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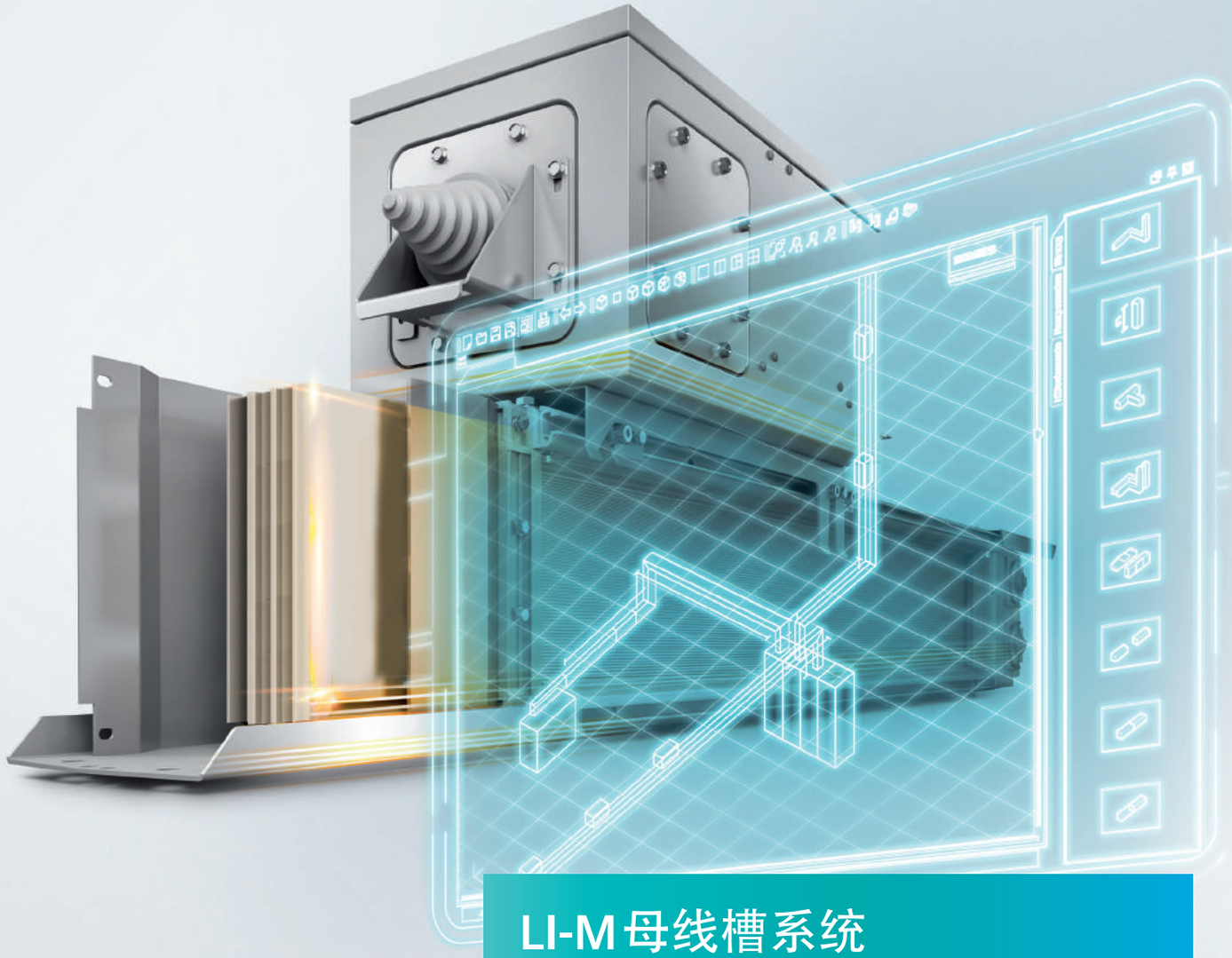

LI-M母线槽系统
LI-M busbar trunking system

安全高效电源的综合解决方案
An integrated solution for safe and efficient power supply
全集成能源–SIVACON 8PS
Totally Integrated Power – SIVACON 8PS

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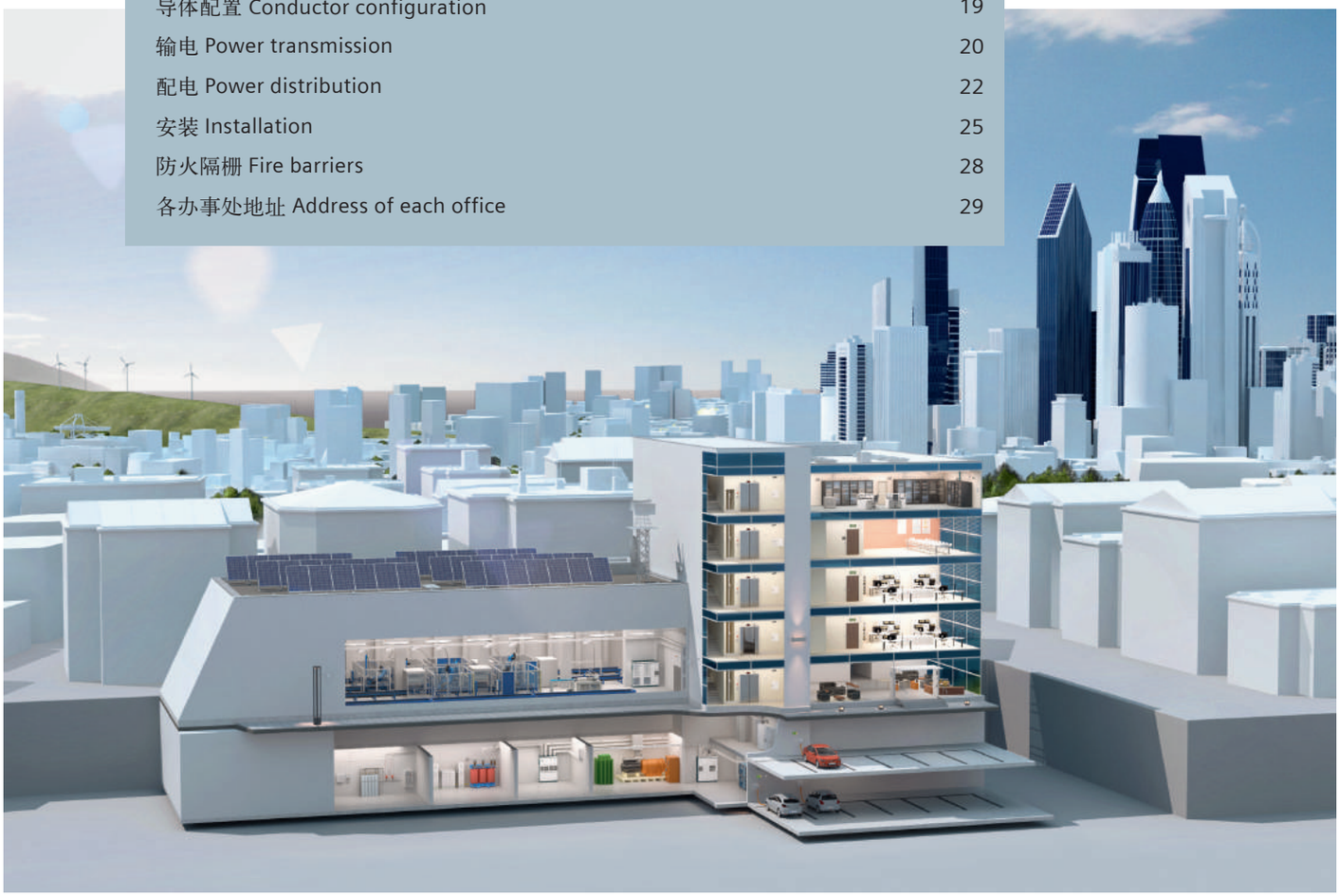


SIVACON 8PS LI-M 母线槽系统
SIVACON 8PS busbar trunking system – LI-M system

安全高效能源的综合解决方案
An integrated solution for safe and efficient power supply

收益 Benefits

- 集成能源管理解决方案
- 防护等级高达IP55，IP66[1)]
- 高短路耐受电流
- 一站式服务，从设计规划、安装到运行

- Integration in energy management solutions
- High degree of protection IP55, IP66
- High short-circuit rating
- One-stop shop from planning via installation to operation

按照最新的 IEC 61439-1/6 及 GB/T 7251.1/6 标准，LI-M母线槽和分接单元提供经过设计验证的解决方案，从而确保人员和安全并提高可操作性。防护等级输电高达 IP66，配电高达IP55。

防火隔栅满足 GB/T 7251.6 建筑结构的防火要求防火时间 240 分钟。

LI-M母线槽的紧凑性设计满足了狭窄建筑内节省空间的配电要求，以实现低成本高收益。

分接单元可带测量装置实现先进的能源管理，提升能源效率和能源性能。

让我们为您介绍一下系统的优点。

The LI-M system offers a broad range of design verified trunking and tap-off units in accordance with the new IEC 61439-1/6 standards, and GB/T 7251.1/6 enabling high personnel and system safety as well as improved operational availability. The high degrees of protection IP55 and IP66 for power distribution or power transmission contribute to this.

The fire barrier for the LI system has been tested for fire resistance 240 min in accordance with GB/T 7251.6 to meet building requirements according to Chinese Standards, providing a high degree of safety for your infrastructure.

Furthermore today's infrastructures require space-saving power supply. The compact design of the LI-M system satisfies this requirement and facilitates integration into narrow buildings in order to achieve a cost-efficient infrastructure.

