220
2500	160	255	180	255	200	255
3150	160	440	180	440	200	440

LCMC-1铝质母线槽 LCMC-1 Aluminium Case Busbar

一、产品特点及应用Characteristicsandapplication

属于密集型母线，单元直线段全长密集，导体之间保持紧凑的“三明治”结构，无任何缝隙。采用铝镁合金外壳，质量轻强度高，表面静电粉末喷涂，具有较强的抗腐蚀能力和耐氧化性。而且由于铝镁合金外壳为无磁材料，所以能避免钢制外壳母线运行时产生的磁滞损耗现象。

电流：630A~1600A

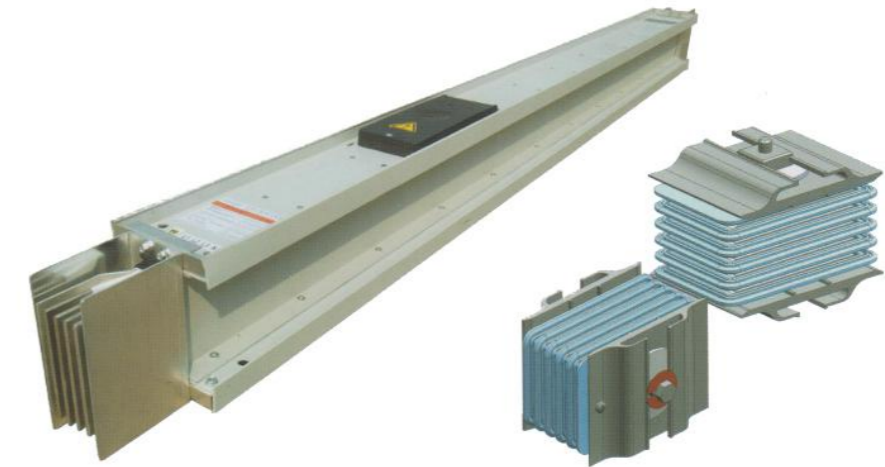
母线防护等级高达IP54，可在户外使用。

导体采用优质铝排，纯度高

导体表面镀铜锡，该绝缘材料抗老化性强，达到B级绝缘，耐温130℃。

LCMC-1母线槽插接灵活。上业水平安装时，长4m的母线上最多可带9个插口。选择在于你，购买时只须说明要求。

独特的防错相单螺栓连接器，有助于更加安全、快速的安装。插口间最小间距为575mm，母线槽系统主要用于变压器与配电柜之间的输电及配电柜为负载提供的配电



密集型母线槽
Compact busbar trunking

接头连接器
Joint connector

Belong to bus-intensive, unit-length straight-line paragraph, the conductor of the compact between the sandwich structure, without any gap

Use of aluminum-magnesium alloy shell, light weight, strength, electrostatic Power coating on the surface, has strong anti-corrosion-resistant-and oxidizing. But also because of aluminum-magnesium alloy shell for non-magnetic materials, they are able to avoid the steel shell of the bus journey when the phenomenon of hysteresis loss

Current: 630A - 1600A

Bus protection level up to IP54, can be used outdoors

Use of high-quality aluminum conductor line of high purity

The surface copper-tin conductors parcel of DuPont

B insulation, the temperature 130℃.

LCMC-1 busbar trunking system offer the ultimate plug-in opening flexibility for industrial horizontal runs with up to nine openings on a standard three metre length at 575mm centres. The choice is yours, to purchase only the openings that you require.

Unique anti wrong with single-bolt connector. and contribute to a safer, faster to install. Minimum distance between the jack for 575mm, Busway system is mainly used in transformers and distribution of the cabinet between the transmission and distribution to counter the load to provide power distribution.

