



ENJ环氧树脂浇注母线系列

LENJ SUPER COMPACT RESINA BUSBAR SYSTEM

产品手册

YINENG ELECTRIC



江苏亿能电气有限公司
JIANGSU YINENG ELECTRIC CO.,LTD.



» 公司简介

江苏亿能电气集团位于江苏省扬中经济开发区,前身为成立于1986年的镇江市亿能电力器材有限公司。经过二十余年的发展,年生产能力超20亿元。集团产品遍及高低压成套电器设备、高低压母线、电缆桥架、金属套管、电加热器、船舶军工配套产品等6大系列产品。

江苏亿能电气集团秉持“科技、人文、责任”的核心价值观,全面推行信息化管理,实行企业架构下的品牌、质量、营销、研发等方面的统一管理。以全球化的视野、卓越的品质、周到的服务、高效的管理赢得了客户的青睐,并与Schneider、Eaton、GE、ABB签订了战略合作协议。集团产品被国家电网、中石油、中海油、国家开发银行、中国移动、中国联通、中国博览会会展中心、上海宝钢、葛洲坝水电站、渤海船舶重工、大连万达集团、碧桂园集团、长春一汽等国家重点项目和重大工程采用,深受客户好评。

江苏亿能电气集团是江苏省重点扶持的成长型企业、江苏省民营科技企业、镇江市文明单位、镇江市园林式单位、中国建设银行“AAA”级信用企业。集团先后通过了ISO9001质量管理体系认证,ISO14001环境管理体系认证、OHSAS1800职业健康认证、ISO10012测量管理体系认证、KEMA认证、国家强制性3C认证等认证,荣获了“国家重合同守信用企业”、“江苏省著名商标”、“江苏省名牌产品”、“国家高新技术企业”称号。

江苏亿能电气集团,秉承“科技彰显人文,责任成就未来”的企业宗旨,不断聚集中国顶尖水平的电气高新技术,汇集电气发展的精英才俊,全力打造系列化、多元化的优势产品,实现更大规模、更深层次地发展。“亿”气风发,能者为先,她正在向着打造中国电气行业著名企业的目标,阔步奋进、再创辉煌。



BRIEF INTRODUCTION

Jiangsu Yineng Electric Group is located in Jiangsu province Yang economic development zone, predecessor was founded in 1986, Zhenjiang Billion to Electric Power Equipment Co., LTD. After more than 20 years of development, annual production capacity of more than 2 billion yuan. Group products in high and low voltage complete sets of electrical equipment, high and low voltage busbar, cable tray, metal casing, electric heater, military products and so on six big series of products of the ship.

Jiangsu Yineng million can electric group grasps "the science and technology, humanities, and responsibility" core values, comprehensive information management, implementing enterprise architecture under the brand, quality, marketing, research and development of unified management. With global perspective, excellent quality, considerate service, wins the favor of customers, and efficient management and Schneider, Eaton, GE, ABB signed a strategic cooperation agreement. Group products by the national power grid, PetroChina, CNOOC, China Development Bank, China Mobile, China Unicom, China Expo Exhibition Center, Shanghai Baosteel, Gezhouba Hydro-power station, the Bohai Sea Ship Heavy Industry, Dalian Wanda Group, Country Garden Group, Changchun FAW, such as national key projects and major projects, well received by customers.

Jiangsu Yineng million can electric group is a key support the growth of enterprises in Jiangsu province, private technology enterprises in Jiangsu province, Zhenjiang civilized unit, Garden Unit of Zhenjiang City, China Construction Bank "AAA" grade credit enterprise. Group has passed the ISO9001 quality management system certification and ISO14001 environmental management system certification, OHSAS1800 occupational health certification, ISO10012 measurement management system certification, KEMA certification and national mandatory 3 e certification certification, was awarded the "national contract trustworthiness enterprise", "Jiangsu province famous trademark", "brand-name products in Jiangsu province", "national hi-tech enterprise" title.

Jiangsu Yineng million can electric group, adhering to the "science and technology reveal the humanities, responsibility achievement future" corporate purposes, continuously together China's top level electrical high and new technology, electrical development of elite talent, a advantage of seriation, diversified products, to achieve a larger and deeper development. "Million" gas, almighty first, she is to build China's electrical industry well-known enterprise target, forge ahead, create brilliant.

目 录 CONTENTS

CONTENTS

系统描述	1
特征优势	2
加工工艺	3
产品应用	4
1KV低压母线系统	5
功能单元	6-11
系统附件	12-13
母线安装	14-17
技术数据	18
产品编号	19
物理数据	20-21
3.6KV-17.5KV中压母线系统	22-27

全封闭环氧树脂浇注母线系统

1KV ENJ 低压母线系统 630A-6300A

Super compact resina busbar system

1KV ENJ low-voltage busbar system 630A-6300A

产品主要特性 Main features

防火

Fireproof

耐火极限时间长，性能可靠稳定，可应用于消防安全要求高的场合。

防腐

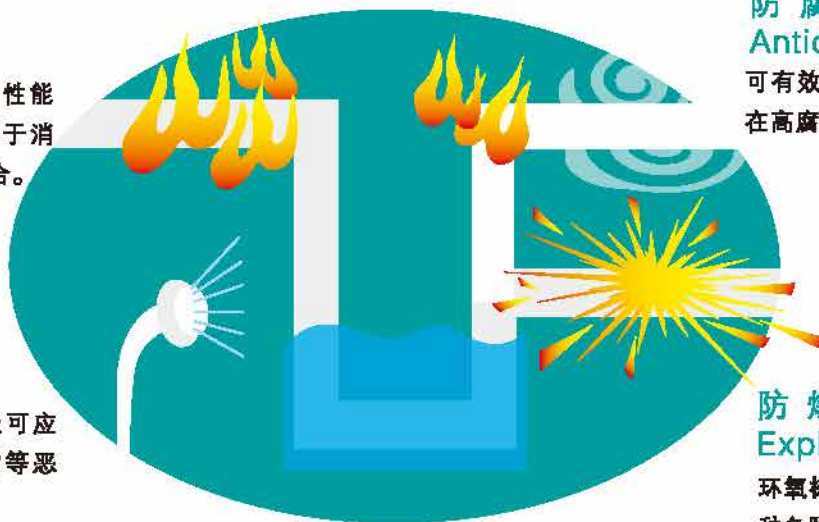
Anticorrosive

可有效防止电、化学腐蚀，能在高腐蚀性环境中长期适用。

防水

Waterproof

IP68的高防护等级可应用在户外、电缆沟等恶劣环境中使用。



IP68超高防护

防爆

Explosive resistant

环氧树脂浇注外壳能适用于各种危险性环境。

其他优势

环氧树脂混合物配方独特
功能单元可定制
机械强度高
短路强度大
过载能力强
适用性强
安装简便
终身免维护

Other advantages

Unique epoxy-resin mixture
Tailor made functional unit element
High mechanical strength
High short-circuit strength
High over-load capability
Strong adaptability
Simple installation
Maintenance free

ENJ环氧树脂全封闭浇注母线设计有1KV低压系统，额定电流从630A-6300A，防护等级高达IP68，是低压配电领域的新一代输配电系统。ENJ全封闭浇注母线能适用于各种恶劣与高洁净环境，被广泛应用于造船、电厂、石油化工、钢铁冶金、机械电子和大型建筑等各种场所。

ENJ super compact resina busbar from 1KV voltage system with rated current range from 630A-6300A have a degree of protection IP68, is developed as a new transmission and distribution system in low voltage installations and widely used in shipbuilding, electrical factory, petrochemical, steel metallurgy, mechanical electronic and large buildings, etc.

