Energy and data successfully put on track

SIVACON 8PS busbar trunking systems

siemens.com/sivacon-8PS

Busbars instead of cables

Always the right solution, even for complex requirements

Table of contents

Six systems for different applications, currents from 40 A to 8,200 A, well thought-out system components for all tasks in the main distribution and sub-distribution:
The SIVACON 8PS busbar trunking systems are the perfect solution for the challenges of electric power distribution, and they are an attractive alternative to conventional cables.

Simply more versatile: SIVACON 8PS busbar trunking systems

No matter whether for complex applications in building technologies or in the industrial sector, SIVACON 8PS busbar trunking systems score with transparent, flexible solutions – especially with high efficiency and reliable power supply. They are your ideal entry into digitalisation – with software and data from planning through installation to operation. Therefore, the following applies in high-rise buildings and in the industrial sector, in craft as well as in trade, in wind turbines as well as in solar plants: With SIVACON 8PS busbar trunking systems you benefit sustainably from the added value of the systems as a planner, an installer, and a customer.

Safe, reliable, and flexible

Thanks to design verified low-voltage switchgear and controlgear assemblies in accordance with IEC 61439-1/-6, and also to their high short-circuit rating and the low fire load of their metal housings, the SIVACON 8PS busbar trunking systems offer a high level of safety for personnel and equipment. And if your requirements change, new challenges can also be addressed with the SIVACON 8PS busbar trunking systems easily, quickly, and with a high degree of flexibility.

Making efficient use of data in the digital age

Notice the benefits of digitalisation in each project phase – from planning through installation to operation: SIMARIS software tools support your efficient planning; Building Information Modeling (BIM) data merge to digital busbar runs as a digital twin in building infrastructure, the BusbarCheck app accompanies you through the installation process. Additionally, with the installation of powerline modules, the busbar trunking systems enable cost-efficient and safe data transmission into higher-level automation and energy management systems as well as into cloud-based solutions (IoT).

SIVACON 8PS busbar trunking systems at a glance:

Convincing cost-efficiency

- Enhanced planning certainty
- Space-saving due to compact design
- Easy installation, including documentation
- High level of flexibility in planning and operation
- Cost-efficient data transmission for easy integration into overall systems as well as cloud-based solutions

High system and operational safety

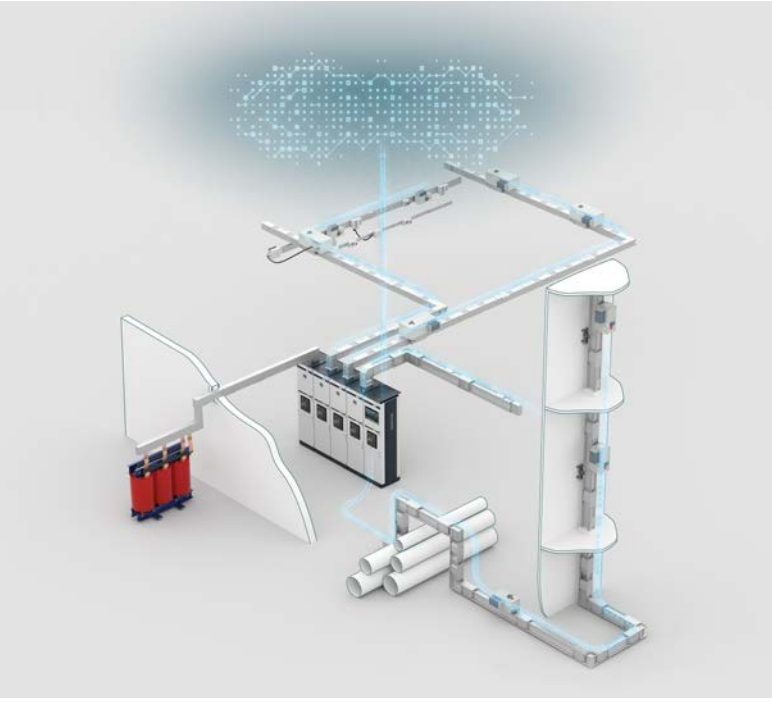
- Design verified low-voltage busbar trunking systems and connections to SIVACON S8 switchboard
- Low fire load

High reliability

- High short-circuit rating
- Good electromagnetic compatibility
- Easy trouble shooting and error correction

One-stop shop

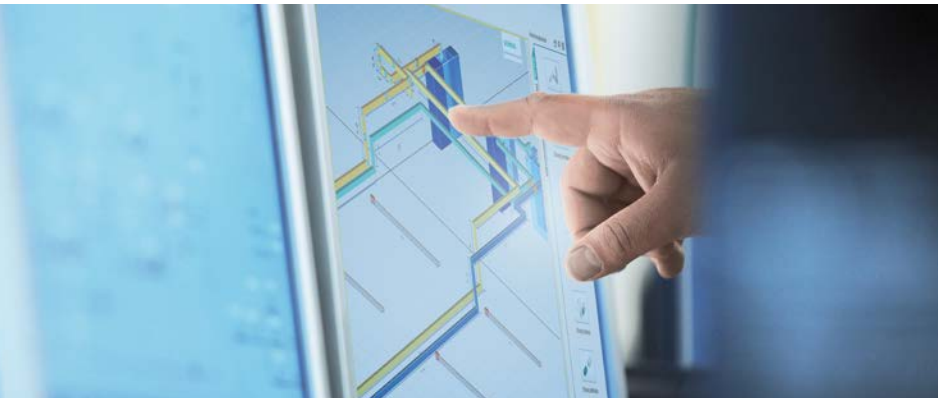
- Support from planning via installation to operation
- Complete portfolio from 40 A to 8,200 A



SIVACON 8PS busbar trunking systems – of today – for tomorrow

Sustainable system advantages for your success

SIVACON 8PS busbar trunking systems complemented with powerful software tools and smart system technology offer you a multitude of advantages during planning, installation, and operation across the entire lifecycle of your equipment.



Comfortable planning: with the SIMARIS tools

Simplify the planning of electric power distribution for industrial plants, infrastructure, and buildings:
The innovative SIMARIS software tools support you perfectly as an electrical planner.

- **SIMARIS design**
  Minimum input effort, maximum result: With SIMARIS design, you can calculate grids including the short-circuit current based on real products.
- **SIMARIS project**
  Thanks to SIMARIS project you will know exactly how much space is required for electric power distribution in your building.
- **SIMARIS sketch**
  Designing routing diagrams for the BD01, BD2, LD, LI, and LR busbar trunking systems in 3D? No problem with SIMARIS sketch!

siemens.com/simaris

Digital twin made easy: with BIM data

BIM simplifies the planning process. While the simple exchange of relevant building data between the planner and the facility manager ensures quality and reduces costs, the digital twin of the power distribution system seamlessly integrates into overall constructions – for efficient planning, implementation, and maintenance.

siemens.com/bim-eplanning

Faster installation, high-quality documentation: with the BusbarCheck app

With SIVACON 8PS busbar trunking systems, you will have an operational system in less time while saving expensive installation space thanks to its compact design.
For this purpose, the BusbarCheck installation app provides all information required, such as installation instructions, for example. At the same time, the app identifies and optically documents each connection point. At the push of a button, a digital protocol of all connection points is generated from this as a documentation of the high-quality installation for the customer.

http://sie.ag/busbar-itunes
http://sie.ag/busbar-android

Flexible and cost-efficient operation: the advantages of tap-off units

With regard to future changes in use, cost-efficiency and flexibility of the power distribution are especially important.
With SIVACON 8PS, system extensions or modifications can be easily planned and implemented, because everything matches here. While power can only be tapped off at the pre-defined points in the case of conventional cable installations, current tap-offs can be individually varied with the SIVACON 8PS busbar trunking systems thanks to flexibly deployable tap-off units. In addition, the switching devices can be more easily assigned to the loads, which increases transparency and simplifies trouble shooting.