ZM照明母线

ZM Lighting Busway

一、产品特点及应用 Characteristics and application

快速安装、流线化设计的ZM型照明母线系统
Faster Installation.ZM Type Lighting Busway System of Flow Line Design



ZM型照明母线系统额定工作电流为16A~250A，该系统特别适用于大开间场所的照明供电，如：大型商场、超市、展览厅、车站、机场、办公楼、工业厂房等，该系统提供的防护等级为IP55，能在比较潮湿或较多粉尘的环境中使用。

The rated working current of ZM type lighting busway system is 16A-250A, it is used it lighting of big house, such as: big emporium,supermarket,Exposition hall,station,airport,office building,factor house and so on.The system's protection grade is ip55,it can work in the environments of most moisture or lots of fragment.

二、可靠的流线化设计 Reliable streamline design

ZM型照明母线外壳为铝镁合金一次成形，外形美观、结构紧凑，具有极佳的承载能力。单元间连接采用专用连接器，插接口分布均匀用户可就近取电。系统配置齐全，配置有专用吊架及灯具吊架等，可满足各种类型灯具的吊装。

ZM lighting busway shell for aluminum magnesium alloy a shape,beautiful appearance,compact structure,high bearing capacity of excellent. Units are connected by the connector,plug interface distribution,the user may nearby to take power.System configuration is complete,equipped with special hanger and a hanging lamps and so on,can meet the lifting of various types of lamps and lanterns.

三、插接可靠、安装快捷 Reliable socket, Taster installation

ZM型照明母线电流分接插头设有机械联锁装置，可有效保证插接可靠性，专用连接器使安装过程简单、快捷不需要专用工具。

ZM lighting bus current tap plug is provided with a mechanical interlock device,can effectively guarantee the reliability of special connector plug,the installation process is simple,fast,no need of special tools.

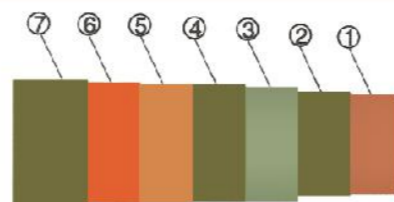
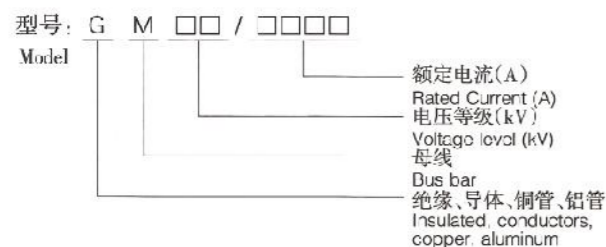


符合标准 Conform to Standard	IEC60439-1.2;GB7251.1-2-1997		
防护等级 Protection Grade	IP55		
额定工作电流 Rated Current	A	40	63
动稳电流 Dynamic Current	KA	3.75	4.5
热稳电流 Thermal Current	KA	2.5	3
温升 Temperature Rise	K	连接端子60K, 金属外壳30K Connecting Terminal 60K.Metal Enclosure 30K	
介电强度 Media Strength	交流工频电压2000V有效值/min AC frequency voltage 2000V/min		
绝缘电阻 Insulation Resistance	相与相及外壳之间不小于20MΩ Between Phase and enclosure ≥20MΩ		

GM绝缘管形母线

GM Insulated tubular busbars

一、屏蔽绝缘管形母线 shield insulated tubular busbars



图一 Figure 1

1、导电铜(铝)管; 2、半导体层; 3、主绝缘层; 4、均压层; 5、铜网接地屏; 6、热缩绝缘管; 7绝缘护套管。
绝缘管形母线是由圆形导电铜(铝)管、半导体层、主绝缘层、均压层、接地屏蔽层、热缩绝缘层和绝缘护套层组成,铜(铝)管母线经弯管和加工后,在恒温恒湿无尘的净化环境下进行绝缘的制作。单根母线长6-8米其结构严谨,性能稳定(在电力工业电气设备质量检测中心原武高所电气设备质量检测中心通过型式试验),母线外置的铜网接地屏电位为零,安全可靠,可避免意外接触造成触电、短路等安全事故。

例如: 额定电压10kV(系统最高电压12kV), 额定电流4000A屏蔽绝缘铜管母线

名称: 10kV屏蔽绝缘铜管母线

型号: GM12 / 4000

特性: 全屏蔽绝缘, 母线整段表面电位为零。

适用安装环境: 户外、户内、空间狭小的电缆沟、电缆夹层、电抗器室。

1、A conductive copper (aluminum) tubes; 2, semi-conductive layer; 3 the main insulation layer; 4 are laminated; 5, grounding copper mesh screen; 6, thermal insulation tubes; 7 insulated sheathing.