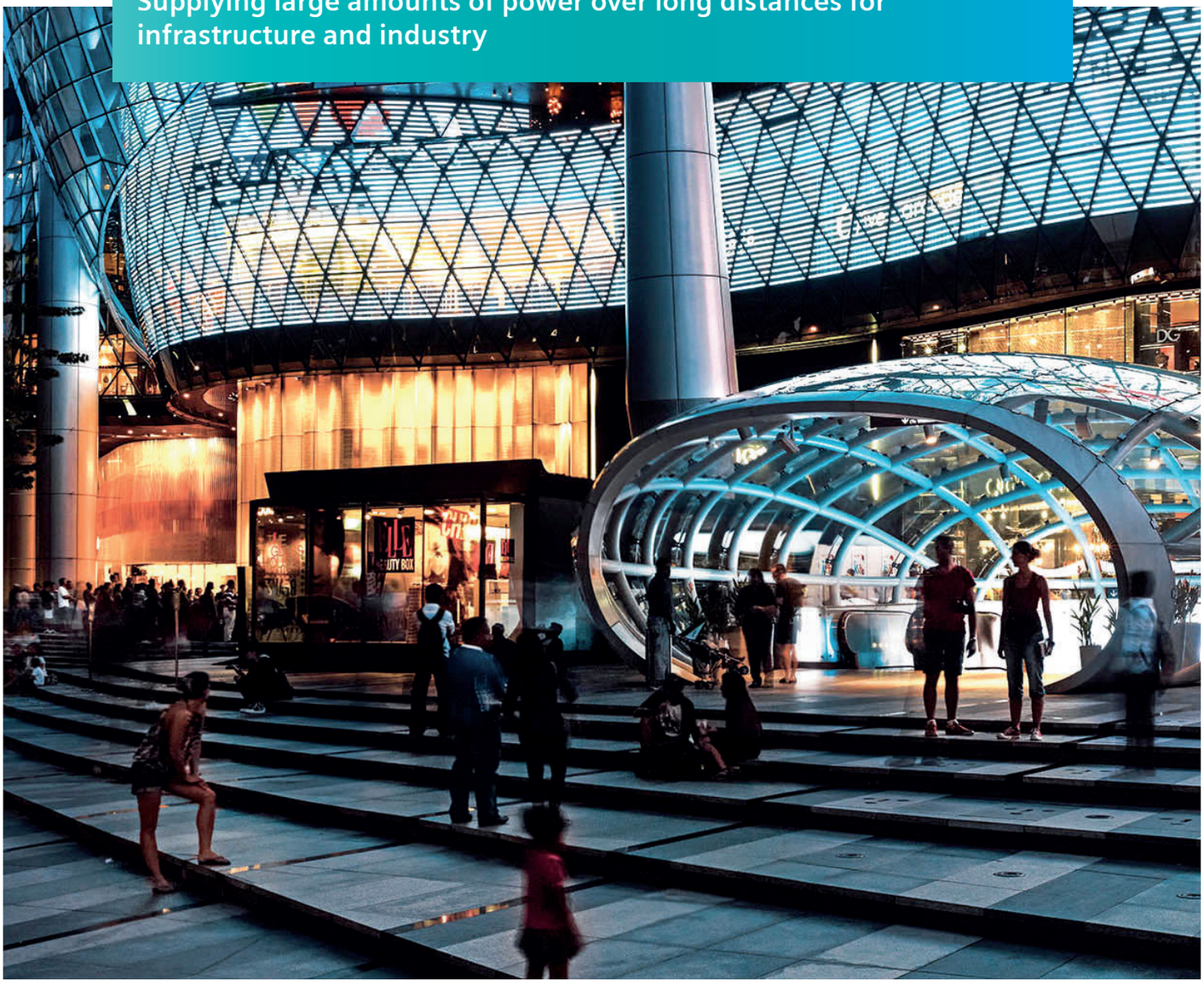
Innovative technical features such as tap-off units with measuring devices enable a modern energy management meeting the latest demands for increased power efficiency and energy performance.

Let us introduce to you the advantages of an integrated system with high flexibility and security of investment.

1) IP66适用于输电 IP66 for power transmission

LI-M 母线槽系统的应用
Applications of the LI-M system

为基础设施和工业提供长距离的能源供给
Supplying large amounts of power over long distances for infrastructure and industry



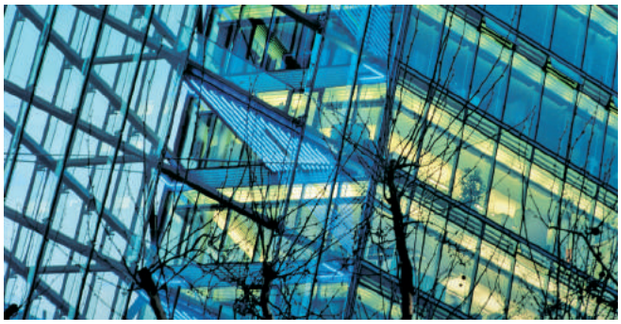
现代基础设施和工业依赖于安全、灵活、可靠和高效的电力能源供应。LI-M 母线槽是满足这些要求的最佳选择。例如，高防护等级、高短路电流和低电压降，确保最佳的可靠性和最高的人员安全。

Modern infrastructure and industry depend on a supply of electrical energy that is safe, flexible, reliable, and efficient. The LI-M system is the right solution to these requirements. For example, a high degree of protection, a high short-circuit rating, and low voltage drops ensure optimum operational reliability combined with maximum personal safety and efficient operation.

分接单元的灵活性和母线槽的紧凑结构实现了高效设计和安装。也满足基础设施成本效益要求。此外，作为SIVACON 8PS的组成部分，LI-M 母线槽是全集成能源和面向未来的解决方案。

The flexibility of its tap-off units and a compact design support efficient planning and installation as well as a cost-effective infrastructure. Furthermore, as part of the SIVACON 8PS and TIP portfolio, the LI-M system contributes to integrated and future-proof solutions.

高层建筑 High-rise structures



典型的要求

- 低火灾荷载
- 低空间需求
- 灵活的分接单元

Typical demands

- Low fire load
- Low space requirements
- Flexibitlity of tap-off units

高层建筑需要尽可能小的空间提供灵活可靠的电力供应。其需求随着建筑物的应用而变化，但安全始终是最优先考虑的问题，火灾时的防止蔓延性能也是重要的考量因素。发生火灾时，LI-M母线槽的低火灾荷载性能及满足国标GB/T7251.6的防火隔栅保证人员和设施安全。

High-rise buildings need a flexible and reliable power supply in the smallest possible space. Demands vary depending on how the building is used, but safety is always the top priority, and functionalendurance in case of fire is a key consideration. In case of fire, the LI-M system helps safeguard life and infrastructure due to low fire loads as well as fire barriers in accordance with Chinese Standards (tested according to GB/T 7251.6).

数据中心 Data centers

典型的要求

- 备用电源系统
- 负载冗余电源
- 独立PE导体包裹绝缘满足干净接地

Typical demands

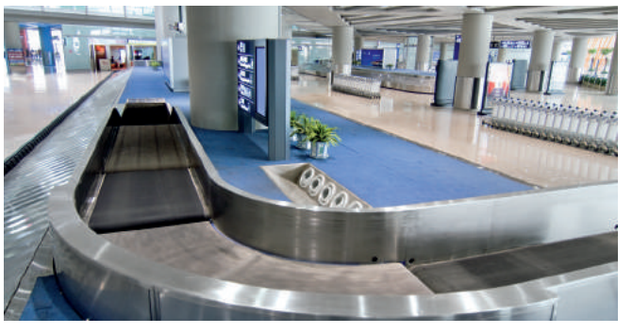
- Standby power system
- Redundant power supply to the loads
- Clean Earth requirement with separate PE conductor insulated to the busbar trunking system housing

数据中心在电源供应时需要的最大可靠性和透明度，并且通常具有非常大的能源密度。内置冗余对于数据中心至关重要，以确保可靠性。然而，这种冗余会带来相位不平衡的风险。电磁场不能影响灵敏的电子类负载，同时不断增加的电子类负载和单相负载不能让中性线过载。

LI-M母线槽将UPS系统和变压器与主配电柜相连接。分接单元记录能耗的数据，并通过单独的总线系统传输到控制室。

Data centres require maximum reliability of supply and transparency in power distribution, and generally have a very large power density. Built-in redundancy is essential for data centres so as to ensure perfect reliability. However, this redundancy involves a risk of phase unbalance. Electromagnetic fields may not influence the sensitive electronic loads, and the increasing amount of electronic and single-phase loads must not overload the neutral conductor.
The LI-M system interconnects the UPS system and the transformers with the main distribution board. Tap-off units record the power consumption and transfer the data required to the control room via a separate bus system.

基础设施 Infrastructure



典型的要求

- 紧凑的设计，以满足空间要求
- 备用电源系统
- 负载冗余电源
- 符合最新国家安全标准的防火隔栅
- 全套的设计验证的解决方案，包括开关柜和母线之间的连接
- 符合国标的现代能源管理综合解决方案

Typical demands

- Compact design to meet the low space requirements
- Standby power system
- Redundant power supply to the loads
- Fire barriers in accordance with state-of-the-art safety standards
- Complete, design verified solution including connection between switchboard and busbar
- Integrated solutions for modern energy management in accordance with Chinese Standards

诸如机场等重要基础设施有不同的电力系统要求。在所有区域都需要最可靠的具有最低消防负荷水平的电源，并且必须最佳地使用空间。低压主配电柜采用放射网络、供电管道和通道，尽可能节省空间。

LI-M系统支持高效基础设施的集成解决方案。分接单元可以配备能够进行现代能源管理的能通信的测量设备。该系统紧凑的设计使成本效益的建筑物。此外，诸如防火隔栅等特性能够满足中国建筑基础设施的要求。

Critical infrastructures such as airports have diverse power system requirements. The most reliable power supply possible with the lowest fire load level is required in all areas, and space must be optimally used. A radial network is used with low-voltage main distribution boards, supply ducts and channels designed to occupy the smallest possible space.
The LI-M system supports an integrated solution for an efficient infrastructure. Tap-off units can be equipped with communication-capable measuring devices that enable modern energy management. The compact design of the system allows cost-efficient buildings. Furthermore, features such as fire barriers enable to meet Chinese building requirements for infrastructure.