Fit for the digital future: transmission of current and data via busbar

In modern smart grids, not only a reliable power distribution is needed, but also data transmission for energy management and predictive maintenance of power distribution itself. For this, SIVACON 8PS busbar trunking systems integrate communication-capable measuring and switching devices into the tap-off units, and data are safely and reliably transferred through the conductors of the busbar by means of powerline modules – plug and play – without additional data cables. The powerline modules can also be retrofitted for your existing SIVACON 8PS power distribution system in order for you to be able to perfectly coordinate your power distribution system at any time with automated operating procedures, machine operations, and process sequences.

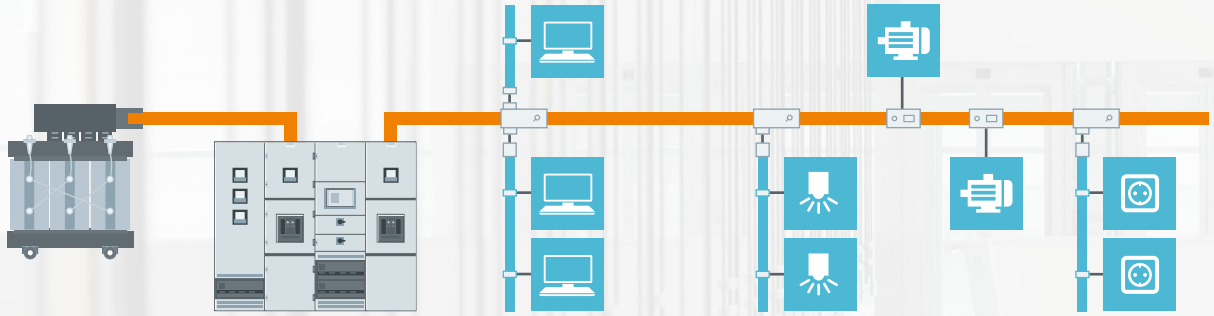
Typical busbar trunking system installation

Comparable cable installation

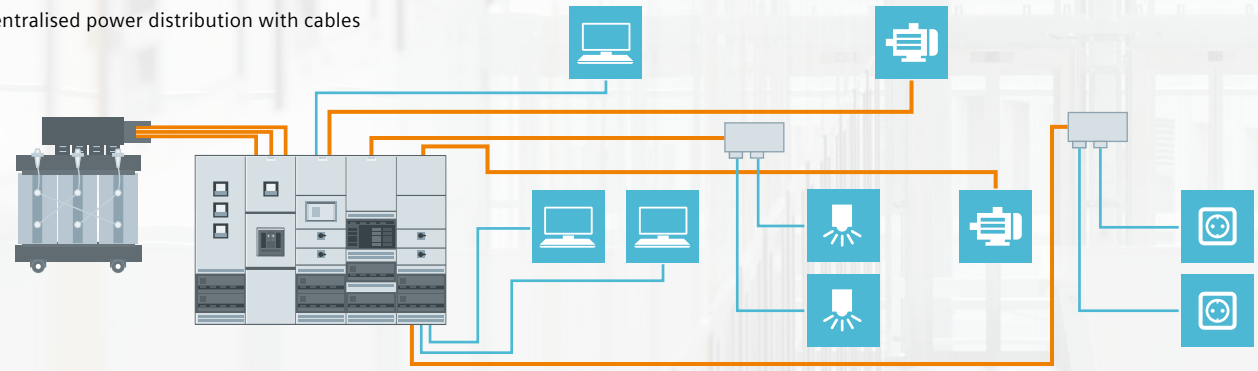
	SIVACON 8PS busbar trunking systems	Cable
Conformity with standards	• Design verified in accordance with IEC 61439-1/-6 • High current carrying capacity, operational safety, and short-circuit rating	• Individual solution; compliance with standards much more difficult to prove (for example, consideration of derating factors)
Fire load	• Very low	• Very high, dependent on cable type
Flexibility in the event of changes, expansions, or the relocation of load focal points	• Very high flexibility thanks to variable tap-off units, which can be modified, added or replaced as required, even while energised[1)] • No downtimes • Adaptable power supply	• High effort: Replacement of existing devices or expansion with additional tap-offs in the switchboard and the associated modifications in the cable installation • Long downtimes • Rigid power supply
Space requirements	• Very low thanks to compact design, installation with contours matching the building structure • Smaller installation surface due to reduced size of the central switchboard	• High due to bending radii, laying method, and accumulation • Larger installation surface of the central switchboard due to integrated protection devices
Trouble shooting and error correction	• Easy, thanks to clearly arranged installation and switching devices close to the consumer	• Time-consuming due to less clearly arranged installation and switching devices far away from the loads
Electromagnetic influence	• Low influence due to suitable arrangement of conductors	• Relatively high for standard cables • No defined arrangement of conductors
Installation time	• Short installation time	• Long installation time
System design and operation (system lifecycle)	• High level of safety and availability thanks to pre-configured and standardised tap-off units • Planning: Safety in quality and costs • Installation: Plug and play, easy configuration changes • Operation: Design verified standard/ modular system for easy configuration changes, maintenance, and spare part management	• High efforts for cable installation and centrally arranged protection and switching devices • Planning: Detailed planning and budgeting required in advance • Installation: Changes on site or later during operation are complicated, and larger installation surface is required • Operation[1)]: Configuration changes are only possible when the system or complete sections are shut down
Connection to automation and energy management systems as well as to the cloud (IoT)	• Simple and cost-efficient integration thanks to standardised powerline technology	• Complicated due to laying of parallel communication cables

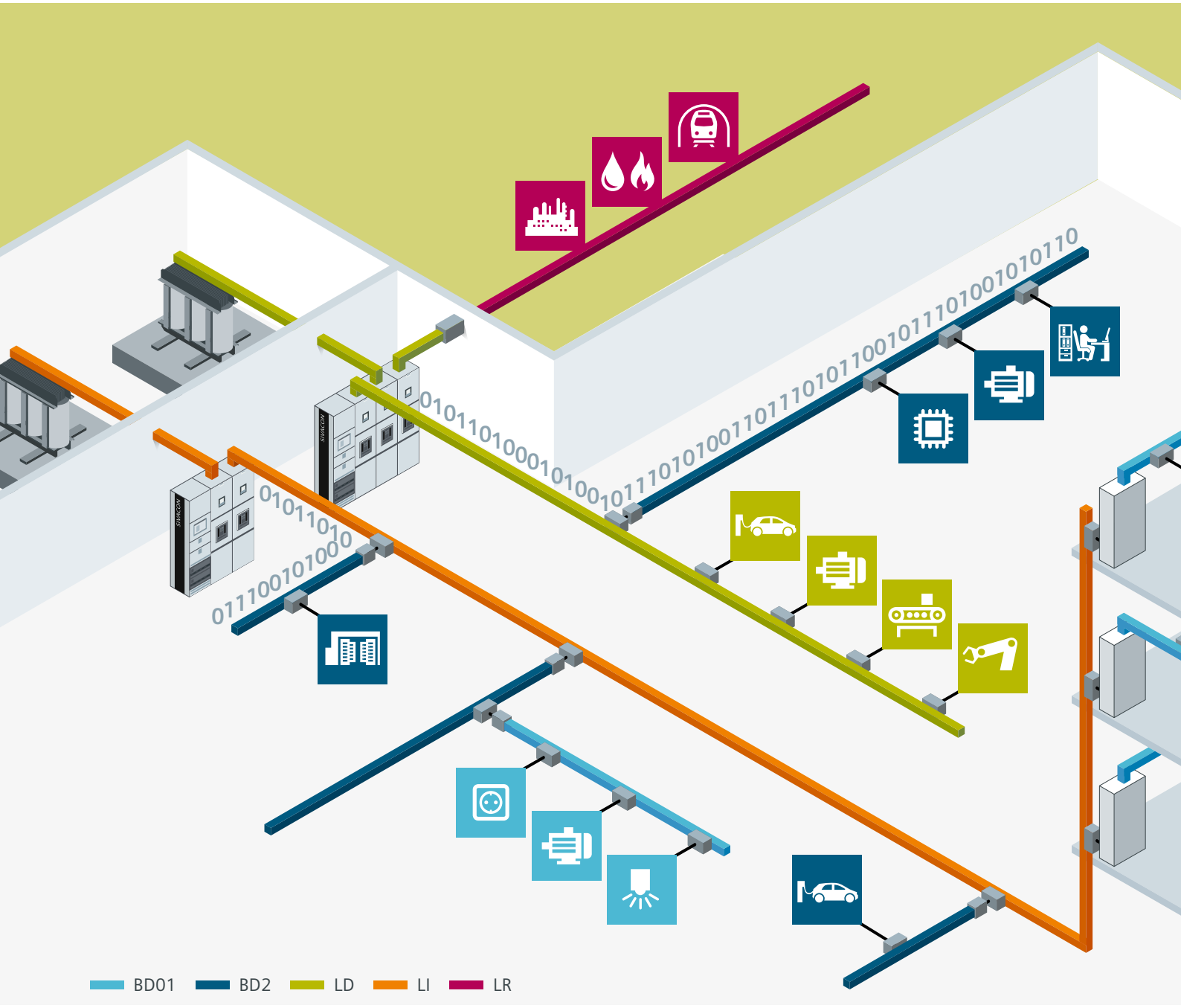
1) In accordance with EN 50110-1 (VDE 0105-1); please always observe national regulations/standards.