「特征优势」PRODUCTS

环氧树脂外壳配方

环氧树脂具有极大的配方设计灵活性和多样性，能按不同的使用性能和工艺性能要求，设计出针对性很强的最佳配方，这是其应用的一大特点和优点。同时不同配方的环氧树脂固化体系的固化原理不完全相同，即固化工艺条件对环氧固化物的结构和性能影响极大。所以如何正确地做出最佳材料配方设计和工艺设计才是环氧树脂应用技术的关键，也是核心技术所在。

公司结合市场需求与世界最大的化学公司CIBA在浇注母线应用领域共同研制开发环氧树脂已有二十多年的历史，到目前为止，这是研制开发的ENLR浇注母线环氧树脂第三代产品，配方设计及工艺设计独特，可适用于对母线使用性能要求高的场合，尤其是对综合性能要求高的领域。

ENJ母线系统外壳由环氧树脂和多种惰性矿物绝缘材质经过严格配制后整体浇注成型，并且该材料具有优越的电气绝缘性能及良好的散热性能。

Epoxy-resin enclosure

One of the application advantages is epoxy-resin with its flexibility and multiformity, can be designed for the best solution according to requirements of different usage capabilities and craftwork performances. Meanwhile different epoxy-resin is with different solidify theory. The structure and capability of epoxy condensate is strongly influenced by solidify conditions. So the crucial and important application technique is how to make the best material solution and craftwork design correctly.

combining market requirements with CIBA the biggest chemical company in the world has an over 20 years history in developing epoxy-resin in ENJ-busbar application fields. Till now, it is the third generation product of ENJ-busbar epoxy-resin with the advantage of unique design and craftwork, applied for the fields required high usage capability especially high integration capability.

The enclosure of ENJ busbar system is made from various inert minerals such as epoxy resin, quartz etc. The material is provided with good electric insulation and heat dispersion.

ENJ合成树脂主要优势

电性能优

固化后的合成树脂是一种具有高介电性能、耐表面漏电、耐电弧的优良绝缘材料。

机械强度高

固化后的合成树脂具有极高的硬度，耐磨、耐冲压且不会变形。

化学稳定性

固化后的合成树脂具有优良的耐碱性、耐酸性和耐溶剂性。

耐霉菌

固化的合成树脂耐大多数霉菌，可以在苛刻的条件下使用。

散热快

合成树脂耐高温，且其独特配方及工艺设计使得母线散热性能得到最大提升。

环保

合成树脂为不燃性材料，不含卤化物，亦不会对环境对人体造成危害。



Main advantages of Siemens ENJ resin

Good electrical performance

Solidified resin is a kind of good insulated material which is arc resistant and can prevent surface creepage.

High mechanical strength

Solidified resin is wearable, punch resistant, ametallic and with strong rigidity.

Steady chemical performance

Solidified resin is alkali-resistant, acid-resistant and impregnant-resistant.

Corrosive resistance

Most solidified resin is corrosive resistant and can be used in adverse atmosphere.

Quick heat dispersion

Solidified resin is high temperature resistant, and its unique design makes the busbar with quick heat dispersion.

Environment protection

Solidified resin is halogenfree, inflammable and emits no toxic gases.

德国进口真空搅拌铸件工艺

ENJ浇注母线系统引进拥有世界尖端连续铸造及工艺设计流程的真空搅拌技术对环氧树脂进行连续计量，均匀混合并脱气，工艺流程精确可靠，控制简单方便。

Technics imported from Germany

ENJ-busbar system imported vacucast technique which is possessed with top continuous cast and craftwork design process in the world. Measure epoxy resin continuously and mix equally. The process is accurate and credible and can be controlled simply and conveniently.

「产品应用」PRODUCTS



为石油精炼提供现代化的输配电系统

要求

为满足现在与未来的安全标准，石化行业的输配电在室内和室外都应要求高等级防护。

解决方案

ENJ系统防护等级IP68实现户外输配电——连接户外变压器和室内配电屏，可提供经济式试验的标准连接单元与EN- II系统相连，实现由户外到户内的输配电转换。

成效

标准连接部件均通过型式试验确保安全性，防护等级高。安装母线槽系统之间，以及与配电屏的连接采用标准连接部件，设计简单，安装快捷，高度节约成本，属于安全、紧凑的连接方案。



Modernized power transportation for oil refinery

Requirements

To meet current and future safety standards, the realization of the power supply for a petrochemical plant required high degrees of protection, both for the indoor and outdoor applications.

Solution

ENJ system with IP68 for outdoor power transportation—between outdoor transformers and internal power distribution boards Type-tested standard connection between the ENJ and ENJ systems for further power distribution inside the building with XL system

Result

Safety through type-tested components, connection pieces and high degree of protection Easy planning and mounting through standard connection components between the busbar trunking systems and power distribution boards Safe, compact and cost-effective solution

为地铁隧道提供安全配电系统

要求

地铁区间基础设施排风扇和用电设备对配电系统的安全性要求较高，特别是需要提供高等级人身保护，防止人为破坏。

解决方案

ENJ系统具备应用连贯性，对额外的措施具备持久的功能，IP68高等级防护。

成效

实现免维护；结构紧凑，节省空间；环氧树脂外壳抵抗力高；实现理想的系统和人身保护。

Safe power distribution in subway tunnel

Requirements

A safe power distribution solution was required for the smoke fans and consumers in the track section of a subway infrastructure. Important factors entailed a high personal protection and prevention of vandalism.

Solution

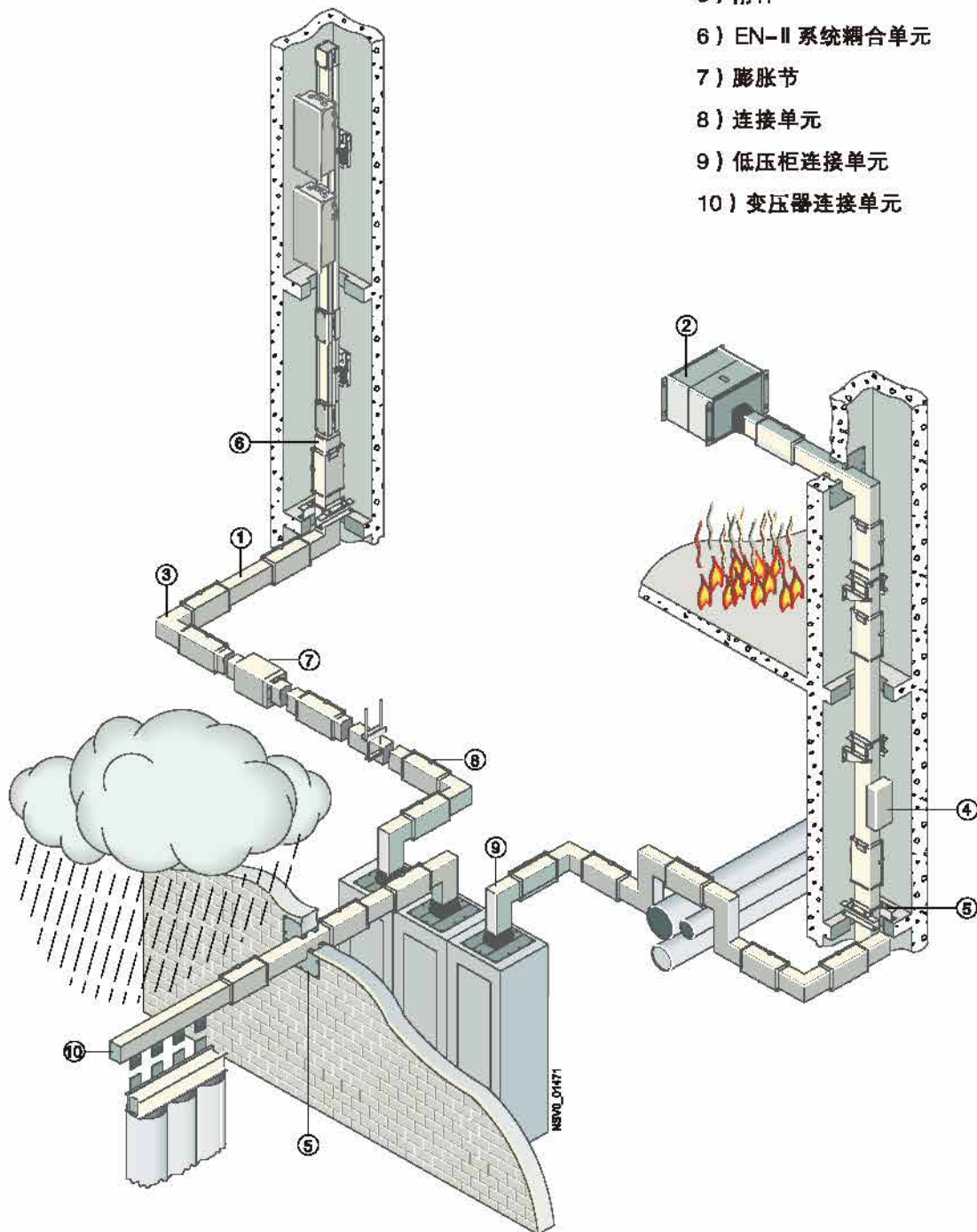
Consistent application of the ENJ system Functional endurance with additional measures High degree of protection IP68