制造业 Manufacturing industries

典型的要求

- 灵活的理念
- 适应各种负载供电的分接单元
- 供电的可靠性和高可用性
- 高防护等级
- 分接单元电流高达1600A
- 适用TN-S电网

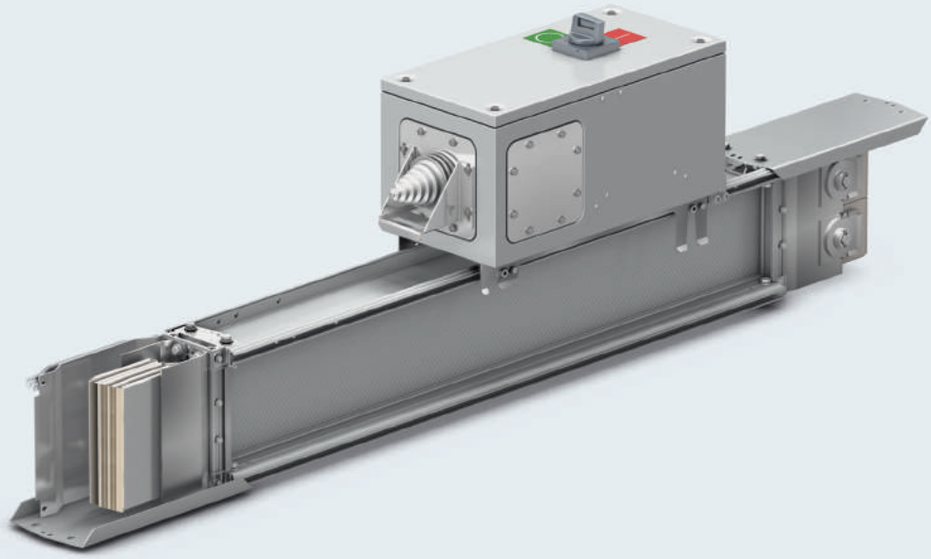
Typical demands

- Concept flexibility
- Flexible tap-offs for loads
- Reliable supply and high availability
- High degree of protection
- Tap-off units up to 1600 A
- TN-S grid

太阳能和芯片等制造业需要大量的电力，因此拥有自己的中压变压器。电源必须灵活，以适应制造领域的变化和引进不同性能要求的新机器。高功率密度要求大额定电流分接单元，电流可以高达1600A。

LI-M母线槽系统提供变压器和主配电柜之间的安全连接。通过安装在分接单元里面具有通讯功能的测量装置借助PROFIBUS，Modbus或PROFINET，能有效地进行能源管理，配电既安全又灵活，是因为有高防护等级和高短路耐受电流以及低火灾荷载，又因为有模块化的分接单元。

Manufacturing industries such as solar and microchip require large amounts of power and therefore have their own medium-voltage transformers. Power supply must be flexible to adapt to changes in the use of manufacturing areas and the introduction of new machines with different performance demands. The high power density for electrical power distribution requires large rated currents for tap-off units, plug-on / -off up to 1600 A.
The LI-M system provides a safe connection between the transformer and the main distribution board. Energy can be efficiently managed with communication-capable measuring devices and built-in tap-off units with interfaces for communication via PROFIBUS, Modbus or PROFINET. Power supply is both safe – with a high degree of protection, high sho rt-circuit rating and low fire loads – and flexible due to modular, plug-on / -off tap-off units.



LI-M母线槽系统的收益
Benefits of the LI-M system

可靠的技术与具前瞻性的功能完美结合
Proven technology combined with future-proof functionalities

LI-M母线槽系统适应负载变化并能集成能源管理系统，为客户提供更多的价值，保障投资风险，人员和设备安全，从设计规划，安装到操作，高效可靠且方便灵活，极具前瞻性。

The LI-M system offers the added value of a future-proof investment due to its flexibility in load change and integration into energy management systems. A reliable and flexible system that is safe for people and plant, and highly efficient from planning via installation to operation.

集成 完美系统集成且具有前瞻性	**Integrated** and future-proof for investments
安全 人员和设备	**safe** for personnel and equipment
高效 在项目不同阶段	**Efficient** in all project phases
灵活 设计到运行	**Flexible** in planning and operation
可靠 高使用性	**Reliable** for high availability

高效集成面向未来
Integrated and future-proof

投资一个高效的输电解决方案
Invest in an efficient power supply solution

收益 Benefit

- 与 SIVACON S8 开关柜连接经过设计验证
- LI-M 母线槽配有专用接口与室外浇注母线槽 LR 的连接
- 带通讯的测量设备可用于能源管理
- 带通讯的开关可远程操作和监测
- Design verified connection to SIVACON S8 switchboards
- Interfaces be tween LI-M system and cast-resin LR system for outdoor use
- Communication-capable measuring devices for energy management
- Communication-capable switching devices for remote switching and monitoring

LI-M 母线槽是输电产品和系统的一部分。与SIVACON S8开关柜及变压器的连接，安全可靠通过设计验证，还可以与其他西门子母线产品家族连接，包括 LR 室外浇注母线槽。

可配内置通讯和测量的开关，集成到公司的能源管理系统中。

其结果是提高了工业和基础设施使用的效率。

The LI-M system is part of an integrated product and system portfolio for power supply. A consistent and safe power supply is possible through design verified connections to SIVACON S8 switchboards and safe connections to transformers, as well as with the other SIVACON 8PS busbar trunking systems, including the LR busbar trunking system for outdoor installation.

It also enables future-proof integration into a company energy management system by using built-in communication-capable measuring and switching devices. The result: improved efficiency for industrial and infrastructure applications.

人员和设备安全
Safe for people and equipment

保护您的投资
Safeguard your investment

LI-M母线槽为您的员工和基础设施提供安全保障。依据IEC61439-1/6 和 GB/T7251.1/6 标准， 经过设计验证，连接SIVACON S8 配电柜，确保最佳的人员和系统保护，提供高可靠性。

低火灾荷载，轻而坚固的铝合金外壳，高防护等级和高短路耐受电流，这些特点有助于保障人员的安全和保护你的投资。

分接单元通过引导插接方式保障便捷可靠的安装万无一失。

为了满足防火保护措施的结构要求，LI 母线槽还可以配备满足国标 GB/T7251.6 的防火隔栅。

The LI-M system delivers safety for your staff and for your infrastructure. The design verified LI system in accordance with IEC 61439-1/6 and GB/T7251.1/6, as well as its design verified connection to SIVACON S8 power distribution boards . ensure optimum personnel and system protection, offering a high degree of reliability.

Features such as low fire loads, light and rugged aluminium housing, high degree of protection and high short-circuit rating help safeguard human life and your investment.

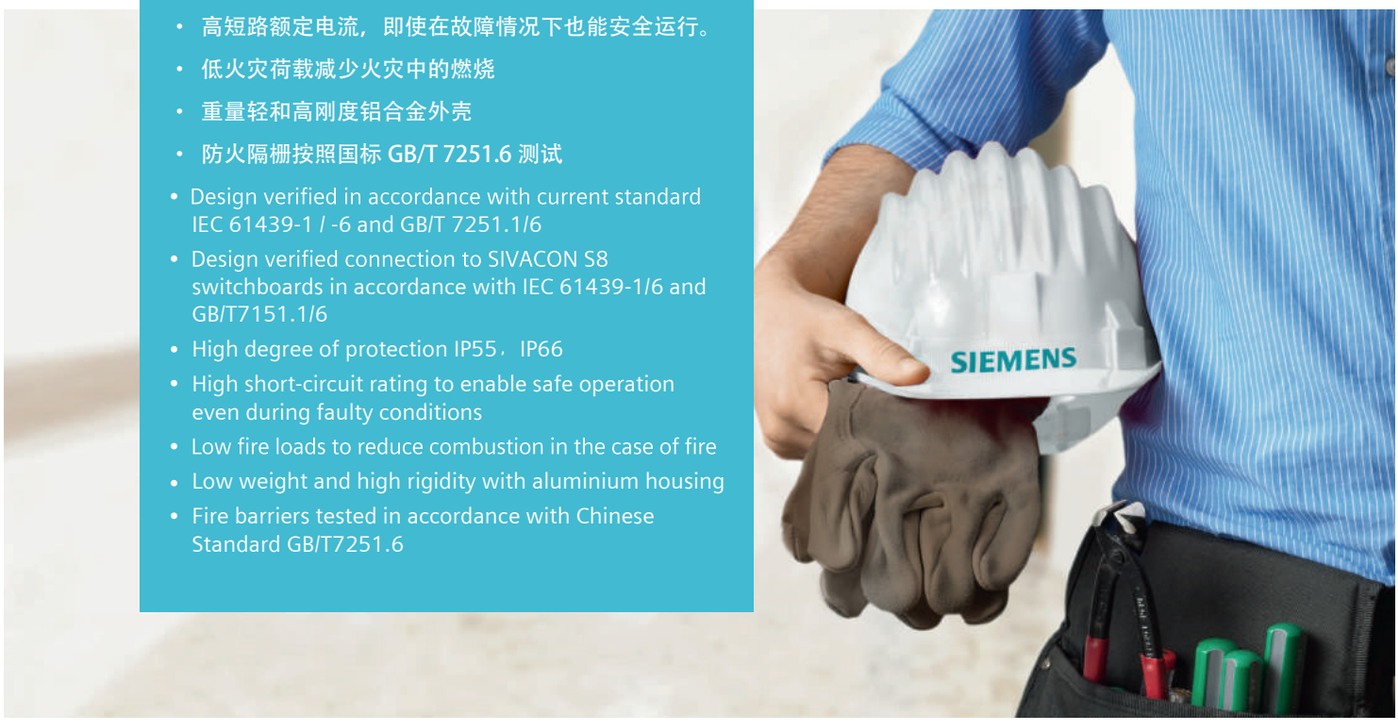
Guided plugging allows for easy and reliable installation without the risk of errors.

To meet structural requirements for preventive fire protection measures, the LI system can also be fitted with fire barriers, tested in accordance with GB/T7251.6 to comprehensively fulfill European building regulations.

收益 Benefit

- 按照最新的 IEC 61439-1 / 6 和 GB/T 7251.1/6 标准设计验证
- SIVACON S8 开关柜的连接经过 IEC 61439-1/-6 和 GB/T 7251.1/6 设计验证
- 防护等级达 IP55，IP66
- 高短路额定电流，即使在故障情况下也能安全运行。
- 低火灾荷载减少火灾中的燃烧
- 重量轻和高刚度铝合金外壳
- 防火隔栅按照国标 GB/T 7251.6 测试

- Design verified in accordance with current standard IEC 61439-1 / -6 and GB/T 7251.1/6
- Design verified connection to SIVACON S8 switchboards in accordance with IEC 61439-1/6 and GB/T7151.1/6
- High degree of protection IP55，IP66
- High short-circuit rating to enable safe operation even during faulty conditions
- Low fire loads to reduce combustion in the case of fire
- Low weight and high rigidity with aluminium housing
- Fire barriers tested in accordance with Chinese Standard GB/T7251.6



收益 Benefit

- 紧凑设计，线路优化和和组装
- 高透明度的分步式配电
- 简单的安装固定配件，适应不同建筑的结构
- Compact design for optimised run and assembly
- Decentralised power distribution for high transparency
- Simple fixing accessories to fit a range of building structures

项目不同阶段都高效省时
Efficient in all project phases.