Decentralised power distribution with busbars



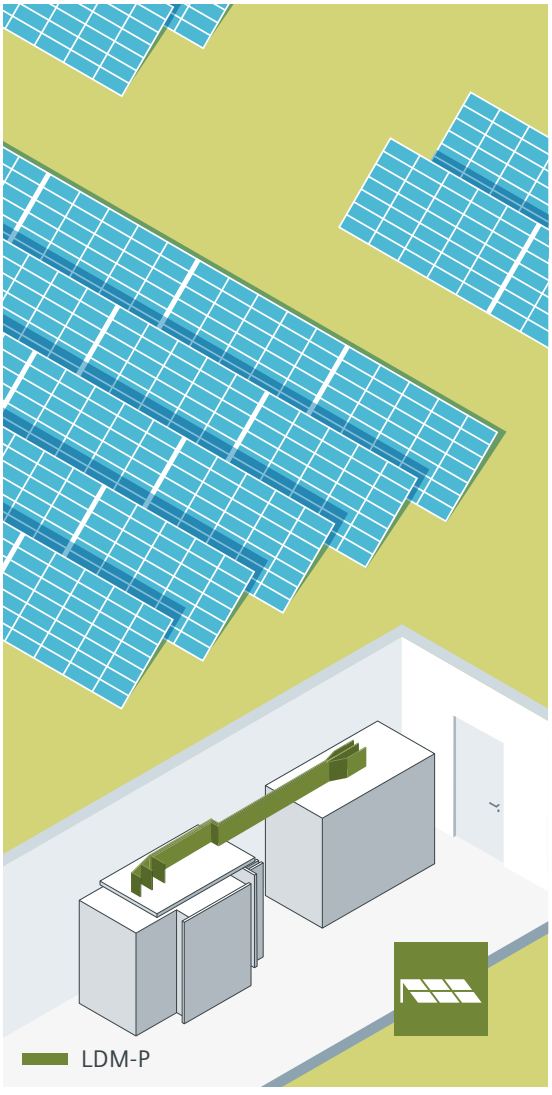
Centralised power distribution with cables

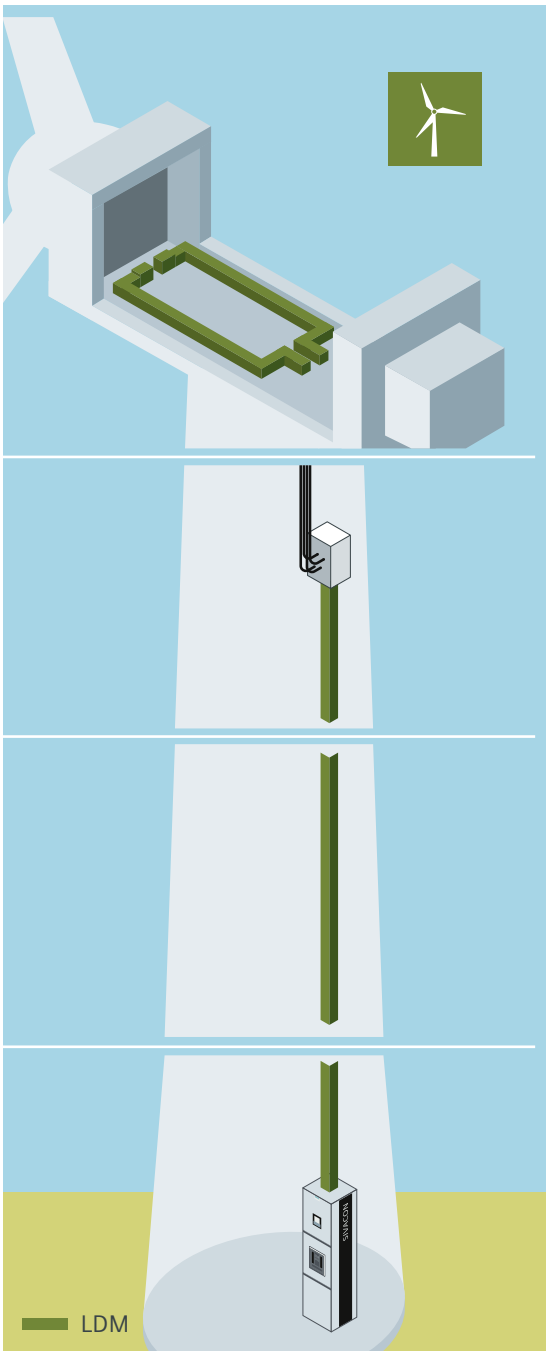




Interaction for flexible applications

SIVACON 8PS busbar trunking systems





As an intelligent solution, SIVACON 8PS busbar trunking systems support you with decisive advantages throughout the project and across the most different applications – from power supply for workshops through office or commercial buildings up to the connection of e-car charging stations.

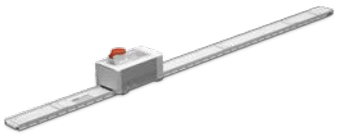
Rely on SIVACON 8PS for the planning, installation, operation, and extension of your power supply, and benefit from cost-efficient operation with high adaptability of the power run and the recording and transmission of energy data to overall systems or cloud-based IoT solutions.