Result

High availability through maintenance-free technology Minimum space requirements through compact dimensions High resistance through epoxy cast-resin enclosure Ideal personal and system protection

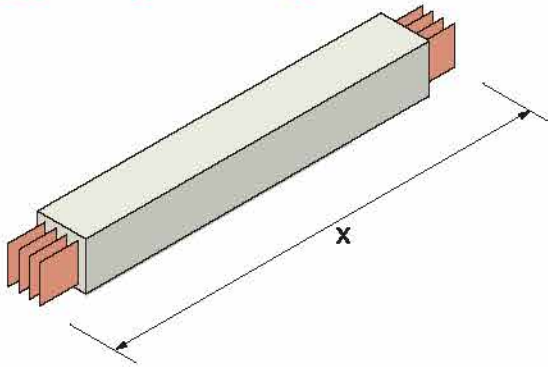
ENJ低压浇注母线系统

- 1) 直线段
- 2) 进线单元\馈线段
- 3) 换向单元
- 4) 插接单元
- 5) 附件
- 6) EN-II 系统耦合单元
- 7) 膨胀节
- 8) 连接单元
- 9) 低压柜连接单元
- 10) 变压器连接单元



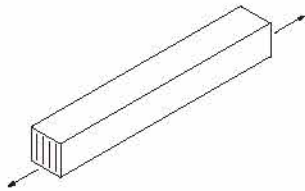
「功能单元」PRODUCTS

直线段 Straight trunking unit

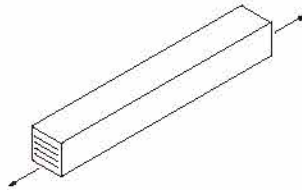


直线段设计标准长度为3m，可选范围为0.3m-3m 同时独特的结构设计也保证了ENJ母线系统的承载电流不会受安装位置及安装方式的影响，我们会结合实际现场情况设计一条合适的母线走向。

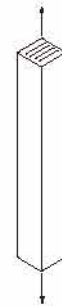
Standard straight trunking unit is 3m and optional length is from 0.3m 3m. The unique structure design can ensure currents of ENJ busbar system will not be influenced by installation position and manner. We will design a suitable busbar direction according to the actual situation.



水平安装，立装



水平安装，侧装



垂直安装

外形尺寸

4-conductor system				5-conductor system				
IEp[A]		System	A	B		System	A	B
630		ENJC0141	90	90		ENJC0151	90	90
800		ENJC0241	90	90		ENJC0251	90	90
1000		ENJC0341	90	90		ENJC0351	90	90
1250		ENJC0441	100	110		ENJC0451	120	110
1600		ENJC0541	100	130		ENJC0551	120	130
2000		ENJC0641	100	190		ENJC0651	120	190
2500		ENJC0741	100	230		ENJC0751	120	230
3150		ENJC0841	100	270		ENJC0851	120	270
4000		ENJC2641	100	380		ENJC2651	120	380
5000		ENJC2741	100	460		ENJC2751	120	460
6300		ENJC2841	100	540		ENJC2851	120	540

膨胀节单元

为了调节系统的热胀冷缩, ENJ系统每隔35-40m左右需安装一节膨胀单元

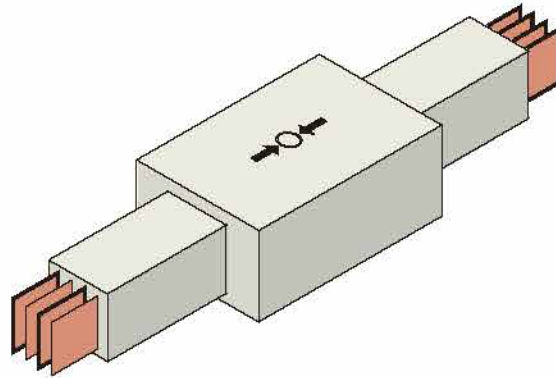
例: 70m的一条线中, 在中间安装一节膨胀节
120m的一条线中, 每40m安装一节膨胀节

Expansion element

In order to adjust heat expanding and cold shrinking, the expansion element should be installed every 35-40m.

I.e.: Install an expansion element in the middle of one 70m straight length

Install an expansion element every 40m in one 120m straight length

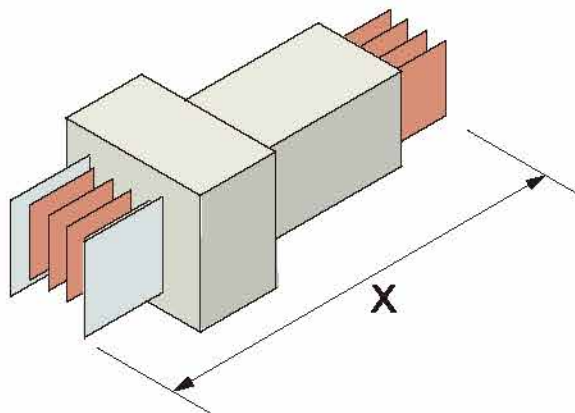


ENJ与EN-II系统耦合单元

ENJ浇注母线系统凭借其超高防护等级被广泛应用于户外配电, 在进行户外与户内转接时, 该耦合单元可与户内EN-II密集母线系统实现完美结合, 使得整个配电系统更经济、更理想。

ENJ & EN-II system coupling unit

ENJ busbar system is widely used outdoors due to the high degree of protection. During the connection with indoor busbar, such coupling unit can realize a perfect combination with EN-II compact busbar to make the whole distribution system more economic and ideal.



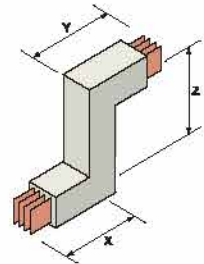
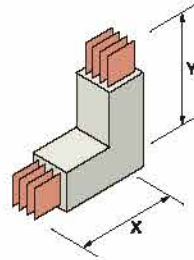
「功能单元」PRODUCTS

换向单元

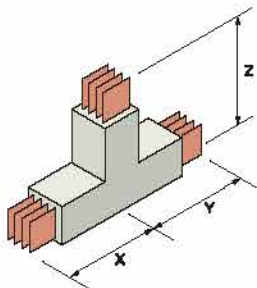
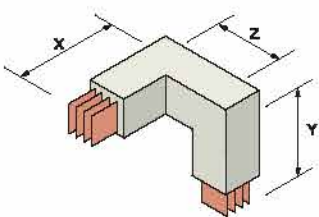
ENJ 系统配备完整的水平、垂直及T型弯头等，可方便的更改母线槽系统的走向，同时为了满足现场的特殊需求，我们还可以进行非标设计。

Junction unit

ENJ busbar system has a set of complete horizontal, vertical and T elbows which can change busbar direction conveniently. Meanwhile we can make special designs in order to satisfy the special requirements on site.



Length	System	Type
X/Y=0.30...1.20 m	ENJC01 to ENJC08	ENJC...-K(-1.0/-1.5)
X/Y=0.40...1.10 m	ENJC26, ENJC27	
X/Y=0.5...1.05 m	ENJC28	
X/Y=0.30 m Z=0.06...0.60 m	ENJC01 to ENJC08	ENJC...-ZK
X/Y=0.40 m Z=0.06...0.80 m	ENJC26, ENJC27	
X/Y=0.5 m z=0.06...0.90 m	ENJC28	



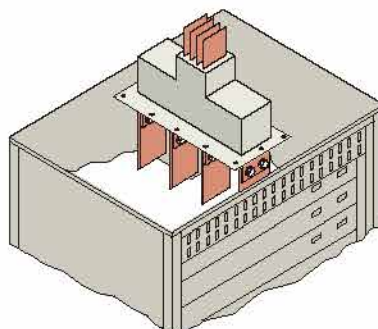
Length	System	Type
X/Y = 0.30 m Z = 0.18...0.60 m	ENJC01 to ENJC08	ENJC...-XL
X/Y = 0.40 m Z = 0.28...0.70 m	ENJC26, ENJC27	
X/Y = 0.5 m Z = 0.30...0.70 m	ENJC28	
X/Y = 0.30...1.20 m Z = 0.30...0.50 m	ENJC01 to ENJC08	ENJC...-TV
X/Y = 0.40...1.20 m Z = 0.40...0.50 m	ENJC26, ENJC27	
X/Y/Z = 0.5...1.20 m	ENJC28	

与低压柜连接

ENJ 系统可以通过 EN-II 耦合单元与 低压柜直接相连。

Connected with LV distribution board

ENJ system can connected with LV distribution boards directly through EN-II coupling unit.