西门子合作助力，为您项目节省宝贵时间
Optimize your time with Siemens as a competent partnert

西门子全集成能源专家为设计师提供专业咨询，技术规范文本和设计手册。

LI-M母线槽本身结构紧凑，安装方便，配有各种附件，如模块化的分接单元，转向单元，变压器进线单元和 SIVACON S8 柜联单元。

安装人员有各种安装固定配件可选，便于水平或垂直安装。

分接单元接近负荷，分布式配电使得运行操作更加高效

As a planner, you can benefit from professional consulting, specification texts, and planning manuals provided by our experts at Totally Integrated Power (TIP).

The LI-M system itself contributes to an efficient planning and installation by offering a compact design for assembly, as well as integrated components such as modular tap-off units, junction units, transformer feeding units, and SIVACON S8 connections.

Installers also have the choice between various fixing accessories for easy mounting of horizontal or vertical runs.

As the tap-off units are located close to the consumers and loads, the decentralised power distribution furthermore enables an efficient operation.

收益 Benefit

- 各种进线单元和附件连接变压器，开关柜和其他电源
- 多种导体配置适应不同电网型式
- 大电流母线采用双排紧凑型垂直段肩并肩设计
- 高达 1600 A 的分接单元，快速和方便的带电改造
- 模块化分接单元
- Variety of feeding units and accessories to connect to transformers, switchboards and other power sources
- Range of conductor configurations to fit grid types
- Compact design for high current ratings as double body side-by-side for vertical runs
- Quick and easy modification or expansion with plug-on / -off tap-off units up to 1600 A on energised runs
- Modular tap-off unit configuration

灵活的设计与运行

Flexibility in planning and operation

设计您安全长期可靠的解决方案
Design your safe and sustainable solution

设计阶段，LI-M 母线槽完善的附件可灵活设计输电系统。LI-M 母线槽提供多种导体配置适应不同电网要求，分接单元可以加装断路器和各种开关。

In the planning phase, the component portfolio of the LI-M system allows you to design your power supply system flexibly. The LI-M system offers a range of conductor configurations to fit any grid. Among others, tap-off units can be equipped with circuit breakers and switching devices.

多种连接单元及系统的紧凑设计使得母线槽走向能适应复杂场所或便于修改。

Manifold junction units as well as the compact design of the system enable busbar runs to be adapted to complex infrastructures, or easily modified.

例如，新的生产线需要分接单元为机器和工作场所供电，模块化设计和安装的简易性方便改造，节省时间。分接单元可带电插拔，电流高达1600A。

When new production lines might, for example, require new tap-off units for the machines and workplaces, the modular design and simple assembly of the LI system makes it possible to convert the workshop within a short space of time. Such quick and easy modifications are additionally supported by plug-on/-off tap-off units (up to 1600 A) connectable on energised busbar trunking systems.

与变压器连接有各种附件方便灵活。

Flexibility is also provided for connection to the transformer with various compatible accessories.

运行可靠
Reliable in operation

确保你的系统可用性
Secure your system availability

运行的高操作可靠性与经济指标同时兼顾，这个归功于紧凑的三明治设计，LI-M 母线槽实现低电压降电力传输，在满载环境温度高达40℃的情况下运行不降容。

LI-M 母线槽采用双头力矩螺母保证安全固紧到位。

拥有高水准的性能参数，如额定短路耐受电流，操作电压和防护等级，LI-M 母线槽确保本身及您的基础设施供电可靠性。

Economic targets go hand in hand with high operational reliability. Thanks to the compact sandwich design, the LI-M system allows power transmission with a low- voltage drop. Furthermore, the LI-M system can run at full load at high ambient temperatures up to 40 ℃, without derating.

The LI-M system also supports you through double head bolts with shear-off nuts to ensure joints are adequately tightened.

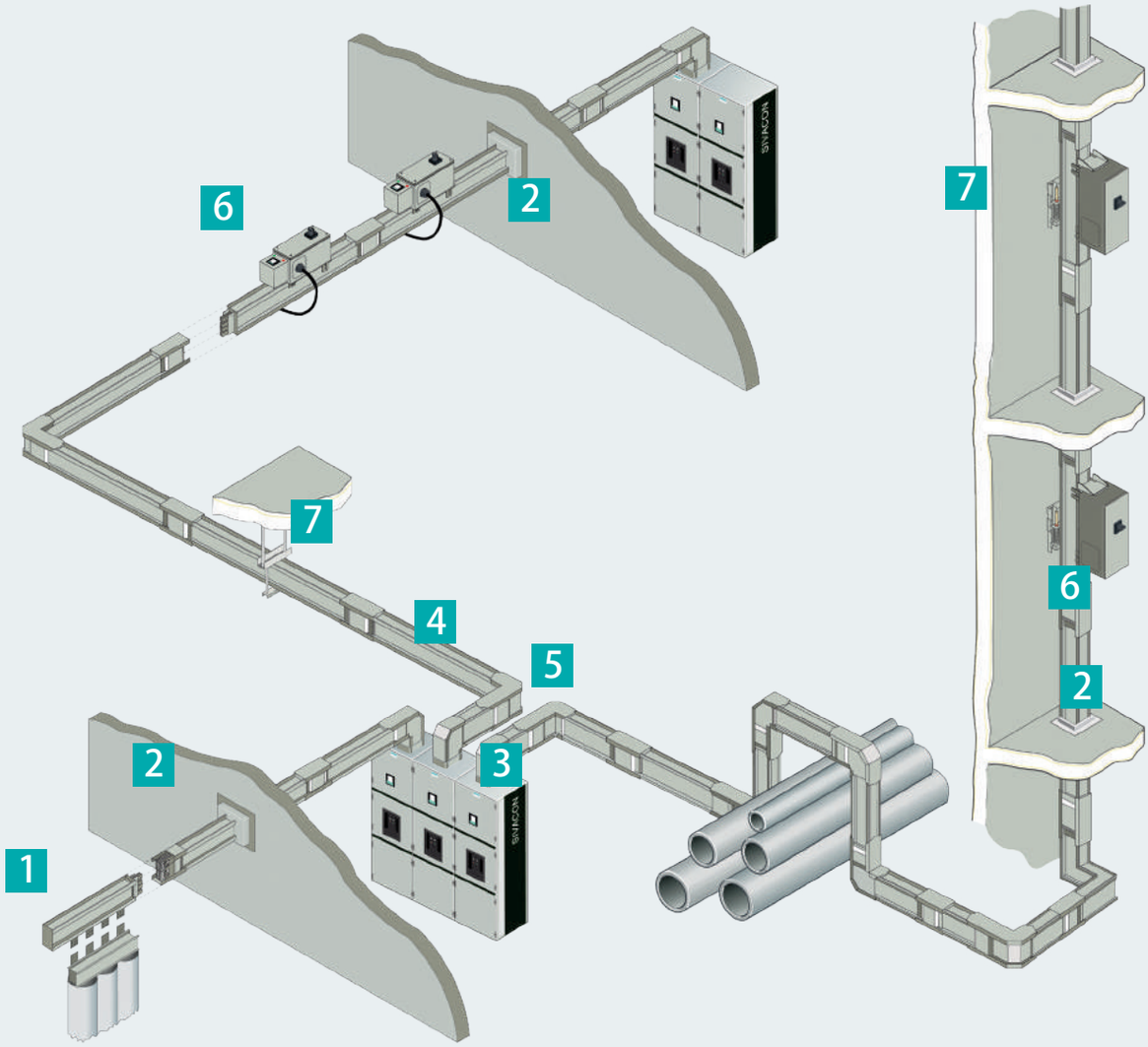
Delivering a high level of rated data such as short-circuit rating, operational voltage and degree of protection, the LI-M system ensures system and power supply reliability for your infrastructure.

收益 Benefit

- 按照最新标准 IEC 61439-1/6 和 GB/T 7251.1/6 设计验证
- 高工作电压 （Ue = 1000 V）
- 高短路额定电流
- 防护等级 IP66
- 满载 温度高达 40℃不降容
- 三明治式设计，线路长，电压降低
- Design verified in accordance with current standard IEC 61439-1/-6 and GB/T 7251.1/6
- High operating voltage (Ue = 1000 V)
- High short-circuit rating
- High degree of protection IP66
- Full loads at high ambient temperature (40 ℃)
- Long busbar runs with low-voltage drop due to sandwich design

SIVACON 8PS–LI-M母线槽系统
SIVACON 8PS – LI-M system

安全高效配电系统
A compact system for safe and efficient power supply



1 变压器馈电单元 Transformer feeding unit
2 防火隔栅 Fire barrier
3 SIVACON S8 进线单元 Feeding unit to SIVACON S8
4 直线段 Straight trunking unit
5 连接单元 Junction unit
6 分接单元 Tap-off unit
7 安装附件 Accessories for mounting

技术数据
Technical data

环境温度20℃

电流 (A) Current	额定短时耐受电流(KA) Short-time with stand current	峰值耐受电流(KA) Peak with stand current	交流电阻 (mΩ/m) Resistance	感抗 (mΩ/m) Inductance	阻抗/米 (mΩ/m) Impedance	百米压降(V) Voltage Drop Per 100 Meters	重量-四线制 (kg/m) Weight 4 wiresystem	重量-五线制 (kg/m) Weight 5 wiresystem
400	30	63	0.138	0.042	0.145	9.91	9.64	10.17
630	30	63	0.096	0.035	0.102	11.12	11.45	12.22
800	50	105	0.069	0.030	0.075	10.44	13.76	14.83
1000	50	105	0.051	0.025	0.057	9.84	17.12	18.58
1250	50	105	0.036	0.020	0.042	9.01	22.14	24.19
1600	80	176	0.028	0.017	0.033	9.09	27.17	29.80
2000	80	176	0.021	0.012	0.024	8.39	35.18	38.74
2500	80	176	0.016	0.008	0.018	7.86	44.49	49.14
3200	100	220	0.014	0.008	0.016	8.67	56.58	62.10
4000	150	330	0.010	0.006	0.012	8.24	71.48	78.74
5000	150	330	0.008	0.004	0.009	7.46	92.72	102.44