Insulated tubular busbars by a circular conductive copper (aluminum) tubes, semi-conductive layer, the main insulation layer are laminated ground shielding layer, thermal insulation layer and an insulating jacket layer, copper (aluminum) tube bending by bus after the tube and processed under constant temperature and humidity and dust-free clean environment insulation production. Single busbar 6-8 meters long, and its well-structured, stable performance (in the electric power industry equipment quality inspection center of the original Wuhan High quality electrical equipment testing center by the type test). External bus copper mesh screen potential ground zero, safe and reliable, to avoid accidental contact with electric shock, short circuit accidents.

For example: Rated voltage 10kV (highest system voltage of 12kV), rated current 4000A shielded insulated copper busbar

Name: 10kV shielded insulated copper busbar Model: GM12/4000

Features: Fully shielded insulation, bus entire surface potential is zero.

Applicable installation environment: outdoor, indoor, cramped cable channel, cable mezzanine, reactor chamber.

二、半绝缘管形母线 semi-insulating pipes

例如: 额定电压10kV(系统最高电压12kV), 额定电流4000A半绝缘铜管母线

名称: 10kV半绝缘铜管母线

型号: GM12 / 4000

特性: 在母线支持部位、室内部分、穿墙部分采用屏蔽绝缘

结构(结构见图一), 其他部位采用聚四氟乙烯、热

缩绝缘母排管和热缩黑护套管作绝缘防护(结构见图二)

适用安装环境: 户外+户内。

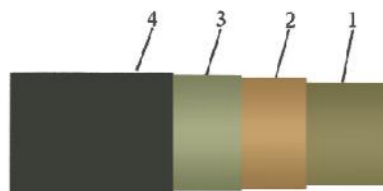
For example: Rated voltage 10kV (highest system voltage of 12kV), rated current 4000A semi-insulated copper busbar

Name: 10kV semi-insulated copper busbar

Model: GM12/4000

Features: support in bus parts, interior parts, partially shielded wall insulation structure (structure shown in Figure a), other parts of PTFE, thermal insulation and heat shrink busbar tube black sheathing for insulation protection (structural Figure 2).

Applicable installation environment: outdoor + indoor.



图二 Figure 2

- | | |
|------------|--------------------------------------|
| 1. 导电铜(铝)管 | 1. Conductive Copper(aluminum) tubes |
| 2. 热缩绝缘管 | 2. Thermal insulation pipes |
| 3. 聚四氟乙烯 | 3. Teflon |
| 4. 绝缘护套管 | 4. The insulating sheath tube |



1.GM母线与常规母线相比较具有如下优点:

GM bus compared with the conventional bus has the following advantages:

集肤效应低、单位截面载流量大

Skin effect is low, the Unit containing large flow cross-section

GM母线采用铜管为主导体,铜管外表为圆形表面,电荷分布均匀,不象矩形母线有棱角,表面电荷容易聚集在棱角处,引起母线局部发热,造成能源的浪费。另外,铜管为空心导体,集肤效应低,单位截面载流量大于常规矩形母线。例如:铜管导体为 $\Phi 100 \times 5$,截面积是 1491.5mm^2 ,载流量可达到 3150A ,电流密度为 $2.11\text{A}/\text{mm}^2$,温升 $<45\text{K}$;而矩形母线载流 3150A ,需选用2片 120×10 的铜排,电流密度为 $1.31\text{A}/\text{mm}^2$,温升却在 70K 左右。

GM bus using copper-based conductors, round brass exterior surface, uniform charge distribution, unlike the rectangular bus angular surface charge easily gathered at the edges and corners, causing the bus localized heating. Wasted energy. In addition, copper hollow conductor skin effect is low, the unit carrying capacity greater than the conventional rectangular cross section of the bus. For example: copper conductor $\Phi 100 \times 5$, the cross-sectional area of 1491.5mm^2 , carrying capacity up to 3150A , the current density is $2.11\text{A}/\text{mm}^2$, temperature $<45\text{K}$; rectangular bus carrier and 3150A , the need to use the two 120×10 copper, the current density is $1.31\text{A}/\text{mm}^2$, but the temperature rise of about 70K .