Systems for all industries

SIVACON 8PS busbar trunking systems

System description
Typical application
Rated insulation voltage U_i
Rated operational voltage U_e
Degree of protection
Rated current I_{nA}
Rated peak withstand current I_{pk}
Rated short-time withstand current I_{cw} (1 s)
Number of conductors
Tap-off point
Tap-off unit
Data transmission
Connection technology
Conductor material
Housing material (trunking unit, feeding unit)

BD01 system



1) 3)

The flexible power supply in workshops and production facilities of craft, trade, and commercial enterprises

- Workshops and production
- Supermarkets
- Data centers
- High-rise buildings
- Exhibition halls
- Automotive industry
- Ship applications

400 V AC	
400 V AC	
IP54, IP55	
40 A to 160 A	
Up to 15.3 kA	
Up to 2.5 kA	
4 (PE = housing)	
Either 0.5 m or 1 m on one side	
Up to 63 A	
Data cable	
Connecting flanges with integrated expansion compensation	
Aluminium or copper	
Galvanised and painted sheet steel	

BD2 system

1) 3)

The universal solution for maximum power in the smallest space, above all in office buildings and industrial transfer lines

- Workshops and production
- Manufacturing industry
- Home improvement centers
- Data centers
- High-rise buildings
- Food industry
- Exhibition halls
- Hospitals
- Automotive industry
- Ship applications

690 V AC	
690 V AC	
IP52, IP55	
160 A to 1,250 A	
Up to 90 kA	
Up to 34 kA	
5	
Every 0.5 m on one side, offset on both sides every 0.25 m	
Up to 530 A	
Powerline, data cable	
With integrated expansion compensation, single-bolt terminal	
Aluminium or copper	
Galvanised and painted sheet steel	

LD system

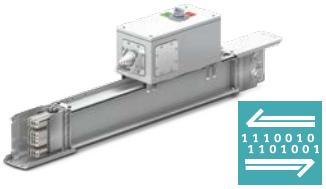
1) 3)

The long-time proven high-current busbar for industrial and special applications

- Automotive industry
- Manufacturing industry
- Food industry
- Exhibition halls
- Wind turbines
- Semiconductor production
- Ship applications

1,000 V AC	
1,000 V AC	
IP34, IP54	
1,100 A to 5,000 A	
Up to 286 kA	
Up to 116 kA	
4,5	
Every 1 m on one side	
Up to 1,250 A	
Powerline, data cable	
Single-bolt clamped connection with hook and bolt connection	
Aluminium or copper	
Galvanised and painted sheet steel	

data transmission with powerline technology

LDM system	LDM-P system	LI system	LR system
 2)		 1)	 1) 3) 5) 6) 7)
The individual busbar solution for safe and efficient power transmission in wind turbines	**The economic busbar solution for power transmission in secured areas**	**An integrated solution for safe and efficient power supply in the infrastructure – e.g., in multi-floor buildings – as well as in industrial applications**	**The reliable busbar for high protection in harsh ambient conditions, e.g., for outdoor networking of building sections, or for the supply of tunnels**
• Wind turbines	• Photovoltaic stations • Container stations	• Data centers • High-rise buildings • Manufacturing industry • Chemical industry • Airports • Exhibition halls • Hospitals • Home improvement centers • Shopping malls and supermarkets	• Chemical industry • Oil and gas • Tunnels and underground • Outdoor applications
1,000 V AC	1,000 V AC	1,000 V AC	1,000 V AC
1,000 V AC	1,000 V AC	1,000 V AC	1,000 V AC
IP21 with salt spray and condensation test	IP00	IP55, IP66[4)]	IP68
800 A to 8,200 A	1,800 A to 7,000 A	800 A to 6,300 A	400 A to 6,300 A
Up to 255 kA	105 A	Up to 330 kA	Up to 275 kA
Up to 116 kA	50 A	Up to 150 kA	Up to 125 kA
3 to 10 conductors per trunking unit (2 circuits possible per trunking unit)	3 to 9 conductors	4 to 6 conductors (incl. 200% N or add. Clean Earth)	3 and PEN or 3, N, and PE
–	–	Up to 3 per 3 m length (per side)	Every 1 m on one side
–	–	Up to 1,250 A	On request
–	–	Powerline, data cable	–
Separate single-bolt joint block with hook system	Single-bolt clamped connection with hook and bolt connection	Hook and bolt connection with shear-off nut	Bolt joint block
Aluminium	Aluminium	Aluminium or copper	Aluminium or copper
Galvanised sheet steel (optional coating in RAL colour)	–	Painted aluminium	Epoxy resin

Country-specific approvals:
1) Russia EAC
2) North America: conforming to UL6141

Marine classification societies:
3) DNV GL
4) IP66 for mere power transmission runs without tap-offs
5) SEISMIC Qualification Certificate (seismic test)
6) ATEX
7) Product Environmental Profile (PEP)

BD01 system

One size is available
with five current ratings

Safe, demand-oriented power supply

The BD01 system is designed for applications from 40 A to 160 A. It is employed in trade and industry enterprises to safely supply small consumers with power, or to realise the infeed of a lighting system. Planning is especially simple and it ensures a flexible power supply. In addition to the pre-wired tap-off units, which can also be individually equipped with components, numerous add-on devices such as protection devices or combinations with SCHUKO or CEE socket outlets are available. Tap-off units up to 63 A that can be plugged on/off while energised[1)] enable quick and easy modification or expansion of the power distribution.

Guided mounting and clear load assignment

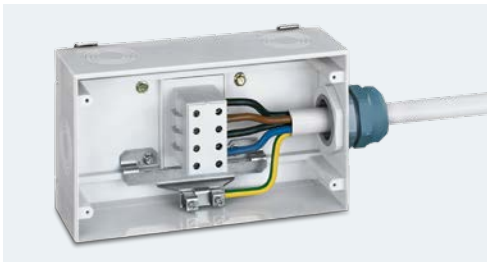
The reliable mechanical and electrical connection technology ensures error-free installation thanks to the asymmetry of the connection point of the BD01 system.

The codable tap-off points and units can be clearly assigned to the loads. The operating personnel are afforded a high degree of protection by the guided mounting of the tap-off units. The tap-off points are only automatically opened upon connection of the tap-off units. As soon as these units are removed, the tap-off points close automatically.

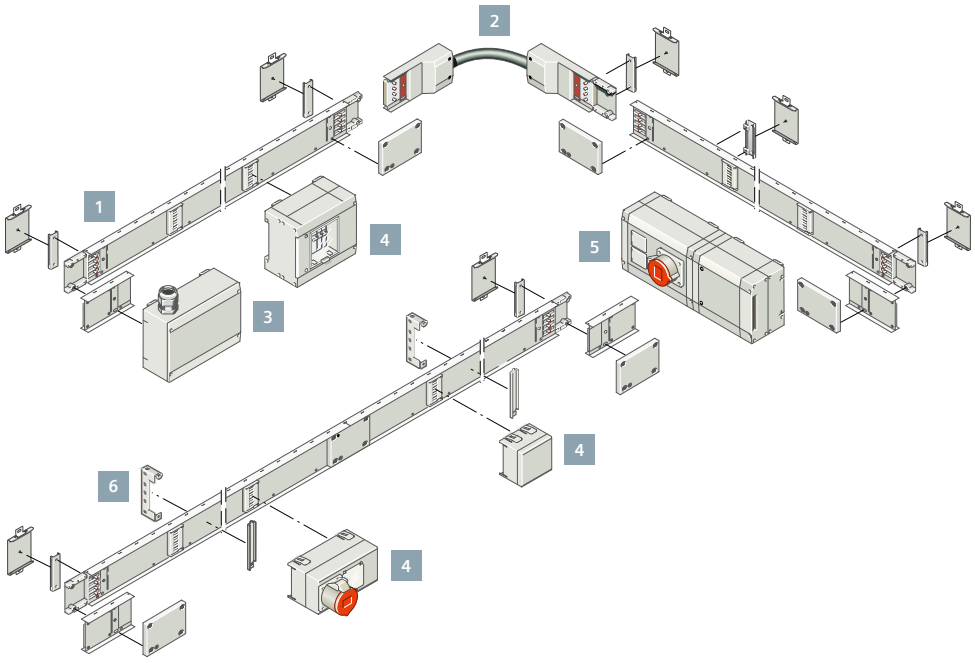
Simple planning of a modern network structure

The tap-off units can be plugged onto all system sizes. Feeding units can be used as incoming, end, or center feeding unit. These two facts make both planning and stock keeping easier. Numerous components are available, so that power supply can be flexibly adapted to all building structures using 3D junction units.