与其他低压柜型连接

我们提供专门的始端进线单元与配电柜连接，始端连接头的相间距可根据要求进行调整

Connected with other LV distribution board

We support special entry unit to connect with distribution board. The connection tags can be adjusted according to requirements.

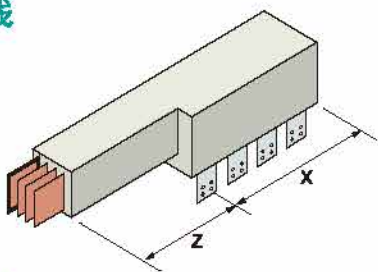
与变压器的连接

ENJ 系统配备独特的变压器连接单元，也可根据要求进行非标设计，最大电流达6300A，工厂配备软连接单元，可避免变压器的震动影响到整个配电系统，并且可以按照变压器具体出线方式进行调整设计。

Connected with transformer

The unique transformer connection unit can also be designed specially with the current up to 6300A. The factory equips flexible connection unit to avoid vibration in the whole distribution system and can adjust designs according to the actual outlet manner of transformer.

侧出线

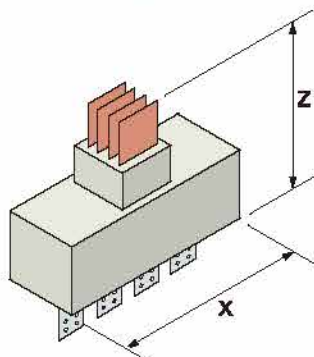


上出线

相间距最大为750mm

相间距最小为：接头宽+25mm

连接头L1、L2、L3、PEN和PE的顺序可以自由选择
具体尺寸根据现场测量，可进行非标设计。



Length	System
$X \leq 0.70 \text{ m}$ $Z = 0.30 \dots 0.50 \text{ m}$	ENJC01 to ENJC28
$X \leq 1.00 \text{ m}$ $Z = 0.30 \dots 0.70 \text{ m}$	ENJC26 to ENJC28

Busbar connection on the top

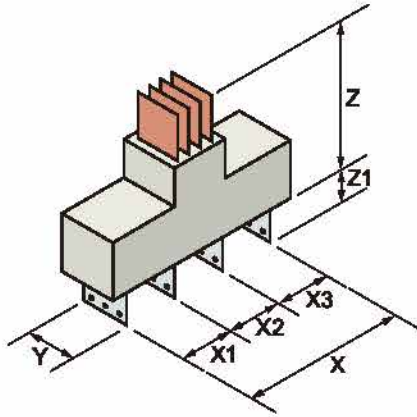
Maximum phase clearance is up to 750mm.

Minimum phase clearance: tag width+25mm

The sequence of the connection tags from conductors L1, L2, L3, PEN and PE can be freely selected.

The detailed dimension will be based on the actual measurement and can be designed specially.

Length	System
$X \leq 0.70 \text{ m}$ $Z = 0.50 \text{ m}$	ENJC01 to ENJC28
$X \leq 1.00 \text{ m}$ $Z = 0.70 \text{ m}$	ENJC26 to ENJC28



电缆进线单元

如果母线系统需要通过电缆输电，可配备 ENJC...-KE 电缆进线单元。

电缆进线单元额定电流为800A-3200A

Cable connection unit

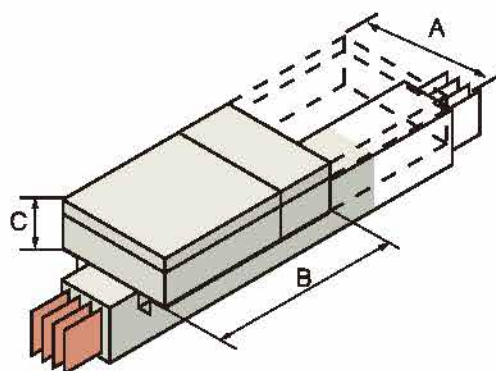
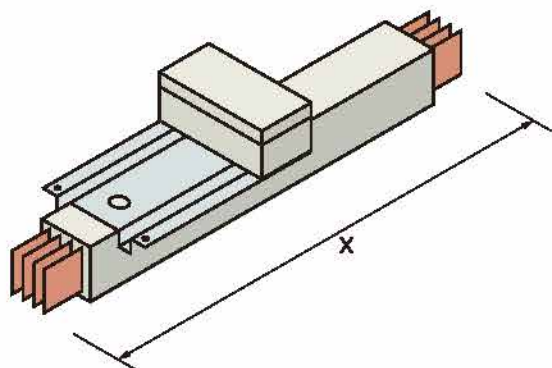
If power needs to be supplied to the busbar trunking system via cables, you should use an ENJC...-KE incoming cable connection unit.

The incoming cable connection units are designed for rated current from 800A-3200A.

Tags	Design		Size
		4-conductor	
			Z=0.30 m
			Z1=0.06 m
	5-conductor		X=0.50 m
			Z=0.30 m
			Z1=0.06 m
	Clearance	Width	Type
	X1=X2=X3=0.10 m	Y=0.06 m	ENJC01 to ENJC03
		Y=0.08 m	ENJC04
		Y=0.10m	ENJC05
		Y=0.16 m	ENJC06
		Y=0.20 m	ENJC07
		Y=0.21 m	ENJC08 to ENJC28

无论是多芯和单芯电缆都可以在电缆进线箱中使用，只要电缆横截面不超过 300mm^2 都可以直接安装在电缆进线箱中使用。电缆连接之后，即用配置好的环氧树脂混合物对连接头处做现场浇注处理，防护等级仍高达IP68。

No matter multi-core or single-core cables can be used in incoming cable connection unit, as long as the cable cross section is less than 300mm^2 . The cable connections are moulded to the tags on site once the cables have been connected. The degree of protection is up to IP68.



插接单元

我们能在 ENJ 母线系统任何位置提供插接输出单元，便于为负载设备供电。

ENJ 系统采用全透明聚碳酸酯绝缘箱体，最大电流为800A，其内部带有设备隔室，可根据用户要求配置断路器。

我们会根据现场具体情况对插接箱的外形尺寸进行非标设计，以满足现场需求。

Tap-off unit

We can support tap-off units at any position of ENJ busbar system for power distribution.

ENJ system adopts glass-mat reinforced polyester box with the current up to 800A, equipped inner cabinet to install MCCB according to requirements.

ENJ 聚酯插接箱

ENJ polyester tap-off box:

强度高

High impact strength

抗恶劣气候环境

Resistant to adverse climatic conditions

抗紫外线

Resistant to UV radiation

耐火

Flam retardant

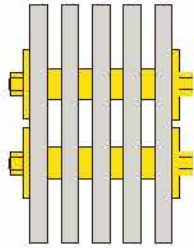


Rating	125A	250A	400A	630A	800A
A [mm]	270	270	360	360	360
B [mm]	720	720	900	1080	1080
C [mm]	180	180	180	300	300

「系统附件」PRODUCTS

连接器

ENJ 母线系统的连接是采用力矩螺栓一体化连接装置,当力矩扳手的扭矩达到84N.M时最外力矩螺栓头会自动脱落,当扭矩小于84N.M时螺栓头不会脱落,安装人员无法安装浇注模具,这样就保证了导体间可靠的电气接触,避免了人为因素而导致的不良安装



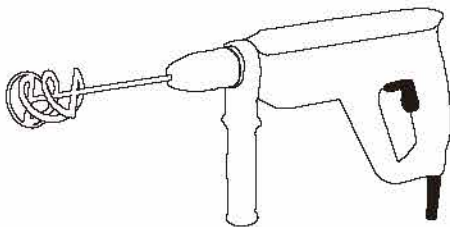
Joint unit
连接器

连接附件

母线连接时,需用配制好的环氧树脂混合物进行现场浇注,为此我们提供用以配合完成浇注过程的各种工具。

Connection accessories

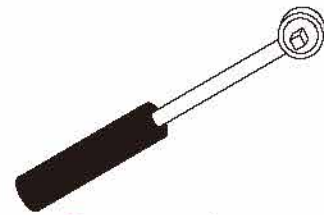
During busbar connection, we support a set of tools to achieve the cast resin mixture.