技术特点
Technical features

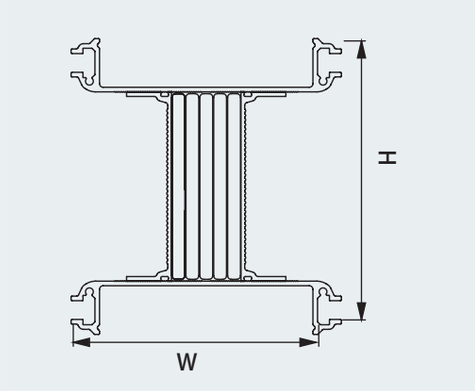
标准和规范 Standards and regulations		IEC 61439-1/-6, EN 61439-1/-6, GB/T 7251.1/6
环境温度（最低 / 最高 /24 小时平均）Ambient temperature (min. / max. / 24-hour average)	℃	–5 / +40 / +35
防护等级 Degree of protection		IP66
安装位置 Mounting positions		水平立放，水平平放和垂直 Horizontal edgewise, horizontal flat, vertical
表面处理 Busbar surface treatment		铜排镀锡或镀银（客户要求） Copper tin-plated or silver plated on request.
绝缘 Insulation		聚酯薄膜 Polyester film
外界机械载荷 Class of protection against external mech. loads		IK10
外壳材料 Trunking unit material		铝合金，粉末喷涂 Aluminium, powder-coated
插接箱材料 Tap-off unit material		钢板，粉末喷涂 Steel sheet, powder-coated
母线槽和插接箱颜色 Colour of trunking unit, tap-off unit		RAL 7035 (light grey)
额定绝缘电压 Rated insulation voltage in acc	V AC	1000
额定操作电压 Rated operating voltage (transmission) for overvoltage category III/3	V AC	1000
带插接箱额定操作电压 Rated operating voltage (energy distribution with tap-off units) for overvoltage category III/3	V AC	690
频率 Frequency	Hz	50 / 60
建筑结构中防火 Fire resistance in building penetrations	Min	240
防止火焰蔓延/阻燃特性 Flame spread prevention / flame retardant characteristics		符合GB/T7251.6-2015标准

IP66无分接单元仅用于输电

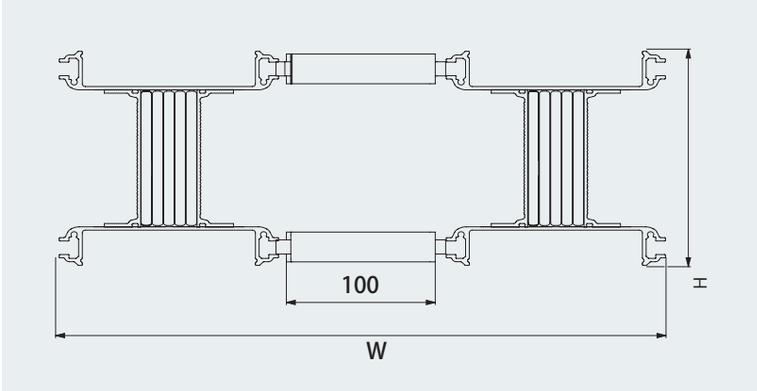
IP 66 for mere power transmission runs without tap-off

外形尺寸
Body sizes

节省空间，安装更容易
Compact dimension saves space and makes installation easier



单体 Single body



双体 Double body

外形尺寸

不同的额定电流和导体材料其外形尺寸不同。

铜排的数量取决于导体的配置要求：

- 单体外壳可配 3 至 5 根导体。
- 双体外壳可配 6 至 10 根导体。

Body sizes

Various sizes are available depending on rated current and conductor material.

The number of copper bars is determined by the conductor configuration required:

· Single bodies have one housing with 3 to 5 bars

· Double bodies have two housings with 6 to 10 bars

	尺寸：单体 Sizes: Single body			尺寸：双体 Sizes: Double body		
材料 Material	电流 A Rating	H mm	W mm	电流 A Rating	H mm	W mm
Cu	400	112	155	3200	190	410
Cu	630	112	155	4000	230	410
Cu	800	112	155	5000	287	410
Cu	1000	130	155			
Cu	1250	157	155			
Cu	1600	181	155			
Cu	2000	227	155			
Cu	2500	277	155			

选型代码
Type code

选型和订货数据
Selection and ordering data

LI-M 母线槽的每个基本附件都有一个代码。根据额定电流、导体材料和系统类型或导体配置进线选型。选型代码帮助您精确地定义所需的系统。

Each of the basic components of the LI-M system has a type code. The type is specified and selected on the basis of rated current, conductor material and system type or conductor configuration. This type code allows you to define the required system precisely.

选型案例：

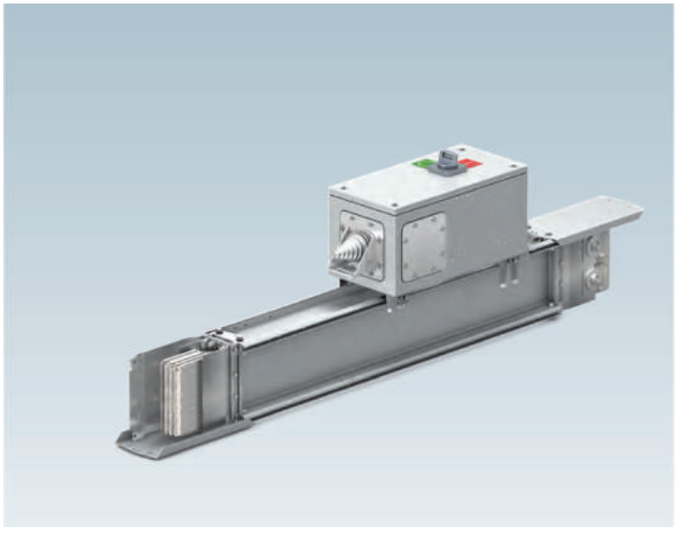
某项目的额定电流为 2500 A，三相五线制，铜导体，中性导体截面等于相线导体截面，独立 50% 接地系统

这样，选型代码为：LI-M C 2500 5G 66

Selection example:

A rated current of 2500 A is calculated for a project. Copper conductors are to be used. A 5-pole system with separate 50% PE (Earth) is required. The cross-section of the neutral conductor needs to be equal to the cross-section of the phase conductor.

This results in the following type code: LI-M C 2500 5G 66



直线段代码 Type code for trunking units	LI-M	-		....	..	-		- ... -	
导体材料 Conductor material									
铜 Cu	C								
额定电流 Rated current In [A]									
400			0400						
630			0630						
800			0800						
1000			1000						
1250			1250						
1600			1600						
2000			2000						
2500			2500						
3200			3200						
4000			4000						
5000			5000						
导体配置 Conductor configuration									
L1+L2+L3+PE[1]				3B					
L1+L2+L3+PEN/PE bar[2]				4B					
L1+L2+L3+N+PE[1]				5B					
L1+L2+L3+N+N+PE[1]				5C					
L1+L2+L3+N+PE bar[3]				5G					
L1+L2+L3+N+PE bar[2]				5H					
L1+L2+L3+N+PE bar[4]				5K					
L1+L2+L3+N+CPE[5]+PE[1]				6B					
防护等级 Degree of protection									
IP66				66					

1) 外壳作 PE 50% PE conductor = housing 50%

2)PE 独立导体 100% PE conductor=additional bar 100%

3)PE 独立导体 50% PE conductor=additional bar 50%

4)PE 独立导体 50% 铝合金排 PE conductor=additional aluminum bar 50%

5)CPE 独立导体 100% 且包裹绝缘 (干净接地) Separate PE conductor 100% and insulated (Clean Earth)

分接单元代码 Type code for tap-off units	LI	-	T	-	····	-	··	-	··	-	·	-	·	-	··	-	·	-	·	·	-	·	·
额定电流 Rated current In [A]																							
50					0050																		
63					0063																		
80					0080																		
100					0100																		
125					0125																		
160					0160																		
250					0250																		
400					0400																		
630					0630																		
800					0800																		
1250					1250																		
1600					1600																		
导体配置 Conductor configuration																							
L1+L2+L3+PE[1]					3B																		
L1+L2+L3+PEN/PE bar[2]					4B																		
L1+L2+L3+N+PE[1]					5B																		
L1+L2+L3+N+N+PE[1]					5C																		
L1+L2+L3+N+PE bar[3]					5G																		
L1+L2+L3+N+PE bar[2]					5H																		
L1+L2+L3+N+PE bar[4]					5K																		
L1+L2+L3+N+CPE[5]+PE[1]					6B																		
防护等级 Degree of protection																							
IP55							55																
开关 Switching device																							
3VL (17, 27, 37, 47, 57)											3VLxx												
3VA1											3VA1												
3VA2											3VA2												
3VA3											3VA3												
3VT											3VT												
开关极数 Number of poles of switching device																							
2-pole													2										
3-pole													3										
4-pole													4										

分接单元代码 Type code for tap-off units	LI	-	T	-	····	-	··	-	··	-	·	-	·	-	··	-	·	-	·	·	-	·	·

操作 Operator control	
摇杆 Rocker	RA
手动驱动 Manual drive	RD
马达驱动 Motor drive	MD
人工 Manually	MO

插入引导 Plugging guides	
带引导电流小于 630A With plugging guide for tap-off units ⩽ 630 A	G
不带引导电流大于 630A Without plugging guide for tap-off units > 630 A	N

电缆出线孔 Cable entry	
无出线孔 Blind plate	B
单芯孔 Single-core	S
多芯孔 Multi-core	M

电缆连接 Cable connection	
直接 Direct	D
带电缆头 With cable lugs	C

通讯 Communication	
无 Without	O
Modbus	M

电流互感器 Current transformer	
无 Without	O
有 With	T

导体配置
Conductor configuration

广泛的配置可适应不同的要求
Wide range of configurations available to fit different requirements

导体配置

LI -M母线槽提供不同导体配置，不同截面的N和PE以及独立PE导体（干净接地）是否需要包裹绝缘。

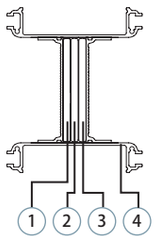
例如，为避免受谐波影响的电子负载引起中性线过载，或防止母线外壳中的干扰电位影响负载的工作能力，配置双中性线可以保障输电可靠。

Conductor configuration

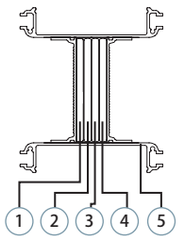
The LI-M busbar trunking system has different conductor configurations depending on the system type, the N and PE cross-sections, and on whether an additional insulated PE conductor (Clean Earth) is included.