Ancillary equipment units for increased functionality



Feeding unit attachable to any connection point



1 Trunking unit
2 Junction unit
3 Feeding unit
4 Tap-off unit
5 Ancillary equipment unit
6 Suspension bracket

Technical data

Rated insulation voltage U_i	400 V AC
Rated operational voltage U_e	400 V AC
Degree of protection	IP54, IP55
Rated current I_{nA}	40 A to 160 A
Rated peak withstand current I_{pk}	Up to 15.3 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 2.5 kA
Number of conductors	4 (PE = housing)
Fire load	Max. 0.76 kWh/m
Fire load (per tap-off point)	–
Tap-off point	Either 0.5 m or 1 m on one side
Tap-off unit	Up to 63 A
Data transmission	Data cable
Connection technology	Connecting flanges with integrated expansion compensation
Conductor material	Aluminium or copper
Housing material	Galvanised and painted sheet steel

Highlights

- Finger-proof mounting by automatic opening and closing of the tap-off-point
- Easy configuration and handling by connecting flanges with integrated expansion compensation
- Reliable fire protection thanks to tested fire barrier
- Flexible adaptation to every building structure by means of 3D junction units
- Easy modification or expansion via plug-on/-off tap-off units
- Reliable mechanical and electrical connection technology for error-free installation thanks to the asymmetry of the connection point

1) In accordance with EN 50110-1 (VDE 0105-1); please always observe national regulations/standards.
Further assortment information is available in catalogue LV70. Download at **siemens.com/LV70** or **siemens.com/sivacon-8PS**.

BD2 system

Universal solution for maximum power in the smallest space

Safe operation and reliable fire protection

The BD2 system is particularly suited for applications from 160 A to 1,250 A with increased safety requirements. The tested fire barrier and functional endurance in case of fire ensure a high level of safety – and thus represent an optimum solution for large buildings and industrial applications, as well as for shipbuilding. The compact system not only stands out for its safe operating behaviour, but also for its minimum space requirements. It can also be used for the infeed of the smaller BD01 system.

Easy and quick installation with access protection

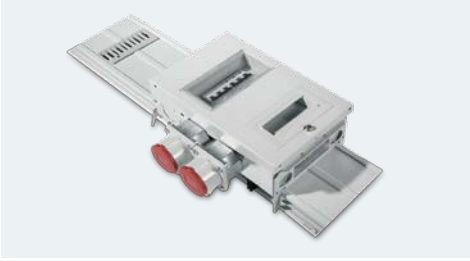
The anti-rotation feature and guided installation increase safety during the installation of the system. The joint block, which includes a single-bolt terminal, permits simple and quick installation with integrated expansion compensation.

Sealable tap-off points protect against unauthorised access. In addition, numerous components such as 3D junction units permit a flexible adaptation to the building structure in question.

Increased transparency of operation thanks to communication capability

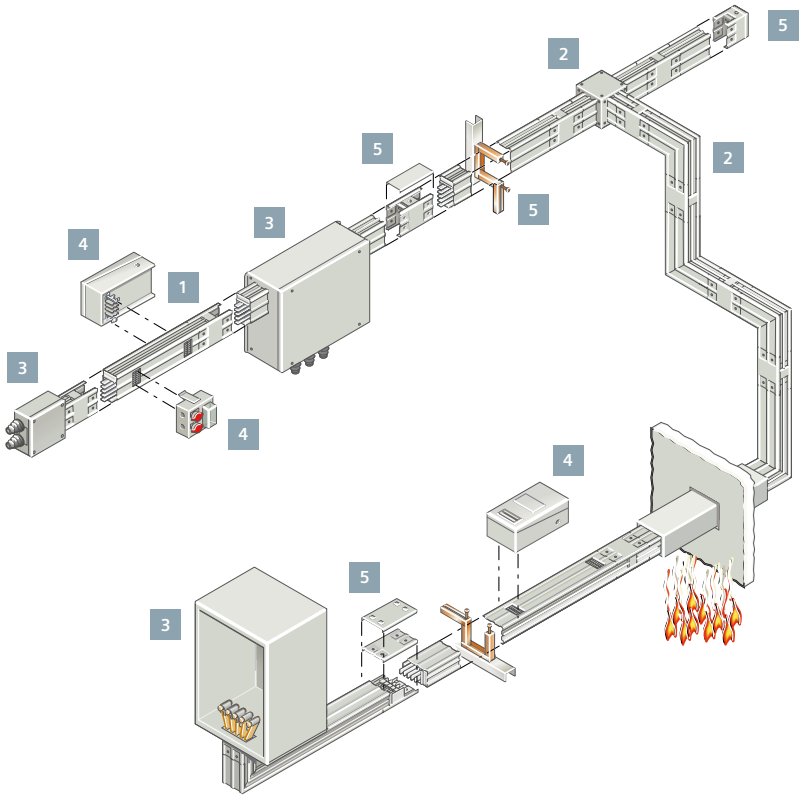
The communication-capable BD2 busbar trunking system with its load detection, remote monitoring and switching, as well as with its lighting control, increases system availability, ensuring greater transparency in your operation. Thanks to the powerline technology of the BD2 system, power and data are transmitted cost-efficiently via the current conductors.

Junction unit for optimum adaptation to building structures



Individually equipped tap-off units up to 530 A can be plugged on/off while energised[1)]

Tap-off unit with powerline technology



1 Trunking unit
2 Junction unit
3 Feeding unit
4 Tap-off unit
5 Additional equipment

Technical data

Rated insulation voltage U_i	690 V AC
Rated operational voltage U_e	690 V AC
Degree of protection	IP52, IP55
Rated current I_{nA}	160 A to 1,250 A
Rated peak withstand current I_{pk}	Up to 90 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 34 kA
Number of conductors	5
Fire load	Max. 2.0 kWh/m
Fire load (per tap-off point)	–
Tap-off point	Every 0.5 m on one side, offset on both sides every 0.25 m
Tap-off unit	Up to 530 A
Data transmission	Powerline, data cable
Connection technology	With integrated expansion compensation, single-bolt terminal
Conductor material	Aluminium or copper
Housing material	Galvanised and painted sheet steel

Highlights

- Flexibility by two sizes up to 1,250 A in seven current ratings with aluminium or copper conductors
- Protection against unauthorised access through sealable tap-off points
- Flexible adaptation to every building structure by means of 3D junction units up to 800 A
- High level of safety in the case of fire by tested fire barrier and functional endurance
- Low space requirements
- Cost-efficient data transmission with powerline technology

1) In accordance with EN 50110-1 (VDE 0105-1); please always observe national regulations/standards.
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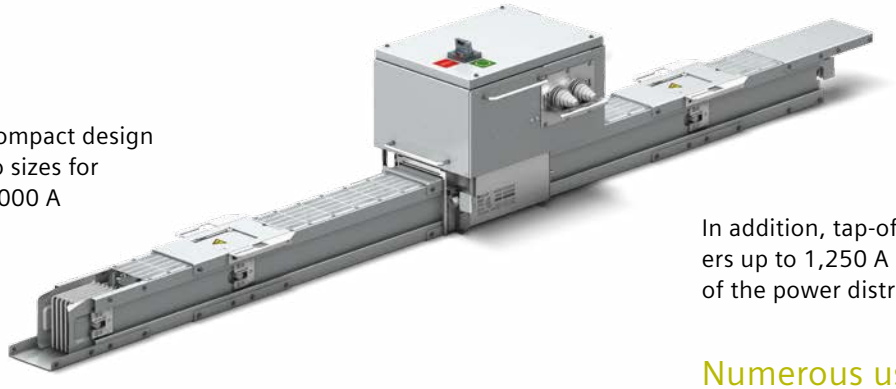
LD system



Robust and compact design with only two sizes for 1,100 A to 5,000 A

Made in Germany, the LD system has been in operation worldwide for more than 50 years, offering maximum reliability and user friendliness thanks to systematic further development.