散热条件好

Good heat dissipation

GM母线因选用铜管作为主导材料,中部为空心,热空气在导体内部能形成空气对流,散热条件好,而常规矩形母线及电缆是无法达到这一效果的。

GM bus because copper as the leading choice of materials, the central hollow, hot air inside the conductor can be formed in the air convection, thermal conditions, while the conventional rectangular bar and cable are unable to achieve this effect.

允许应力大、跨距大、机械强度高 Allow stress, span, high mechanical strength

GM母线可承受的短路电动力远远大于矩形母线。铜管母线跨距最大能达到9米,如果采用双钢架结构支撑,其跨距最大能达到14米,可直接进入高压室与开关柜或电抗器连接,减少了常规母线所需的支柱绝缘子、母线金具及土建工程。加上母线采用钢架结构支撑,从而具有较强的抗震能力。

GM bus can withstand short-circuit power is far greater than the rectangular bus. Copper busbar span can reach 9 meters maximum, if the use of double steel structural support, can reach its maximum span of 14 meters, with direct access to the high-pressure chamber or reactor switchgear connection, reducing the required post insulators conventional bus, bus fittings and civil works. Plus bus using steel structural support, which has a strong anti-vibration capability.



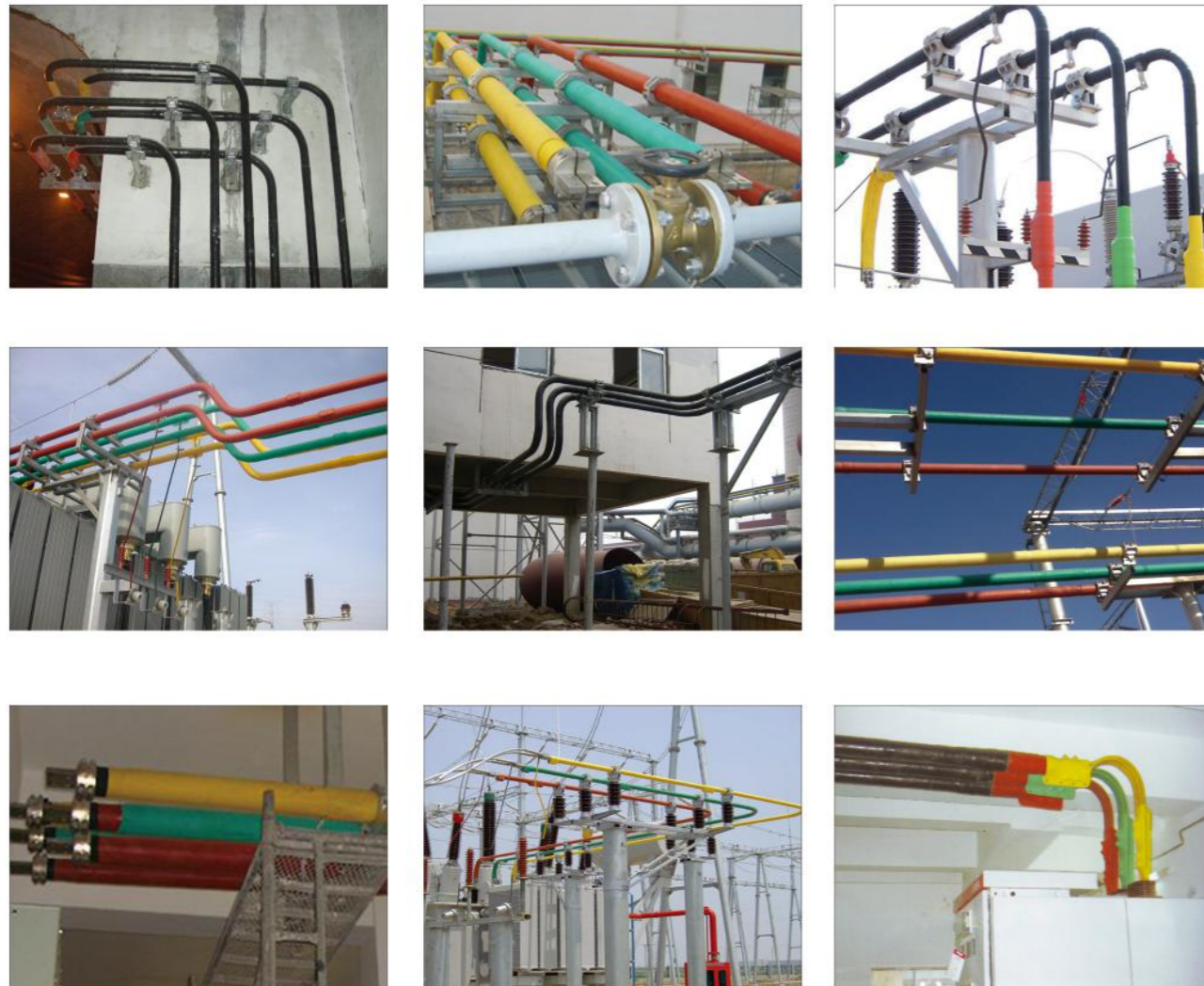
电气绝缘性能强、主绝缘材料稳定性高 Electrical insulation performance.high stability master