For example, when neutral conductor over-load has to be avoided due to electronic loads subject to harmonics, or to prevent interference potentials in the busbar housing impairing the operating capability of loads, the configuration with double neutral provides a reliable power supply.

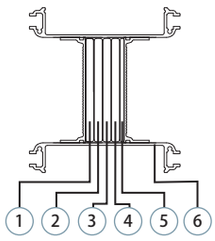
导体配置 Conductor configuration



①	②	③	④
L1	L2	L3	$PE_{hsg.}$



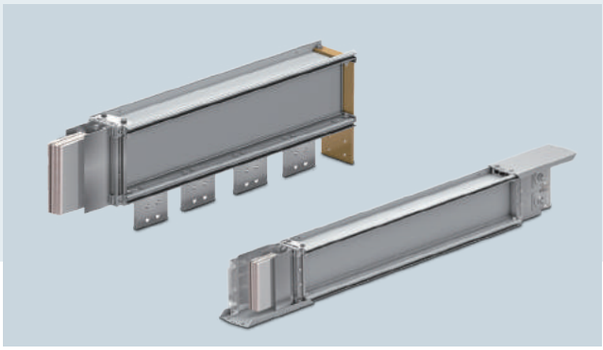
①	②	③	④	⑤
$PEN_{bar + hsg.}$	L1	L2	L3	$PE_{hsg.}$
①	②	③	④	⑤
N	L1	L2	L3	$PE_{hsg.}$

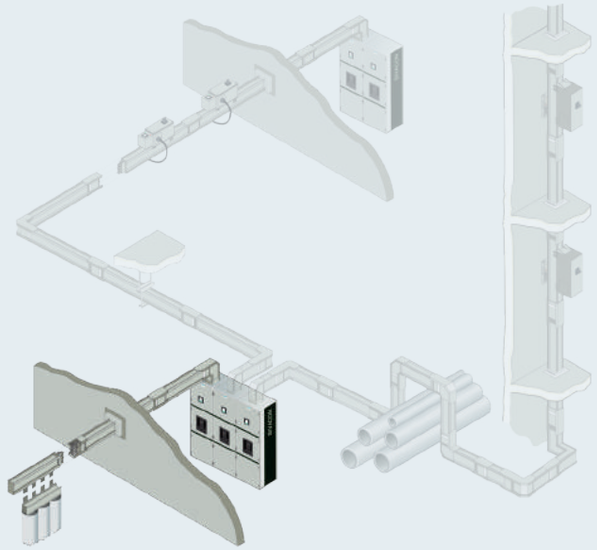


①	②	③	④	⑤	
N	L1	L2	L3	$PE_{50\% bar + hsg.}$	
①	②	③	④	⑤	⑥
N	L1	L2	L3	$CPE_{50\% bar}$	$PE_{hsg.}$

输电
Power transmission

安全、高效、灵活的解决方案
Safe, flexible and efficient solution





变压器进线单元 Transformer feeding unit
直线单元 Straight trunking unit

电力传输高达 5000 安培的 LI -M母线槽使变压器和低压配电柜之间的连接既灵活又可靠。各种变压器进线单元、直线单元，以及连接单元使规划设计具有高度的灵活性，以满足各种特定要求。

Power transmission up to 5000 A with the LI-Msystem is both flexible and reliable between transformers and low-voltage power distribution boards. Various transformer feeding units, trunking units, as well as junction units allow a high degree of flexibility in planning so as to meet the requirements of the specific application.

各种进线单元连接变压器，低压柜和电缆。

LI-M 母线槽提供多种变压器进线单元适配市面上的各种变压器，各种不同的额定电流，相序和相距。LI-M母线槽提供变压器进线侧面连接或从顶部连接单元。低压柜也可采用通用进线单元进行连接。

Various feeding units connect transformers, panels and cables
The LI-M system offers various transformer feeding units to fit the variety of transformers available on the market with different rated currents, phase sequences and phase distances. The LI-M system offers transformer feeding units with a lateral busbar connection or with a busbar connection from the top. The universal feeding unit can also be used to connect distribution boards.

收益 Benefit

- 各种进线单元和换向单元，使得配置方便灵活
- 紧凑的三明治设计使得长距离供电高效电压降小
- 设计验证的整个母线槽包含与 SIVACON S8 开关柜连接确保电力传输安全
- Flexible planning thanks to various feeding units and junction units
- Efficient power transmission with low voltage drop over long distances thanks to compact sandwich design
- Safe power transmission thanks to design verified system including connection to SIVACON S8 switchboard

换向单元 Junction units

与SIVACONS8连接
Connection LI system / SIVACON S8

用于变压器和低压开关柜连接的直线段以及换向单元

LI-M母线槽采用三明治结构，传输电流大，电压降小。各种换向单元适应各种建筑结构。直线段长度从0.50米到3米，选型精确到 1 毫米。

多种标准或客户定制换向单元可应用于无论多复杂的建筑。

依据 IEC 61439 和 GB/T7251 标准设计验证，SIVACON S8 低压柜连接安全可靠。

作为全集成的解决方案，LI- M母线槽提供了通过设计验证的用于连接到额定电流高达 5000 A 的 SIVACON S8 开关柜。连接部位在顶部或侧面。

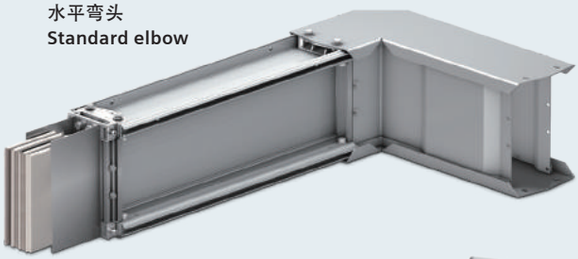
Straight trunking and junction units for a reliable and flexible run between transformer and low-voltage switchboard

The LI-M system transmits large amounts of power over large distances with low-voltage drops thanks to its sandwich design. Junction units like knees and elbows for changing directions into vertical and horizontal run positions serve perfectly to various building structures. Straight trunking units precisely fit your building requirements with three standard lengths and individually selectable lengths from 0.50mupto3.00mona1mmscale.

Furthermore, various elbows and knees are available with either standard or customised dimensions and angles to meet the exact structure of your building, however complex. Design verified connection in accordance with IEC 61439 and GB/T7251 between LI system and SIVACON S8 panel for a safe and reliable power supply

As an integrated solution, the LI-M system offers a design verified connection to the SIVACON S8 switchboard for rated currents up to 5000 A. Flexible connections to the power distribution board can be made from above or on the side for a safe, reliable, and efficient power supply.

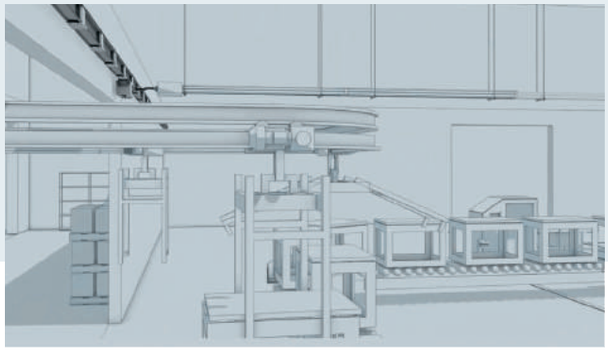
水平弯头
Standard elbow

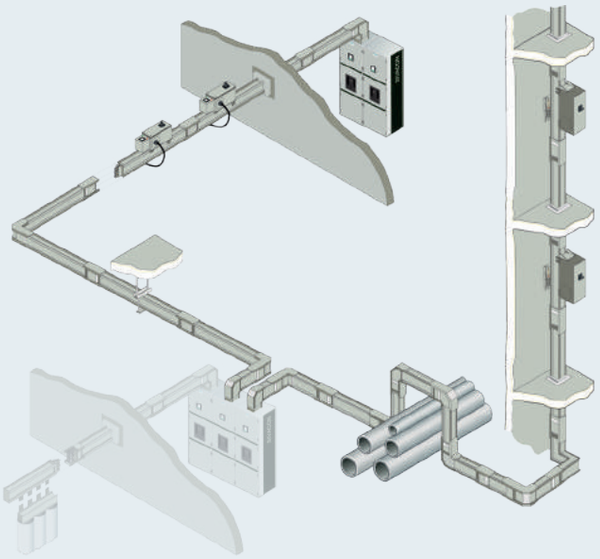


垂直弯头
Standard knee

配电
Power distribution

安全、灵活和前瞻性的解决方案
Safe, flexible, and future-proof solution





配电是母线槽的主要应用。母线槽和电缆比较，优势是高度的灵活性，未来改造的方便性。

Power distribution is the main application of busbar trunking systems. The advantage of such systems over cable installations is a high degree of flexibility allowing easy modifications in the future.

当需要水平和垂直供电时，LI-M 母线槽是不二之选。

此外，模块化分接单元适合各种应用场景。很容易集成到能量管理系统中，内置测量装置可以满足未来需求。

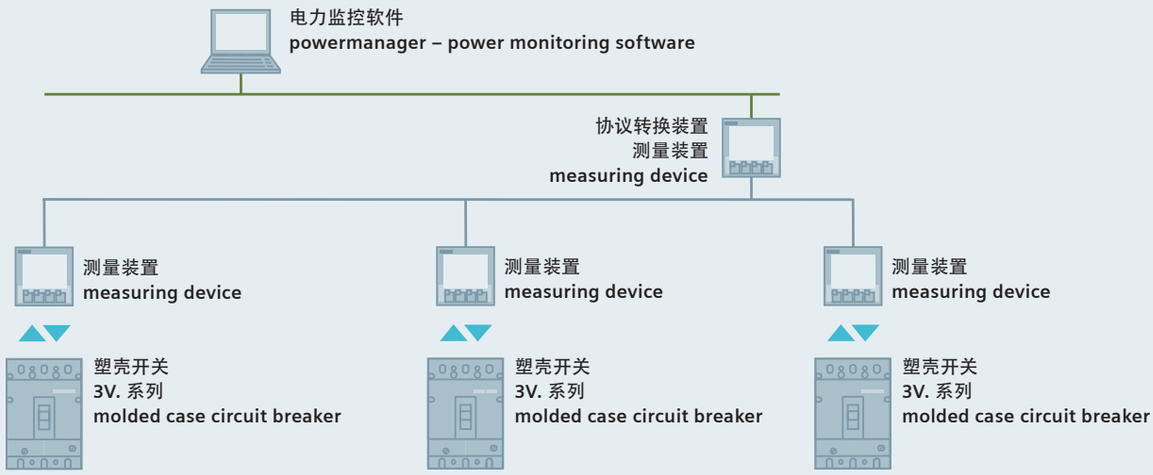
The LI-M system is the right solution where power distribution has to be flexibly implemented with horizontal and vertical runs.