Reliable power transmission for high power requirements

The LD system, easy and fast to install, covers the current range from 1,100 A to 5,000 A. It transmits and distributes the power between the transformer, main power distribution board and sub-distribution boards on production sites with high power requirements, for example, for welding lines in the automotive industry.

More safety at long distances

An internal PE conductor increases the cross-section of the protective conductor and ensures a low impedance in the event of faults. It facilitates longer busbar runs as well as an assured response of the switching device, also for long current paths.

In addition, tap-off units with circuit breakers up to 1,250 A increase the availability of the power distribution.

Numerous usage options due to high short-circuit rating

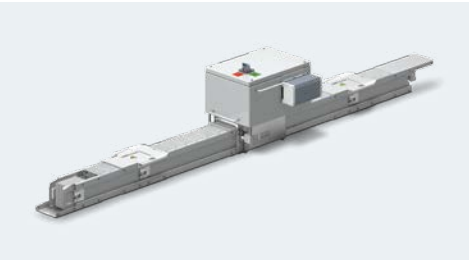
Power distribution can be reliably and simply planned thanks to the design verified connection to SIVACON S8 switchboards and safe connection to transformers.
The high short-circuit rating and compact design open up many fields of application. In the ventilated system (IP34), the epoxy coating of the conductors offers additional protection against water (sprinkler-suitable).

Future-proof solution

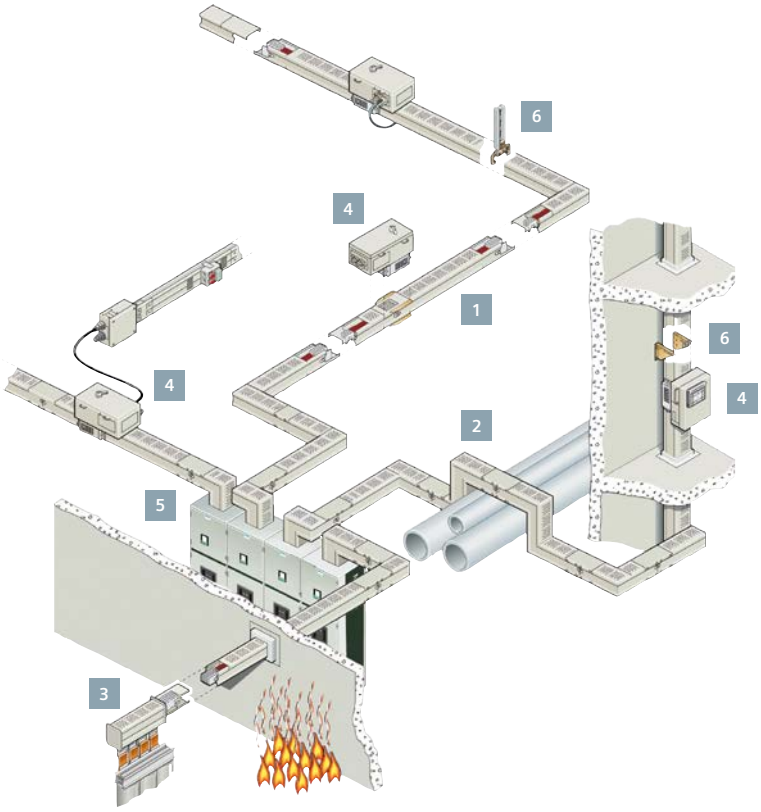
Energy data can be recorded with communication-capable measuring and switching devices via tap-off units. Thanks to powerline technology, power and data are transmitted cost-efficiently via the current conductors. This enables a modern energy management in accordance with ISO 50001 – meeting the latest demands for increased energy transparency.

Feeding units to supply current from the transformer to the LD system

Basic tap-off unit



LD system with powerline technology



1 Trunking unit
2 Junction unit
3 Feeding unit
4 Tap-off unit
5 Distribution board connection
6 Additional equipment

Technical data

Rated insulation voltage U_i	1,000 V AC
Rated operational voltage U_e	1,000 V AC
Degree of protection	IP34, IP54
Rated current I_{nA}	1,100 A to 5,000 A
Rated peak withstand current I_{pk}	Up to 286 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 116 kA
Number of conductors	4, 5
Fire load	Max. 11.99 kWh/m
Fire load (per tap-off point)	Max. 12.96 kWh
Tap-off point	Every 1 m on one side
Tap-off unit	Up to 1,250 A
Data transmission	Powerline, data cable
Connection technology	Single-bolt clamped connection with hook and bolt connection
Conductor material	Aluminium or copper
Housing material	Galvanised and painted sheet steel

Highlights

- Reliable and easy planning by means of safe connection to SIVACON S8 switchboards and transformers
- Appropriate water protection (sprinkler-suitable) and carbon dust tested
- High short-circuit rating
- Fire resistance duration of 120 minutes according to fire resistance class of ISO 834-1 corresponding to IEC 61439-6
- Cost-efficient infrastructure due to compact design
- Also optimal for high current demands; tap-off units up to 1,250 A
- Scalable tap-off units: Available as basic, premium, or empty unit version
- Cost-efficient data transmission with powerline technology

LDM system

Joint bracket for
easy connection of
trunking elements

Compact trunking element
with a length of up to 3,200 mm

Sustainable power distribution in wind turbines

Within the scope of sustainable power generation, wind energy is becoming more and more important. At the same time, manufacturers of wind turbines are exposed to a constantly increasing cost pressure: Their plants must transmit the generated power in a safe, reliable, and cost-efficient way. With the proven LD busbar trunking system, Siemens has more than a decade of experience in safe and reliable power transmission between the nacelle and the tower base of innumerable wind turbines.

Customer-specific solution

The LDM system, which has been especially conceived to meet the demands of wind turbines, is built upon this experience, adding a special, modular design. This makes it possible to offer wind turbine manufacturers a customer-specific solution for each task and at every point, in the nacelle, in the tower, or in the tower base.

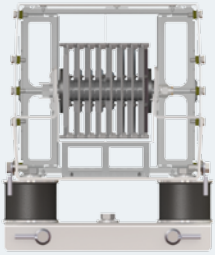
Efficient solution

The LDM busbar trunking system conforms to the latest standards IEC 61439-1/-6, and is therefore particularly reliable and safe. As a design verified system it offers – compared with cables – defined electrical and mechanical properties, it is halogen-free, and convinces by its low fire load. The system's compact design, low-loss connection technology, pre-assembled busbar elements, optimised use of material, as well as recyclability make planning, installation, commissioning, and removal especially cost-efficient.