GM母线的绝缘是一种由多重绝缘材料和屏蔽材料相互交替形成的绝缘结构，电位由里及外逐层降低，直到表面电位为零。多重屏蔽层保证了每层绝缘层表面的电荷分布均匀，避免了绝缘层表面产生局部放电，且不受其它相母线的电场和磁场的干扰，加上主绝缘材料采用聚四氟乙烯，有优良的电气性能和化学稳定性、介质损耗小、阻燃、耐老化、使用寿命长。

Insulation G M bus is an insulating structure formed by multiple alternating insulation and shielding materials, reducing potential from the inside and outside layer by layer, until the surface potential is zero. Multiple shield to ensure uniform surface charge distribution of each of the insulating layer, the insulating layer surface to avoid the generation of partial discharge, and interference from other electric and magnetic fields relative to the bus, the main insulating material with PTFE has excellent electrical properties and chemical stability, dielectric loss, flame retardant, anti-aging, long service life.

母线结构简单、明了、布置清晰、安装方便、维护工作量少。

Bus structure is simple,clear,clear layout,easy installation,low maintenance.



三、技术参数 Technical parameters

额定电压 Rated voltage	工频耐压、历时 1min Frequency voltage, which lasted 1min	额定电流 Rated Current (A)	管径 Diameter (mm)	电流密度 Current Density (A/mm ²)	最大有效跨距 The maximum effective span (m)
10kV	42kV	1000	Φ60×5	1.15	6
		2000	Φ60×8	1.53	7
			Φ100×5	1.34	
		3000	Φ60×10	1.91	
			Φ100×6	1.34	
		4000	Φ100×8	1.73	7
		5000	Φ100×10	1.77	
		6000	Φ100×10	1.92	
7000	Φ100×10*2	1.65			
35kV	85kV	8000	Φ100×10*2	1.75	5
		1000	Φ60×5	1.15	
		1500	Φ60×6	1.42	6
		2000	Φ60×8	1.53	
		3000	Φ100×6	1.34	7
		4000	Φ100×8	1.73	
5000	Φ100×10	1.77			