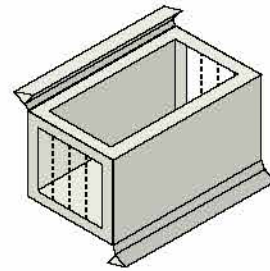
Mixer
搅拌机

Joint block

The electrical and mechanical jointing of the trunking units is achieved by a special monobloc-system. The correct torque setting is achieved when the outer head shears at a pre-set torque level 84N.m. If the correct torque level on the monobloc is not reached 84N.m, then it will not be possible to encase the joint with the mould which will ensure the credible electrical contacts through conductors to prevent bad installation due to human behaviour.



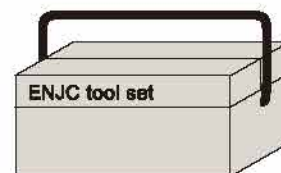
Torque wrench
力矩扳手



Casting mould
模具



Cast resin mix
环氧树脂混合物



Tool set
工具箱

安装支架

根据不同的安装环境，我们提供相应的安装附件。

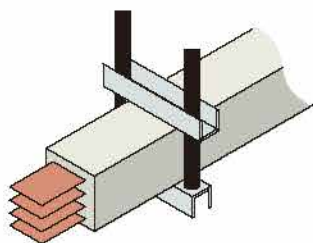
水平安装支架

多种支架用于水平安装

标准支架：

水平立装： ENJ...-BHH

水平侧装： ENJ...-BHF



水平侧装
Horizontal flat installation

Installation bracket

According to different installation environments, we support different installation accessories.

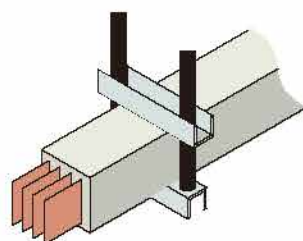
Horizontal installation bracket

Various brackets can be used when horizontal installation

Standard brackets:

horizontal edgewise installation: ENJ...-BHH

horizontal flat installation: ENJ...-BHF



水平立装
Horizontal edgewise installation

垂直安装支架

多种支架用于安装垂直母线：

弹簧支撑器承担母线重量 ENJ...-BV

滑动托架将母线导向规定的位置 ENJ...-BG

固定件将母线固定于建筑结构中 ENJ...-BF

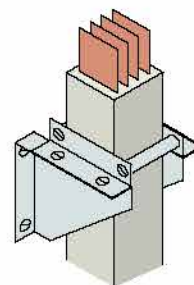
Vertical installation bracket

Various brackets can be used when vertical installation:

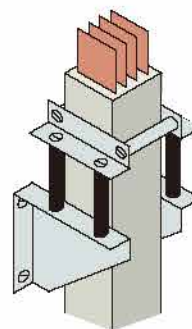
Spring supports afford busbar weight ENJ...-BV

Slide supports guide busbar to regulated position ENJ...-BG

Fixed supports fix busbar in the construction



ENJ...BF



ENJ...BWW

「母线安装」PRODUCTS

母线连接

1 其他单元需与导体末端正确连接。导体间的距离可在32-40mm间调整用以补偿土建公差。在导体两端间滑动连接块直接调整。

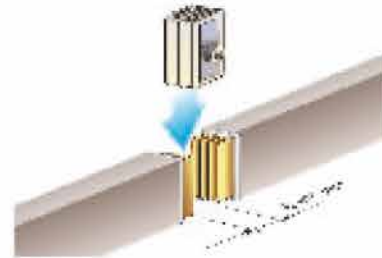
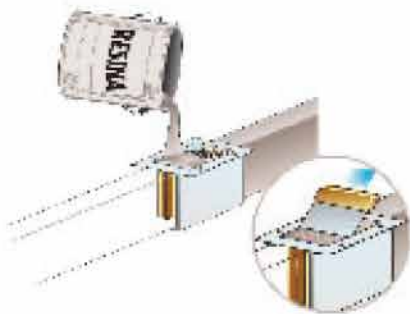
1. Elements and conductor ends should line up correctly. The distance between the conductor ends may be adjusted between 32-40mm, allowing compensation of building tolerances. Slide the monobloc between the conductor end and adjust accordingly.

The resulting type code enables the product to be ordered to be precisely defined.



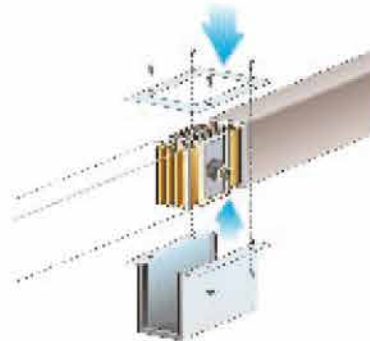
3 将脱模镶嵌在连接块表面,调整至最佳位置,将树脂和硬化剂倒入空桶中,使其混合5分钟。

3. Apply demoulding agent thinly on inner mould surface, fit mould over junction. Pour resin and hardener in empty bucket and mix for 5 minutes.



2 紧固连接块螺栓直至外部一端脱落(80-84Nm)。

2. Tighten the monobloc bolt until the shear of the outer head. (80-84Nm)



4 将混合物灌入连接块中直至溢出表面,最后用油灰刀将表面整平,6-12小时后移走模具。

4. Pour mix immediately into mould until completely field up to rim. Smoothen top surface with putty knife. Remove mould after 6-12h.

ENJ 安装图解

结构

通常两个固定支撑件中心距须为1.5m。2-3m长直线段推荐配用2套支撑件。

Selection example

Generally a distance of 1.5 m between 2 fixing points should be observed. On busbar elements with a length of 2 m to 3 m the use of two fixing elements is recommended.

支撑件图解 Configuring fixing points		序号	描述
		1	连接器中距
		2	支架中心

水平或垂直安装时，每隔1.5m安装一套固定安装件。由于单排系统和双排系统重量不等，须充分考虑安装件的选择。

The fixing brackets should be placed vertically and horizontally every 1.5 m. The different weights of single and double systems should be considered when choosing the fixing brackets. The fixing brackets feature different C-profiles due to the different system weights.

ENJ系统可依据现场安装需求，支持以下3种安装方式：

- 楼板：悬挂安装
- 墙面：支撑安装
- 地面：高架安装

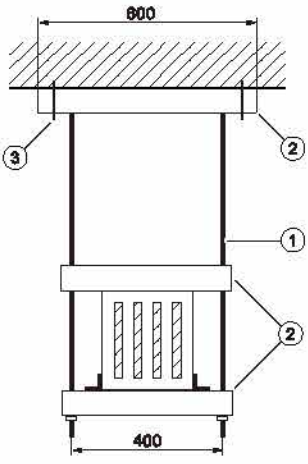
Minimum fixing methods for horizontal installation

Three possibilities are provided here:

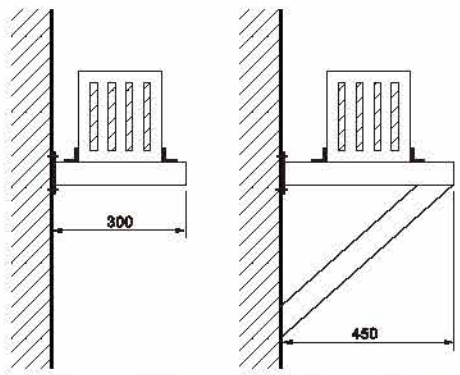
- ◆ Ceiling: suspended installation
- ◆ Wall: supported installation
- ◆ Floor: elevated installation