Furthermore, its modular tap-off units allow to suit various applications. For easy integration into the energy management system, measuring devices can be built into tap-off units for a future-proof solution.

收益 Benefit

- 多种分接单元使得设计灵活
- 系统配电的安全性得到设计验证
- 系统易于改造，配电极具灵活性
- 集成能源管理方案，配电具备前瞻性
- Flexible planning thanks to various tap-off units
- Safe power distribution thanks to design verified system
- Flexible power distribution thanks to easy modification
- Future-proof power distribution thanks to integration in energy management solutions

电力监控案例 Example for power monitoring



母线槽在整条线路上通过可插拔单元提供灵活配电。如果有位置或负载的变动，无须停电就可以实现在任何位置的取电。只需在相关位置，安装分接单元。分接单元可以安装在直线段的单侧或两侧，其结果是在某一线路或区域，达到分散灵活的分布式配电系统。

分接单元从 50A 到 1600A 可选。

坚固耐用的分接单元外壳确保防护等级 IP55。额定操作电压（U_e）为 690 V。

前瞻性的系统

LI -M母线槽提供集成的和带通信测量设备和部件以实现最佳能源管理（包括 Modbus RTU及其他协议）。

Busbar trunking systems provide flexible power distribution via plug-on / -off tap-off units along the entire LI run. If there are changes of location or modifications of the load power, the power supply can be easily adapted – w ithout downtime. Power can be tapped at any given point by simply positioning a tap-off unit at the required location on the busbar. Tap-off units can be mounted on one or both sides of straight trunking units. The result is a flexible distribution system for decentralised power supply to a particular line or area.

Tap-off units are available from 50 A to 1600 A for load connections.

Rugged tap-off unit enclosures ensure IP55 protection irrespective of the mounting position. The rated operational voltage (Ue) is 690 V.

Future-proof system

When energy data for transparent power flows or remote switching and monitoring are required, the LI-M system offers integrated and communication-capable measuring devices and compone nts for optimum energy management (including communication capabilities for Modbus RTU and other agreements).

分接单元尺寸 Tap-off units dimensions

尺寸 Size	额定电流 I_n A	最大尺寸 Max dimension（mm） L	W	H
1	160	560	250	307
2	160- 250	650	414	337
3	250-400	850	494	409
4	400-630	910	534	409
5	630	910	624	439

电缆进线到分接单元

电缆可以从侧面或从尾部进入。分接单元标准配置采用带单芯电缆孔的铝板作为进线板。也可提供多芯电缆接头或单芯电缆接头。

安装和操作安全

- 带引导装置的插接口，避免插错，在插接过程中保证防护等级 IP2X，IPXXB。同时清晰定义了分 / 合状态
- 在装配或拆卸过程中，PE 触点确保与保护导体连接
- 强制的操作顺序，保证在拆卸过程中分接单元的绝缘和安全。
- 带电条件下，可快速便捷的对分接单元进行更换或扩容（高达 1600A)。
- 分接单元机械连锁，除非手动分闸，否则分接单元不能打开。
- 分接单元打开后电缆连接区域不带电。
- 分接单元上接线端“手指防触碰”设计。

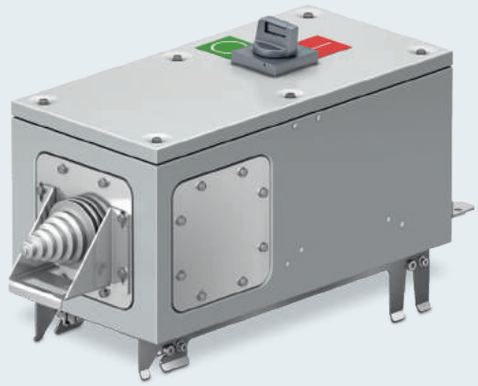
Cable entry to tap-off units

Cable entry is possible from the side or from the end. The basic tap-off units are designed with aluminium plates for entry of single-core cables where cable glands are supplied locally. As an accessory, cable entry plates with fitted cable grommets are available for multi-core and single-core cables.

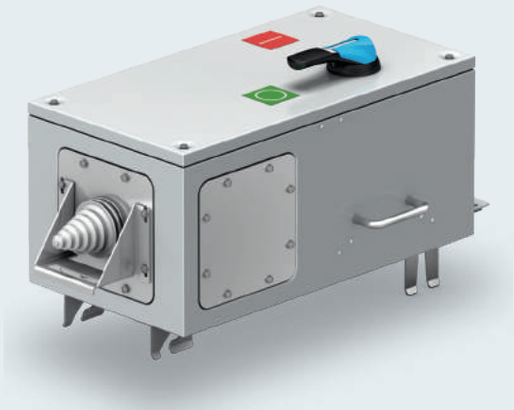
Safe in installation and operation

- Guided plugging on the tap-off point avoids incorrect fitting, ensures IP2X, IPXXB during the plugging process, and defines a clear connected I disconnected status
- Leading PE contact ensures a protective conductor connection during assembly or disassembly
- Isolation of tap-off units during removal is assured by a compulsory sequence of operations
- Quick and easy modification or expansion with plug-on / -off tap-off units (up to 1600 A) on energise runs
- Tap-off units cannot be opened unless the protection device is switched off manually
- Cable connection area is then no longer energised
- Contact device section in the front of the tap-off unit is "finger-proof"

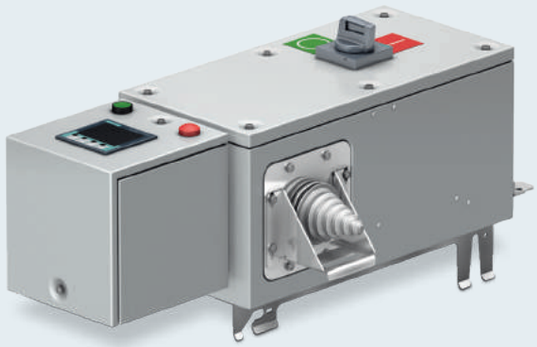
模块化的分接单元Modular tap-off units



带断路器的分接单元 Tap-off unit with circuit breaker



带熔断器的分接单元 Tap-off unit with fuse-type switching device

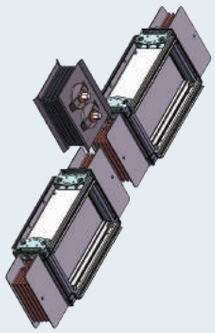


带测量的分接单元 Tap-off unit with measuring device

安装
Installation

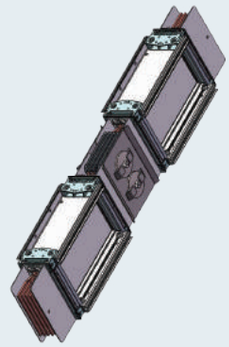
安装安全可靠
Safe and reliable installation

Step 1



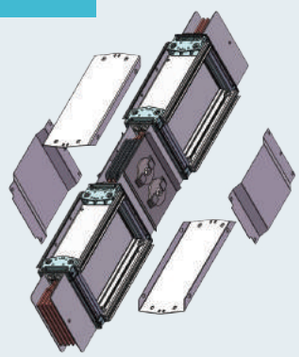
将母线端与端对齐。
Align the trunking ends .

Step 2



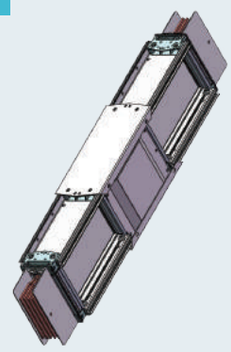
拧紧自动扭矩螺栓，直到螺母的外头扭断为止。这表明达到扭断力矩70Nm。
Tighten the self-torque bolt until the outer head of the nut shears off. This indicates a correct torque level of 70Nm.

Step 3



安装连接侧盖，然后安装上下盖板，紧固螺钉。
Install side covers followed by top and bottom covers. Then, fasten bolts.

Step 4



最后安装好，防护等级达到IP66。
The final connection fulfils the degree of protection IP66.

通过力矩螺栓，母线槽安装既高效又可靠

Trunking units are assembled easily and safely with shear-off nuts for efficient and reliable installation

母线槽连接

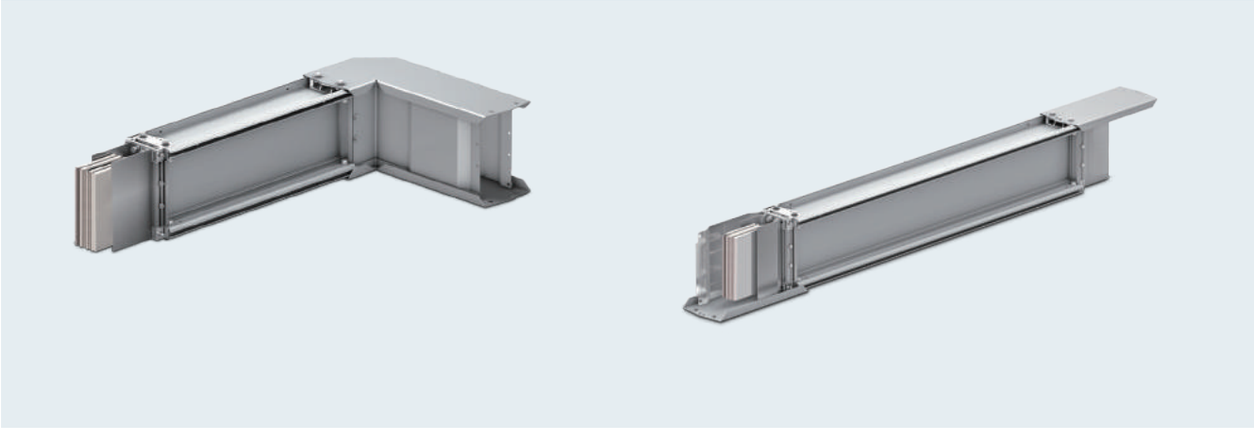
用普通扳手拧紧螺栓，当达到一定力矩后，第一个螺栓头掉落，确认安装到位，安装侧面盖板后，再安装连接器上下盖板。

Busbar connection

On a busbar trunking unit, the bolt is tightened using a standard spanner. When the necessary clamping pressure is reached, the upper nut head is automatically sheared off. This gives simple and instant confirmation of correct assembly. After tightening the bolt, the clamping point is covered with a connection flange. The side protection cover can only be fitted once the upper nut head has been sheared off.