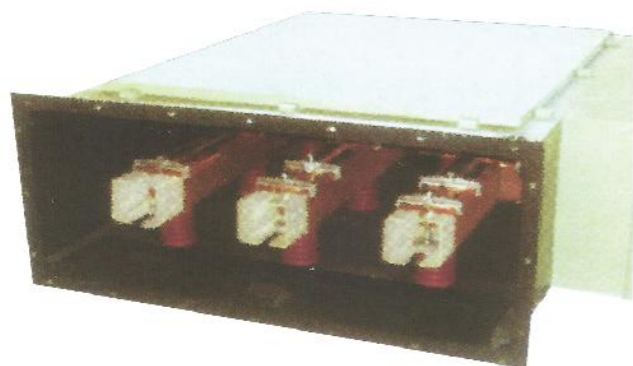
直径 Diameter (mm)	厚度 Thickness (mm)	根数 Diameter (mm)	截面积 Diameter (mm ²)	试验电流 Diameter (mm)	截流密度 Diameter (mm)	温升 Temperature Rise (3.5h)		
						前端 Front	中段 Middle	后端 Backend
60	5	1	863	1500	1.738	30.4	41.2	32.6
60	6	1	1017	2000	1.967	33.7	42.8	36.4
60	8	1	1306	2500	1.914	34.3	40.9	37.2
100	5	1	1491	3150	2.112	31.5	35.8	32.9
100	8	1	2311	4000	1.731	40.8	38.2	40.3
100	10	1	2826	4000	1.415	38.4	35.6	37.1
100	10	1	2826	5000	1.769	38.9	43.7	40.2
100	12	1	3315	5000	1.508	26.4	36.7	28.9
100	6	2	3541	6300	1.779	32.1	39.2	36.1
100	7	2	4088	6300	1.541	24.3	30.2	26.8
100	10	2	5652	8000	1.415	35.1	41.5	38.9
100	12	2	6630	9000	1.357	37.8	43.2	41.3
100	14	2	7561	10000	1.323	31.3	42.1	36.4

备注：以上试验是采用6米长的铜管，试验环境为密封室内，没有空气流动，环境温度为33℃，相对湿度为65%的情况下所得到的试验数据。

Note: The above test is a 6-meter-long copper tube, the test environment for the sealed room, no air flow, the ambient temperature is 33 °C, relative humidity 65% of the experimental data obtained in the case.

GM-1系列共箱封闭母线系统 GM-1 Three Phase in One Box Sealing Busway

一、高压大电流设备的理想选择 is the best choice of HV large current



高压母线槽
high voltage busbar trunking

GM-1三相共箱封闭母线系统外壳采用铝合金或弱磁钢板（不锈钢）制造，内部导体为矩形、槽形母排（铜或铝），系统额定电流可达6800A，额定工作电压达35kV。该系统可广泛应用于发电机出线与变压器之间或变压器与高压配电柜之间的电流传输，也可应用于发电机交、直流励磁回路，变电所用电引入或其它工业、民用设施的电源引线。

The frame of GM-1 three phases in one sealing busway is aluminum alloy or weak magnetic steel plate (stainless steel), inner shape conductor is rectangle, channel type (copper or ally), system current can up to 6000A, rated working current up to 35KV. It is widely used between outgoing of power and transformer or between transformer and HV switchgear to transmission current, it can also used in DC or AC fieht circuit of power, it can be used as power lead wire of electric substation or other industry, domestic facilities.

二、安全可靠 Safety and reliable

母线导体选用高强度大爬距绝缘子支撑，使系统具有较高的抗短路电动性能，合理的绝缘子支撑间距的设置，充分避免了系统共振的危险，全连续外壳并多点接地方式杜绝了人身触电危险。

Support busway conductor is high strength large span insulator porcelain, it can make the system has good ability of prevent short circuit, and the possible installation support distance of insulator porcelain avoid the danger of system resonance, all over continuative frame and multiple earthing point prevent people contact power.