「母线安装」PRODUCTS

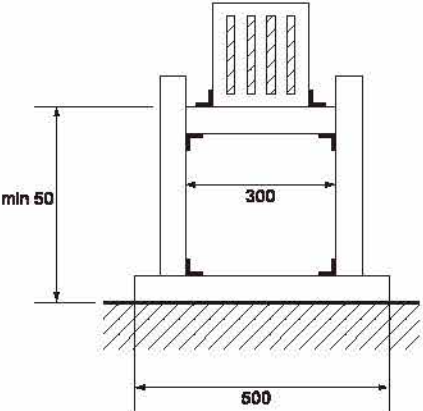
安装图解范例：悬挂安装

Ceiling fixing example: suspended installation	Description
	<p>① Threaded rods 通丝 ② C-profiles C型架 ③ Dowels 定位销钉</p> <p>(悬挂距离楼板1m),属于安装吊架一部分. (suspension up to 1.0 m under the ceiling), part of the fixing sets ENJ ..-BHH / ENJ ..-BHF</p> <p>吊架件注释 Note on the fixing sets ENJ ..-BHH / ENJ ..-BHF.</p> <p>Components are: 部件有 2 x M10 threaded rods 2 x M10通丝 2 C-profiles 2C型架 4 lock nuts with spring washers 含弹簧垫片的锁紧螺帽</p>

安装图解范例：支撑安装

Wall fixing example: supported installation	Description
 <p>ENJ-BHW1支撑 ENJ-BHW2支撑</p>	<p>4-conductor system: ENJ-BHW1 (illustrated on left) Double system ENJ-BHW2 (illustrated on right) mounted on a support</p>

安装图解范例：高架安装

Floor fixing example: elevated installation	Description
	Double system elevated on the floor (available on request)

描述：双排系统在地面上高架安装。（根据现场需求）

「技术数据」PRODUCTS

系统通用参数

系统通用标准	IEC、DIN EN、GB7251.1.2
额定绝缘电压 U_i	AC/DC1000
额定工作电压 U_e	AC1000
频率 Hz	50...60
额定工作电流 I_e	630A-6300A
防护等级 IP	
母线部件	IP68
连接部件/插接单元	IP68
导体 conductor	铜排或铝排 Copper or Aluminium
外壳 enclosure	环氧树脂 Resina
安装方式 Mounting position	水平、垂直、高架安装 Edgewise,flat,sideways
颜色 color	石灰色, 近似RAL7032

ENJ 母线系统技术数据

Type 型号	I_e 电流 A	I_{cw} (1 sec.) 额定短时耐受电流KA	I_{pk} 额定峰值电流KA	R20 电阻mΩ/m	X20 电抗mΩ/m	Z20 阻抗mΩ/m	U 电压V/m	Kg/m重量	
								4线制	5线制
ENJC01	630	23	48	0.099	0.068	0.12	0.11	19	20
ENJC02	800	23	48	0.074	0.058	0.094	0.11	21	23
ENJC03	1000	50	80	0.049	0.057	0.075	0.1	24	27
ENJC04	1250	50	140	0.036	0.042	0.055	0.1	32	39
ENJC05	1600	65	140	0.03	0.037	0.048	0.1	38	47
ENJC06	2000	65	140	0.022	0.03	0.037	0.1	58	71
ENJC07	2500	80	176	0.017	0.024	0.03	0.1	72	88
ENJC08	3150	80	176	0.015	0.018	0.023	0.11	85	104
ENJC26	4000*	100	220	0.011	0.014	0.018	0.12	116	142
ENJC27	5000*	100	220	0.009	0.012	0.015	0.13	143	174
ENJC28	6300*	100	220	0.007	0.012	0.014	0.15	169	207

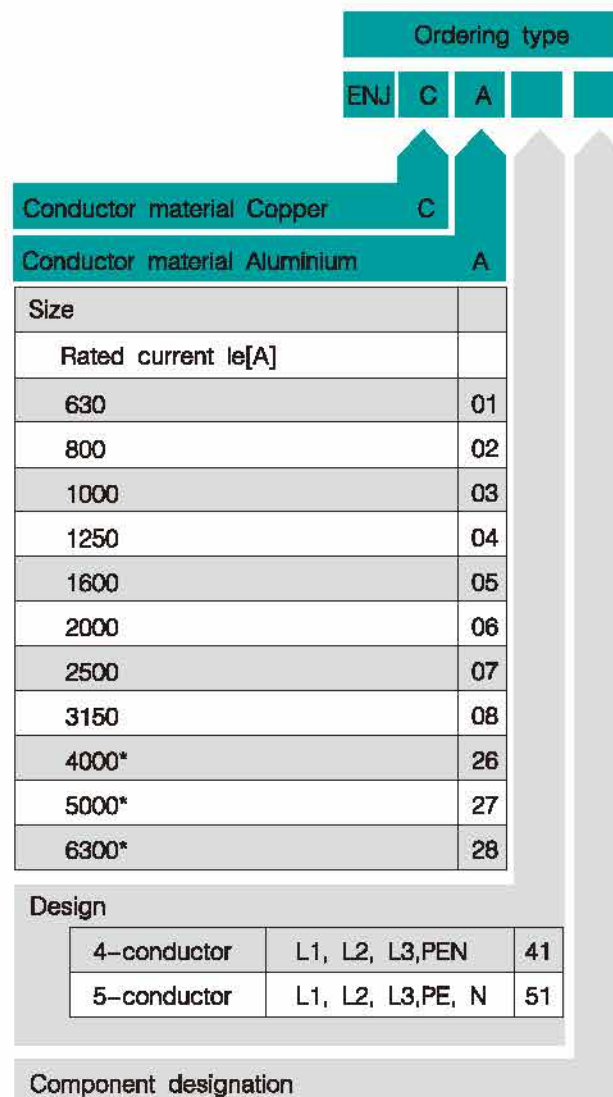
产品编号

ENJ 全封闭浇注母线对一些基本的部件进行了编号,包括额定电流\导体配置\导体材料等,下面的图示就反映了这一产品代码系统,用户可以根据此系统进行产品的订货选择.

Type code

The basic components of the ENJ system are determined using a type code. The type is specified and selected on the basis of rated current, conductor material and system type or conductor configuration.

The resulting type code enables the product to be ordered to be precisely defined.



选型示例

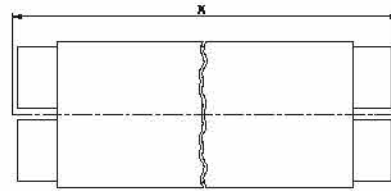
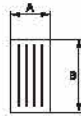
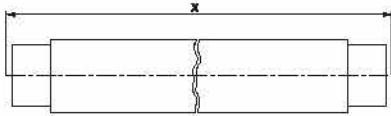
一项工程需要额定电流为2500A,采用导体材质为铜,指定采用4线制系统,借助图标,决定采用下列类型: ENJC0741

Selection example

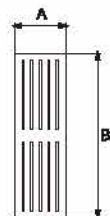
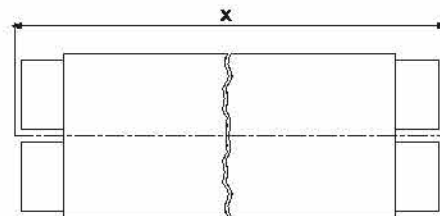
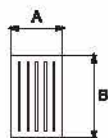
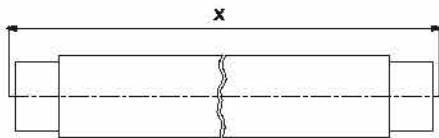
A rated current of 2500A is calculated for a project. A 4-pole system, copper conduction has to be used. This result in type is ENJC0741.