收益 Benefit

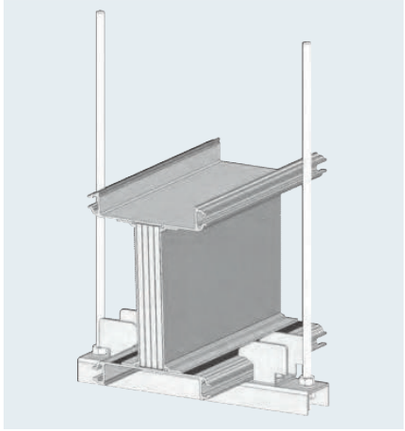
- 母线槽连接达到防护等级 IP66
- 高质量连接，低接触电阻
- Safe busbar trunking connection with IP66
- High connection quality with low contact resistance



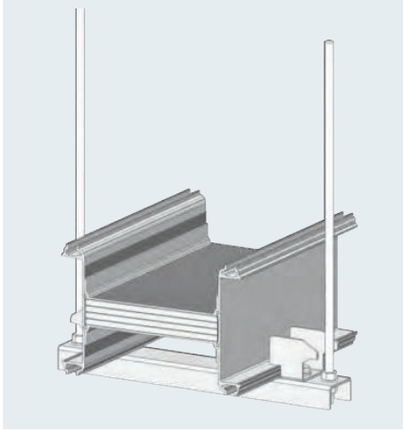
固定支架
Fixing brackets

简单的安装配件，适应不同的建筑结构
Simple fixing accessories to fit a range of building structures

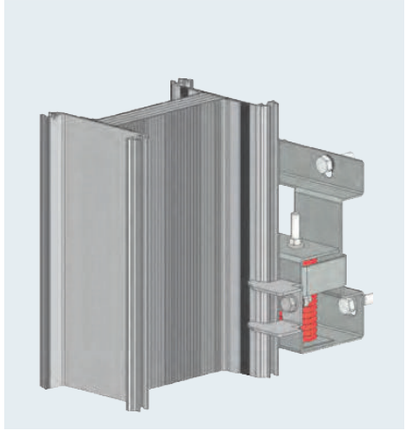
水平安装支架，立放
Horizontal fixing bracket, edgewise run



水平安装支架，平放
Horizontal fixing bracket, flat run



垂直安装支架
Vertical fixing bracket



根据建筑物的结构要求选择不同的固定附件，LI-M 母线槽可以安装在墙壁上或楼板。

水平安装

在水平立装和水平卧装时使用：

- U 型材
- 固定夹板装置

U 型材和固定板配合使用，LI-M 母线槽安装固定达到优化。

垂直安装

垂直安装所需的特殊弹簧支架用于固定在沿壁向上竖井中。弹簧支撑器的尺寸按照承载母线的重量确定，楼层高度达到 3.90 米

With its range of fixing accessories, the LI-M system can be mounted efficiently either on walls or ceilings, depending on the building structure requirements.

Horizontal installation

Fixing of the LI system in horizontal edgewise and in horizontal flat mounting positions is possible with:

- U-profile sizes
- fixing clamp units

The combination of U-profile and fixing clamps enables optimum fixing of the LI-M system.

Vertical installation

Special spring brackets are required for vertical installation, in order to fix the LI run in shafts running upwards along the wall. The spring bracket is dimensioned to carry the weight of the busbar run for floor heights up to 3.90 m.

收益 Benefit

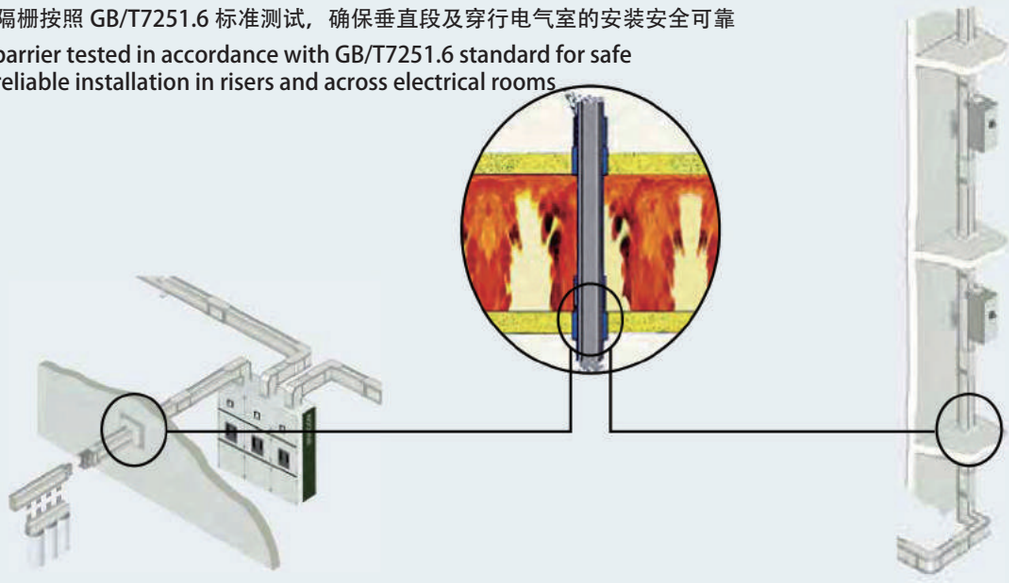
- 模块化组合，方便安装
- 基础设施的有效集成
- Modular portfolio for flexible fixing
- Efficient integration in the infrastructure

防火隔栅
Fire barriers

内置隔栅保障设施安全
Built-in prevention for a safe infrastructure

防火隔栅按照 GB/T7251.6 标准测试，确保垂直段及穿行电气室的安装安全可靠

Fire barrier tested in accordance with GB/T7251.6 standard for safe and reliable installation in risers and across electrical rooms



根据相关规定，建筑物必须设计成“防止火灾和烟雾蔓延，如遇火灾，可灭火并挽救人员及动物生命“。也就是说不允许任何火焰或烟雾从一个楼层或消防路段蔓延到另一个楼层。

依照GB/T 7251.6满足中国的建筑要求，LI 母线槽防火隔栅已经通过防火测试 240 分钟。

The building regulations prescribe that buildings must be designed in such a way that “fire and smoke are prevented from starting and spreading and that, if there is a fire, effective fire fighting and the saving of human and animal life is possible”. This means that no fire or fumes are permitted to spread from one floor or fire section to another.

The LI system fire barrier has been tested for fire resistance classes 240 min in accor-dance with GB/T7251.6 to meet Chinese building requirements.

收益 Benefit

- 人员和基础设施的安全等级高
- 测试按照 GB/T7251.6
- 提供不同防火栅及解决套件
- High degree of personel and infrastructure safety
- Tested in accordance with GB/T7251.6
- Flexible with kit solution for fire barriers

各办事处地址

公司业务联系号码：0511-8822 2188

办事处	地　点
北京办	北京市东城区四十条甲22号南新仓国际大厦B座1023室
广州办	广州市天河区天河路490号壬丰大厦908-909室
深圳办	深圳市龙华区龙华街道油松路106号天汇大厦A栋411室
浙江办	杭州市萧山区钱江世纪城皓月路159号诺德财富中心703室
上海办	上海市浦东新区张杨路828-838号华都大厦29楼EF座
苏南办	南京市江宁开发区隐龙路28号大全工业园区办公大楼5F
苏北办	江苏省南通市南通经济技术开发区橡树湾15栋1005室
安徽办	安徽省合肥市包河区徽州大道1158号银杏苑银杏大厦3单元806室
山东办	青岛市北区台柳路175号和达中心城2号楼1单元1501室
湖北办	武汉市建设大道568号新世界国贸大厦1座0916室
成都办	四川省成都市总统府2号时代广场A座10F-6
重庆办	重庆市北部新区高新园新光大道68号天王星大厦C楼16F
贵州办	贵阳市观山湖区金阳北路富力中心A栋301室
西南办	广西南宁市青秀区名族大道143号德瑞花园1栋A单元203室
昆明办	昆明市官渡区春城路米兰国际B座2106室
海南办	海南省海口市海府路18号南亚广场B栋2306室
西安办	西安市和平路93号世纪广场桃园公寓1203室
福建办	厦门市禾祥西路639号301室
天津办	天津市西青区华天道8号海泰信息广场D座1409室
河南办	郑州市二七区二七路200号金博大城B座1203室
河北办	石家庄市中华南大街与建国路交口发源小区1号楼3单元1602室
山西办	山西省太原市小店区许西小区401室
沈阳办	沈阳市和平区青年大街386号华阳国际大厦2461室
吉林办	长春市朝阳区康平街889号润天国际大厦1503室
黑龙江办	黑龙江省哈尔滨市南岗区长江路179号金源花园C座1805室
江西办	江西省南昌市红谷滩新区红谷中大道国际金融中心纽约馆607室
湖南办	长沙市韶山北路460号兴威名座大厦3201室
兰州办	甘肃兰州市七里河区建兰路381号光明城2号楼1单元24楼1号
新疆办	新疆乌鲁木齐天鹅湖路2号爱地大厦2104室
内蒙办	呼和浩特市赛罕区巨海城七区3栋2单元901室

镇江西门子母线有限公司
ZHENJIANG SIEMENS BUSBAR TRUNKING SYSTEMS CO., LTD.
地址：江苏省扬中市新坝科技园区大全路 11 号
Add: NO.11, Daquan Road, Xinba Technology Zone, Yangzhong City, Jiangsu Province, P.R.C
电话（Tel）： **0086 0511-8822 1108**
传真（Fax）：**0086 0511-8822 1106**
E-mail：zsb@zsb.daqo.com
网址：**www.zsb-daqo.com**
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