三、温升高 Lower temperature rise

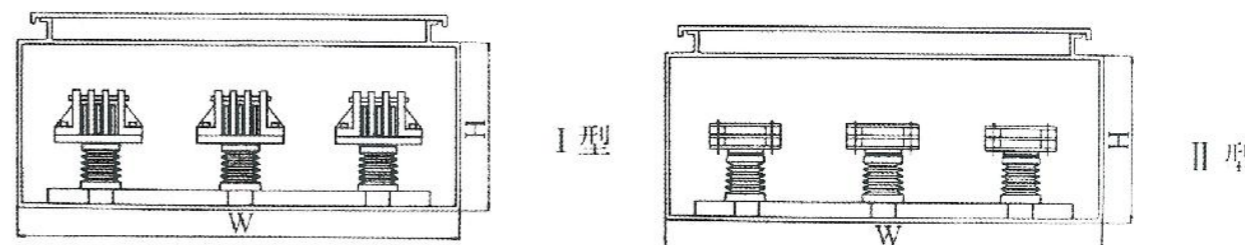
母线外壳采用铝合金或弱磁材料可避免感应涡流发热，降低其温升，同时提高了散热性能，导体接头表面采用镀银处理，降低了接触电阻，使导体接头处拥有较小的温升，提高了导电性能。

The frame of busway is aluminum alloy or weak magnetic material can prevent induction eddy current heat, lowering temperature rises, and improves abstract heat ability, conductor connection face is covered with silver, it can lowering contact resistance, make the connection point has litter temperature rise, and improved the conducting power.

四、防护等级高，运行维护方便 High protection degrees, easy operation and maintain

母线外壳防护等级达，P54，可消除外界潮气、灰尘及外物引起的接地故障。在系统两端或重要部位可设置观察窗、温度警示标记、或测温远程监控置，运行维护方便。

Protection degrees of the frame up to IP54, it cans elimination outside moisture, dust and earthing trouble because of outside objects. Watching window, temperature remind tap or long distance supervisory control device of temperature test and so on to the two point of system or important area.

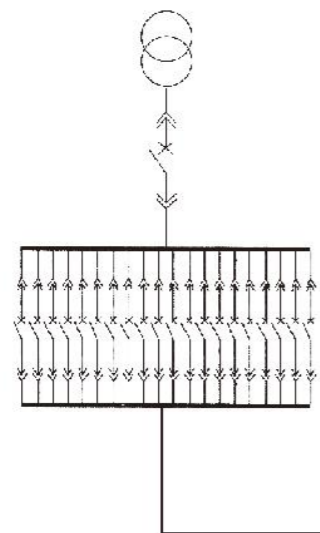


符合标准 Applicable standard		IEC363-5-54、GB/T8439-2000、JB/T9639-1999			
环境温度 Environment temperature	℃	- 40~ + 40			
相对湿度 Relative humidity		日均值不大于95%，月平均值不大于90% daily the average is not above 95%, monthly the average is note zbove 90%			
防护等级 Preteadable grade		IP40、IP54			
额定电压 Rated volatge	kV	3.15	6.3	10.5	35
最高工作电压 Best work voltage	kV	3.45	6.9	11.5	40.5
绝缘等级 Isolated grade	kV	18/40	23/60	35/75	80/185
额定频率 Rated Frequency (Hz)	Hz	50(60)			
额定工作电流 Rated vprk electric current	A	外型尺寸(W×H)(mm×mm)			
1000-3000		I 750×400 II 850×350	I 900×560 II 1060×460	I 900×560 II 1060×460	I 1500×920 II 1800×880
3500		I 750×440 II 850×480	I 900×560 II 1060×460	I 900×560 II 1060×460	
4000		I 750×440 II 850×480	I 900×560 II 1060×460	I 900×560 II 1060×460	
4500		I 750×440	I 900×560	I 900×560	
5000		I 1350×500	I 1500×600	I 1500×600	
6300		I 1350×500	I 1500×600	I 1500×600	