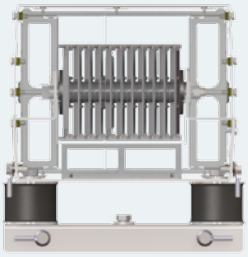
Segment connectors for easy connection
of the pre-assembled busbars in the wind tower

Feeding unit for cable connection
at the tower base and nacelle

Mono	
Voltage level	1,000 V
Current carrying capacity at 35° C	800 A – 4,100 A[1)]
Short-circuit rating	Scalable max. 116 kA
Degree of protection	IP21



Twin	
Voltage level	1,000 V
Current carrying capacity at 35° C	Rotor: 800 A – 1,000 A Stator: 800 A – 3,050 A
Short-circuit rating	Scalable max. 116 kA
Degree of protection	IP21



Technical data

Rated insulation voltage U_i	1,000 V AC
Rated operational voltage U_e	1,000 V AC
Degree of protection	IP21 with salty spray and condensation test
Rated current I_{nA}	800 A to 8,200 A
Rated peak withstand current I_{pk}	Up to 255 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 116 kA
Number of conductors	3 to 10 conductors per trunking unit (2 circuits possible per trunking unit)
Fire load	Depending on the application
Connection technology	Separate single-bolt joint block with hook system
Conductor material	Aluminium
Housing material	Galvanised sheet steel (optional coating in RAL colour)
Standards	IEC 61439-1/-6, North America: conforming to UL6141
Mounting position	Vertical, horizontal
Insulation	Air-insulated
Busbar coating	Epoxy

Highlights

- Modular system for individual customer requirements
- Pre-defined impedances and stipulated technical features
- Efficient installation
- Compact, maintenance-free busbar trunking systems

1) Up to 8,200 A for two parallel systems

LDM-P system

Cost-efficient and safe link between transformers and inverters in photovoltaic stations

Sustainable power distribution in solar applications

Photovoltaic stations (PV stations) are characterised by a high power volume in the smallest space. Furthermore, such stations must ensure a high availability and operational safety while at the same time keeping maintenance requirements as low as possible. And, not the least, the corresponding modules shall be produced in large quantities in a standardised way optimised for production. Especially for high currents, busbar trunking systems have prevailed as an efficient, safe, and standard-compliant alternative to classical cables in many areas of application.
With the LDM-P system, Siemens now also opens up the characteristic potentials of this technology for photovoltaic stations.

Equally, the use for further container solutions is possible, in which the busbar trunking system is mounted in a protected way.

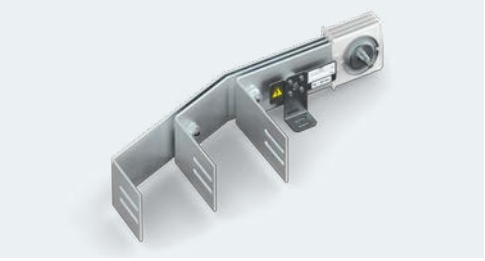
Proven solution, further developed

The LDM system – originally designed for wind turbines – was developed further for specific applications. One innovation of the LDM-P versions lies in the fact that this system, which was conceived for use in closed stations, works without housings. It is designed for current ratings up to 7,000 A.

As the connections between the busbar and the transformer on one side or the converter on the other side are not standardised, every LDM-P application is a customer-specific solution.

Advantages for efficient use

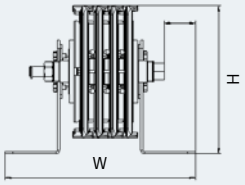
Three advantages predestine busbar trunking systems for use in photovoltaic stations: efficient power transmission at high currents, low fire load, and the high safety standards of a design verified low-voltage switchgear and controlgear assembly in accordance with IEC 61439. In addition, material costs for aluminium are below those for copper cables. The LDM-P busbar trunking system now offers a corresponding solution especially for OEMs in the solar industry.



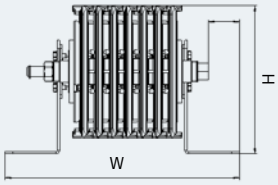
Connection piece, on the transformer side

Straight length between inverter and transformer

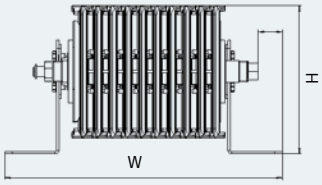
System		LDM-P13	LDM-P14	LDM-P16	LDM-P24	LDM-P36
Regulations and standards		IEC/EN 61439-1/-6				
Rated operational voltage U_e		1,000 V				
Rated current I_{nc}	**@35°** **@50°**	1,800 A 1,600 A	2,500 A 2,300 A	2,900 A 2,700 A	4,200 A 3,900 A	7,000 A 6,600 A
PE conductor		no				
Degree of protection		IP00				
Housing		Without housing (protection of persons must be ensured by measures on site)				
Short-circuit rating Rated short-time withstand current 0.1 s	 **I_{cw}** **I_{pk}**	 50 kA 105 kA				
Ambient temperature		min. -5° C/max. 45° C				
Cross-section per phase		698 mm²	1,014 mm²	1,203 mm²	2,028 mm²	3,609 mm²
Weight		~8.5 kg/m	~11.5 kg/m	~13 kg/m	~20 kg/m	~33 kg/m
Dimensions (incl. supports)	**W** **H**	244 mm 191 mm			301 mm	358 mm
Drawing (schematic sketch)		Size 1			Size 2	Size 3



Size 1



Size 2



Size 3

Technical data

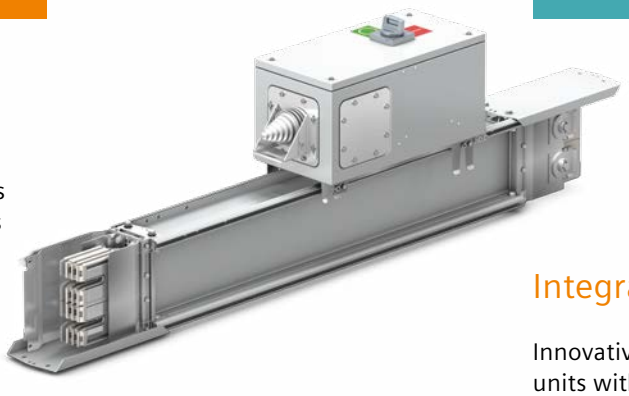
Rated insulation voltage U_i	1,000 V AC
Rated operational voltage U_e	1,000 V AC
Degree of protection	IP00
Rated current I_{nA}	1,800 A to 7,000 A
Rated peak withstand current I_{pk}	105 kA
Rated short-time withstand current I_{cw} (1 s)	50 kA
Number of conductors	3 to 9 conductors
Fire load	Depending on the application
Connection technology	Single-bolt clamped connection with hook and bolt connection
Conductor material	Aluminium
Standards	IEC 61439-1/-6
Mounting position	Vertical, horizontal
Insulation	Air-insulated
Busbar coating	Epoxy

Highlights

- Compact system for photovoltaic and container stations
- Individual connections on the inverter and transformer side
- Maintenance-free busbar trunking systems
- Efficient power transmission

LI system

Transmission of high currents with low voltage drop thanks to the sandwich design



Reliable in operation

The LI system is particularly suited for applications from 800 A to 6,300 A in which large amounts of power have to be flexibly transmitted over long distances, in infrastructure – for example, in multi-floor buildings – as well as in industrial applications. Thanks to the sandwich design, the system allows power transmission with a low voltage drop. The LI system can run at full load at high temperatures[1)] without derating.

Safe for personnel and equipment

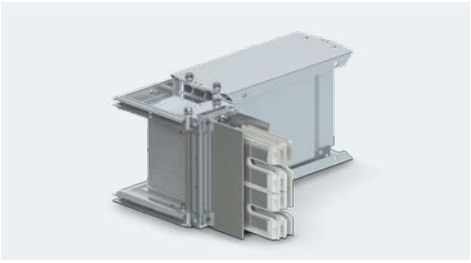
The LI system offers a large range of design verified trunking and tap-off units in accordance with the latest standards IEC 61439-1/-6, enabling a high level of safety for personnel and equipment. Furthermore, the fire barrier of the LI system has been tested for fire resistance classes EI 90 and EI 120 in accordance with EN 1366-3 to meet European Standard building requirements.

Integrated and future-proof

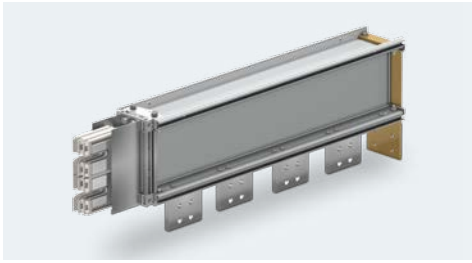
Innovative technical features such as tap-off units with communication-capable measuring and switching devices enable modern energy management in accordance with ISO 50001 – meeting the latest demands for increased energy efficiency. Thanks to the powerline technology of the LI system, power and data are transmitted cost-efficiently via the current conductors.