「物理数据」PRODUCTS

直线段尺寸



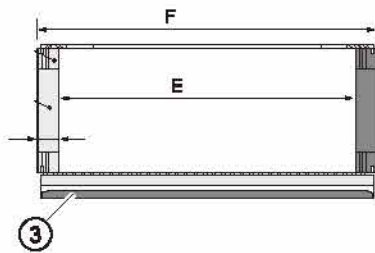
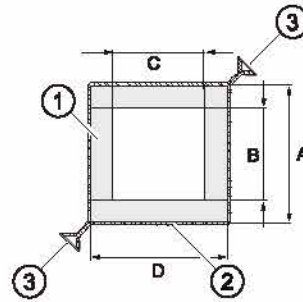
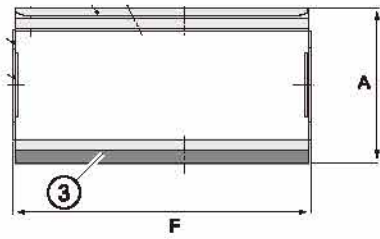
System	A [mm]	B [mm]	x [mm]
ENJC0141	90	90	300...3000
ENJC0241			
ENJC0341			
ENJC0441	100	110	
ENJC0541		130	
ENJC0641		190	
ENJC0741		230	
ENJC0841		270	
ENJC2641		380	
ENJC2741		460	
ENJC2841		540	



System	A [mm]	B [mm]	x [mm]
ENJC0151	90	90	300...3000
ENJC0251			
ENJC0351			
ENJC0451	120	110	
ENJC0551		130	
ENJC0651		190	
ENJC0751		230	
ENJC0851		270	
ENJC2651		380	
ENJC2751		460	
ENJC2851		540	

模具

Dimension drawing



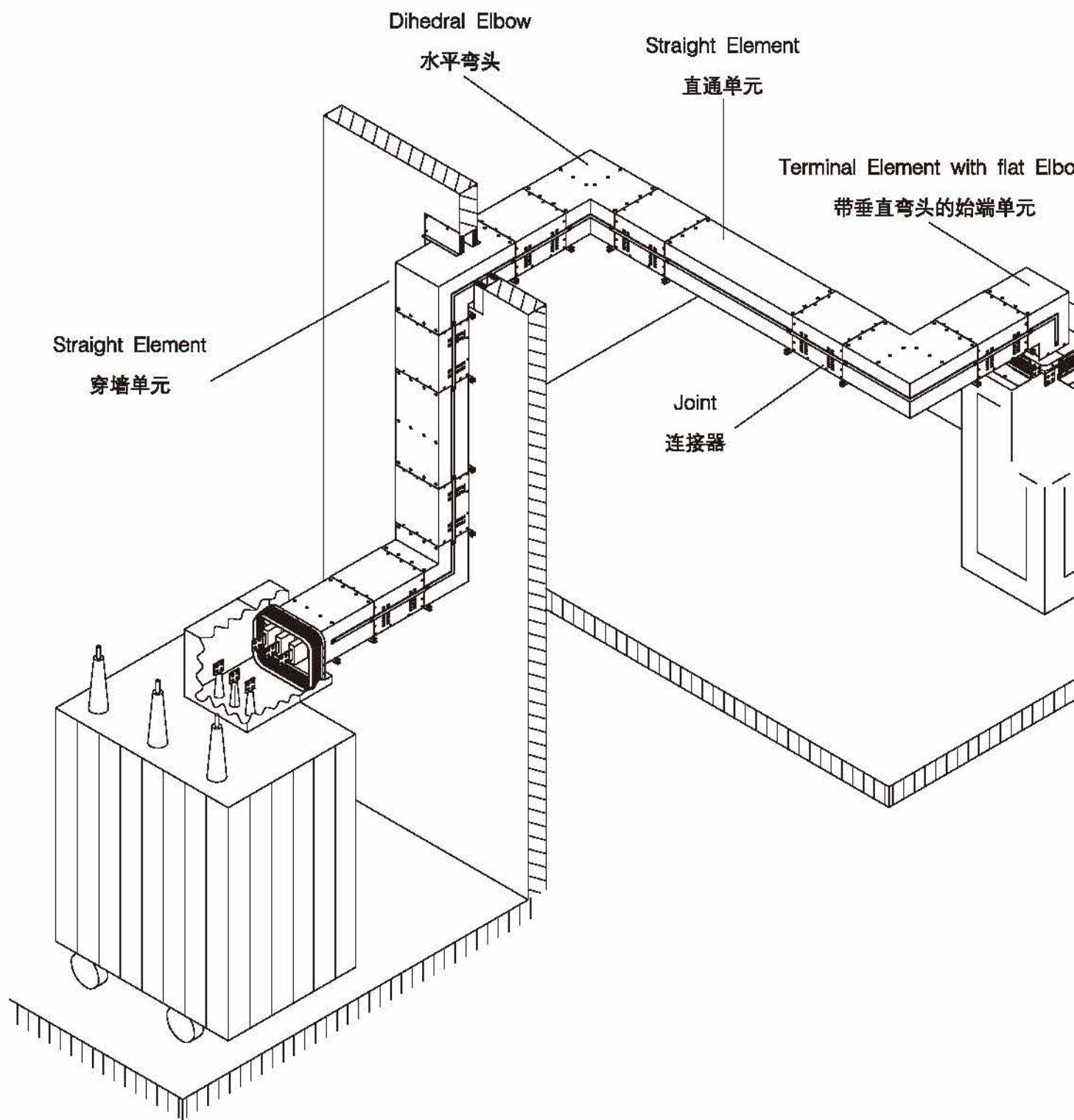
尺寸图

序号	标识
①	垫片
②	模具
③	连接法兰
A	系统高度 + 40mm
B	系统高度
C	系统宽度
D	系统宽度 + 40mm
E	286mm
F	330mm

Item	Designation
①	Gasket
②	Casting mould
③	Connection flange
A	System height + 40 mm
B	System height
C	System width
D	System width + 40 mm
E	286 mm
F	330 mm

「中压浇注母线系统」PRODUCTS

ENJ中压浇注母线系统



主要优势 Major Advantages

符合国际标准

According to international standards

电流: 1250A- 5000A, 电压: 3.6 - 17.5 kV

Wide range from 1250A- 5000A 3,6- 17,5kV

合成树脂完全绝缘, 防护等级IP68

Full insulated with cast resin

具有防火、防水、防腐、防爆等优势

Fireproof Waterproof Anticorrosive Explosive resistant

短路强度高、机械强度高

High short-circuit with stand

电磁兼容

Electromagnetic compatibility

功能单元可定制

Tailor made terminal-elements

外形体积小

Very small dimensions

安装简便、可靠

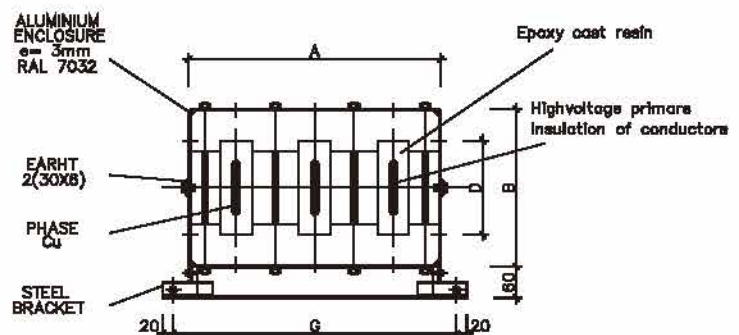
Simple erection

终身免维护

Maintenance free



系统概述 General features



MV-R
for rated voltage levels
3,6 - 7,2 - 12 - 17,5kV

MV-R环氧树脂绝缘中压母线槽系统为厂用回路、变电站、水电发电机与变压器之间的连接提供全套配电方案。其设计紧凑，超高防护等级及优良的电气绝缘性能，可确保安全适用于户外、高温、盐雾、腐蚀及各种危险环境中，终身免维护。



MV-R epoxy resin insulated busbar trunking system forms an Medium voltage electric energy transport system which provides complementary solution.

It is highly resistant to fire and has an IP 68 degree of protection, which makes it the ideal solution for use in outside installation or in tropical, saline and corrosive environments.

「中压浇注母线系统」 PRODUCTS

MV-R中压母线槽技术参数 MV-R Medium Voltage Busbar Technical Data

Type	Rating A	Resist.20°C mΩ/m	Resist.75°C mΩ/m	Outer Dimension (AXB)mm		
				3,6/7,2kV	12kV	17,5kV
MV-R060-01	1250	0.03619	0.03619	480x 260	600x 320	740x 380
MV-R080-01	1600	0.02232	0.02714	480x 260	600x 320	740x 380
MV-R100-01	1750	0.01786	0.02172	480x 300	600x 360	740x 420
MV-R120-01	2000	0.01488	0.01809	480x 300	600x 360	740x 420
MV-R080-02	2500	0.01116	0.01357	540x 260	660x 320	800x 380
MV-R100-02	3000	0.00893	0.01086	540x 300	660x 360	800x 420
MV-R120-02	3500	0.00744	0.00905	540x 300	660x 360	800x 420
MV-R100-03	4000	0.00595	0.00724	600x 300	720x 360	800x 420
MV-R120-03	5000	0.00496	0.00603	600x 300	720x 360	800x 420
Voltage supported at industrial freq. (kV)工频电压 (kV)				10/20	28	38
Voltage supported with shock wave (kV) 冲击电压 (kV)				40/60	75	95
Minimum distance to air between phase faces (mm)最小相间距 (毫米)				60/90	120	160
Distance between phase axles for 1250 A and 2000 A 1250 A - 2000 A相线中心距 (毫米)				150	180	220
Distance between phase axles for 2500 A and 3500 A 2500 A - 3500 A相线中心距 (毫米)				170	200	240
Distance between phase axles for 4000 A and 5000 A 4000 A - 5000 A相线中心距 (毫米)				190	220	260

导体

导体采用高纯度电解铜，连接处均做镀锡处理，环氧树脂混合物整体浇注，具备LR低压系统所有特性。

Conductor

The conductor is made from electrolysed copper with high purity, tin-plated at connection part. The whole length is cased with epoxy resin mixture to achieve all LR system features.