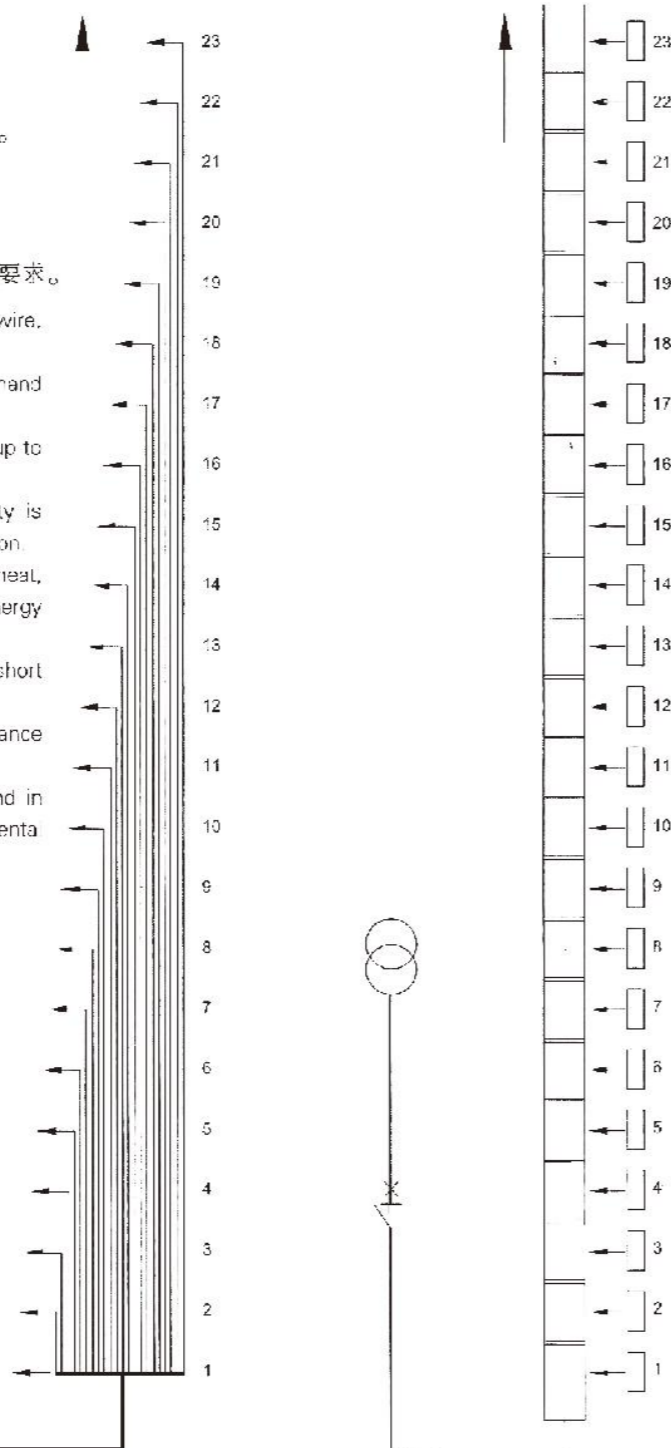
五、母线槽供电系统特点 Trough electric power system characteristic of bus bar

- 1、树干式配电系统,接线简单,运行可靠。
- 2、分接方便,勿需切断主电源,即可分接。
- 3、供电容量大,可高达 6300A 载流。
- 4、绝缘强度高,过载能力强,防火性能优越。
- 5、散热性能好,阻抗低,损耗小节约电能。
- 6、机械强度高,短路冲击稳定性好。
- 7、占用空间少,外形美观,安装维护方便。
- 8、性价比高,适用范围广,能满足不同环境要求。

1. Trunk type distribution system, it is simple to wire, it is reliable to run.
2. Shunting conveniently, it don't cut off demand main power source, can shunting
3. Capacity of supplying power is large, can be up to 6300A and flow in year.
4. Dielectric strength is high, overload capacity is strong, performance is superior than fire prevention.
5. It is of good performance to dispel the heat, impedance is low, loss and save the electric energy small.
6. The mechanical intensity is high, it is good to short out and assault stability.
7. Take up empty and department little, appearance esthetic, install, maintain convenient.
8. The cost performance is high, applicable and in extensive range, can meet different environmental requirements.



电缆供电系统
Cable power supply system



梦想城供电系统
Bus bar power supply system

六、母线槽安装示意图 Layout of bus duct installation