导体外壳

冲孔铝外壳表面采用环氧树脂粉末喷塑处理，散热和耐腐蚀性能优秀，机械强度高，作为护套能有效消除残余磁场。

Enclosure

The enclosure is static spray painted with epoxy resin which enjoys good heat dispersion, anti-corrosion and high rigidity, and can remove rest magnetic field efficiently.

双层绝缘

系统采用双重绝缘：

第一层绝缘：固化后的环氧树脂具有优越的电气绝缘性能及良好的散热性能等，避免了相间短路。

第二层绝缘：经过环氧树脂喷塑处理的冲孔铝外壳环绕导体，消除局部漏电隐患，机械强度高、耐化学腐蚀、防火等级高。

Double insulation

The first insulation:

Solidified resin is possessed with good electrical insulated capability and perfect heat dispersion and avoid short circuit between phases.

The second insulation: The conductor is enclosed with aluminium enclosure which is painted with epoxy resin can remove partial creepage and with high mechanical strength, anti chemical corrosion and high fireproofing.

接头防护

两条直线段之间的连接在施工现场完成，采用环氧树脂混合物浇注成型，可确保接头部位防护等级仍然高达IP68。

售后服务工程师会在现场安装指导，确保正确施工。

Protection degree of joints

The connection between two straight feeders is completed on site and moulded with epoxy resin which can ensure IP68 protection degree. After-sales engineer will guide the installation on site.

设计灵活、合理

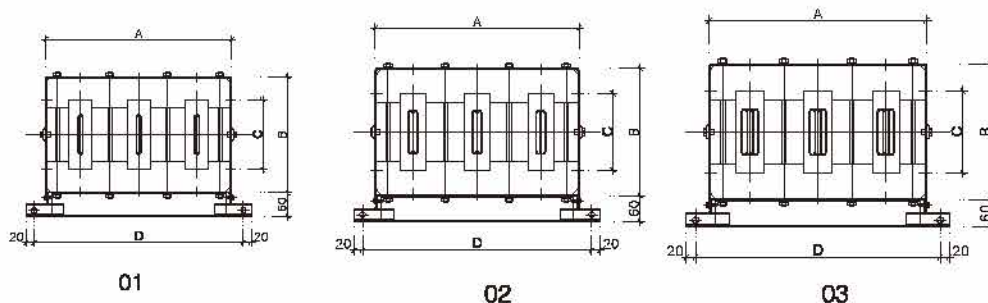
MV-R系统部件齐全，结构紧凑，功能单元可定制，在工程设计时中压连接与设计低压解决方案同样简单易行。

即使电压低于规定值，该中压系统也同样适用。

Flexible and reasonable design

MV-R System with a complete elements, compact structure and tailor made elements can be designed as simple as LV connection. Even though the voltage is less than regulated value, such MV system is also suitable.

尺寸 Dimensions



3,6-7,2kV 60Hz

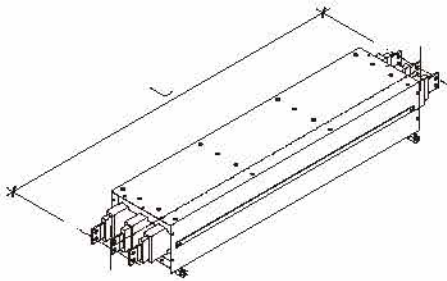
Type	Rating	Voltage kV	A/mm	B/mm	C/mm	D/ mm
MV-R060-01	1250	3,6/ 7,2	480	260	140	540
MV-R080-01	1600	3,6/ 7,2	480	260	140	540
MV-R100-01	1750	3,6/ 7,2	480	300	180	540
MV-R120-01	2000	3,6/ 7,2	480	300	180	540
MV-R080-02	2500	3,6/ 7,2	540	260	140	600
MV-R100-02	3000	3,6/ 7,2	540	300	180	600
MV-R120-02	3500	3,6/ 7,2	540	300	180	600
MV-R100-03	4000	3,6/ 7,2	600	300	180	660
MV-R120-03	5000	3,6/ 7,2	600	300	180	660

「中压浇注母线系统」PRODUCTS

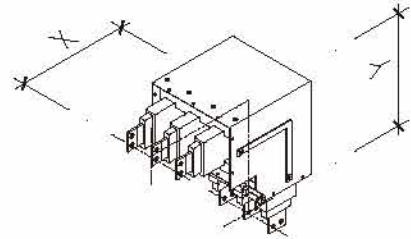
12kV 60Hz						
Type	Rating/A	Voltage kV	A/mm	B/mm	C/mm	D/mm
MV-R060-01	1250	12	600	320	140	660
MV-R080-01	1600	12	600	320	140	660
MV-R100-01	1750	12	600	360	180	660
MV-R120-01	2000	12	600	360	180	660
MV-R080-02	2500	12	660	320	140	660
MV-R100-02	3000	12	660	360	180	660
MV-R120-02	3500	12	660	360	180	660
MV-R100-03	4000	12	720	360	180	780
MV-R120-03	5000	12	720	360	180	780

17,5kV 60Hz						
Type	Rating/A	Voltage kV	A/mm	B/mm	C/mm	D/mm
MV-R060-01	1250	17,5	740	380	140	800
MV-R080-01	1600	17,5	740	380	140	800
MV-R100-01	1750	17,5	740	420	180	800
MV-R120-01	2000	17,5	740	420	180	800
MV-R080-02	2500	17,5	800	380	140	860
MV-R100-02	3000	17,5	800	420	180	860
MV-R120-02	3500	17,5	800	420	180	860
MV-R100-03	4000	17,5	800	420	180	860
MV-R120-03	5000	17,5	800	420	180	860

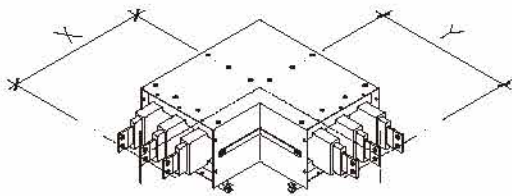
功能单元
Standard Elements MV-R



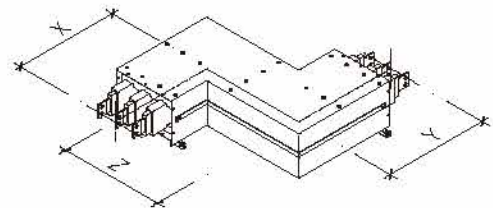
Straight Element



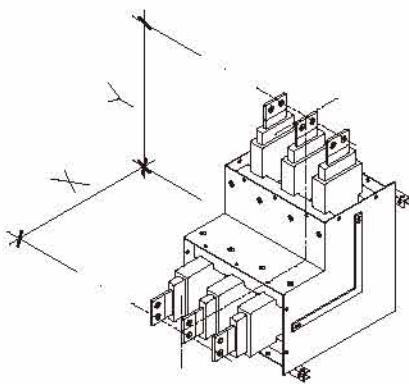
Flat Elbow Typ B



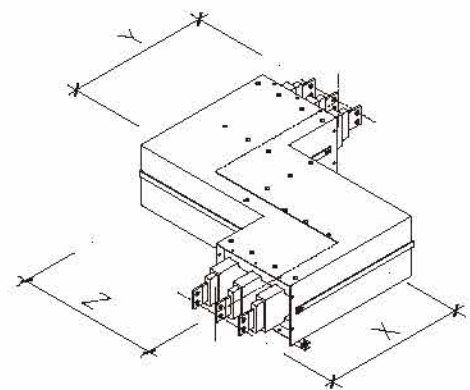
Dihedral Elbow



Dihedral Zed Element



Flat Elbow



Dihedral Element Typ B



<http://www.jsyineng.com>

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