Efficient and flexible in planning and operation

The compact design of the LI system facilitates its integration into narrow buildings in order to achieve a cost-efficient infrastructure. Different conductor configurations, modular tap-off units, and junction units enable a flexible design of your power supply. Furthermore, tap-off units up to 1,250 A, which are connectable to energised runs[2)], support easy modifications/ adaptations during operation.

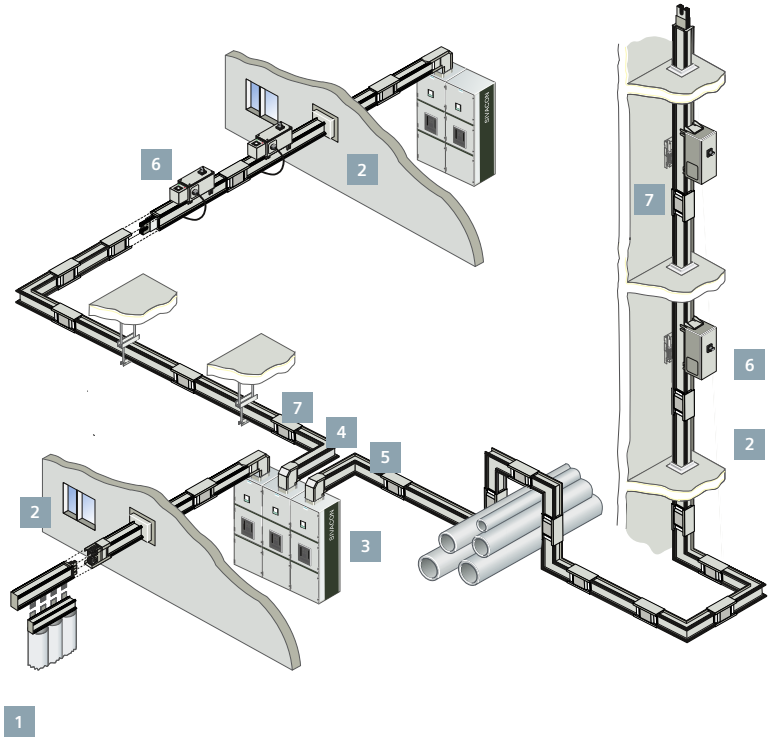


Easy adaptation to building structures by means of junction units



Various transformer connection pieces for safe power transmission

Tap-off unit with powerline technology



1 Transformer connection/ feeding unit
2 Fire barrier
3 Connection element for SIVACON S8
4 Straight trunking unit
5 Junction unit
6 Tap-off unit
7 Additional equipment

Technical data

Rated insulation voltage U_i	1,000 V AC
Rated operational voltage U_e	1,000 V AC
Degree of protection	IP55, IP66[3)]
Rated current I_{nA}	800 A to 6,300 A
Rated peak withstand current I_{pk}	Up to 330 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 150 kA
Number of conductors	4 to 6 conductors (incl. 200% N or add. Clean Earth)
Fire load	2.13 – 15.54 kWh/m
Fire load (per tap-off point)	0.98 kWh
Tap-off point	Up to 3 per 3 m length (per side)
Tap-off unit	Up to 1,250 A
Data transmission	Powerline, data cable
Connection technology	Hook and bolt connection with shear-off nut
Conductor material	Aluminium or copper
Housing material	Painted aluminium

Highlights

- High degree of protection IP55, IP66 for power transmission
- Fire barriers tested in accordance with European Standard EN 1366-3
- Fire resistance of 180 min in accordance with IEC 60331
- Cost-efficient infrastructure through compact sandwich design
- Reliable installation through hook and bolt connection
- Cost-efficient data transmission with powerline technology

1) System-specific sizes of the LI system can run at full load up to 40 °C in the 24-h mean without derating
2) In accordance with EN 50110-1 (VDE 0105-1); please always observe national regulations/standards
3) IP66 for mere power transmission runs without tap-offs

LR system

Available with copper
or aluminium conductors

For the most adverse ambient conditions

Thanks to its housing made of epoxy cast resin with a high degree of protection IP68 and high short-circuit rating, the LR system provides reliable power transmission even under adverse ambient conditions.

It is impervious to environmental factors such as air humidity and corrosive or salty atmospheres.

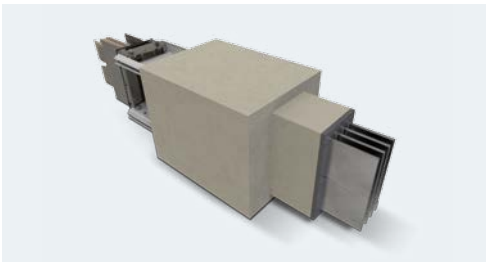
Flexible power transmission for both indoor and outdoor applications

The robust system can be laid flat, edgewise, vertically, or horizontally as required in applications from 400 A to 6,300 A.

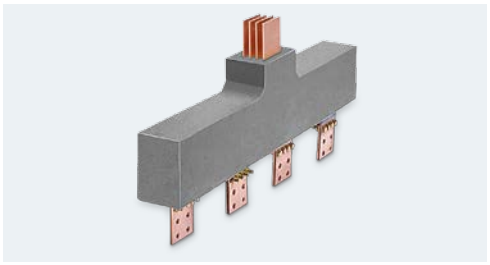
With only minimum space requirements, it can be optimally adjusted to the construction conditions with angles, connectors, and T-pieces for change of direction. The LR system is also perfectly suited for outdoor applications.

Consistency of the busbar trunking systems with high currents

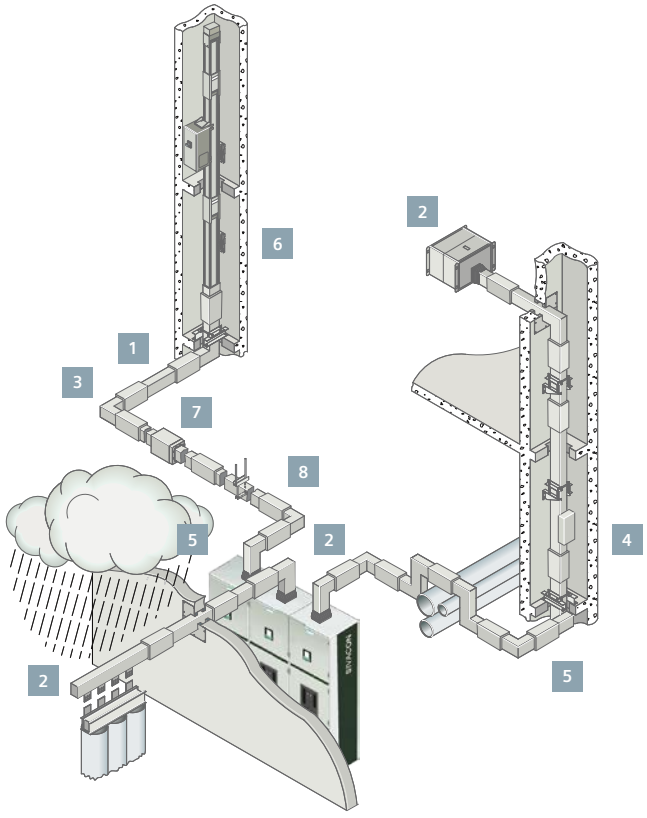
The LR system can be easily and quickly fitted by means of the bolt joint block. It is consistent and can be easily combined with the LI and LD systems for indoor applications.



Safe connection to the LI or LD system
via adapters



Numerous transformer connections
for safe power transmission



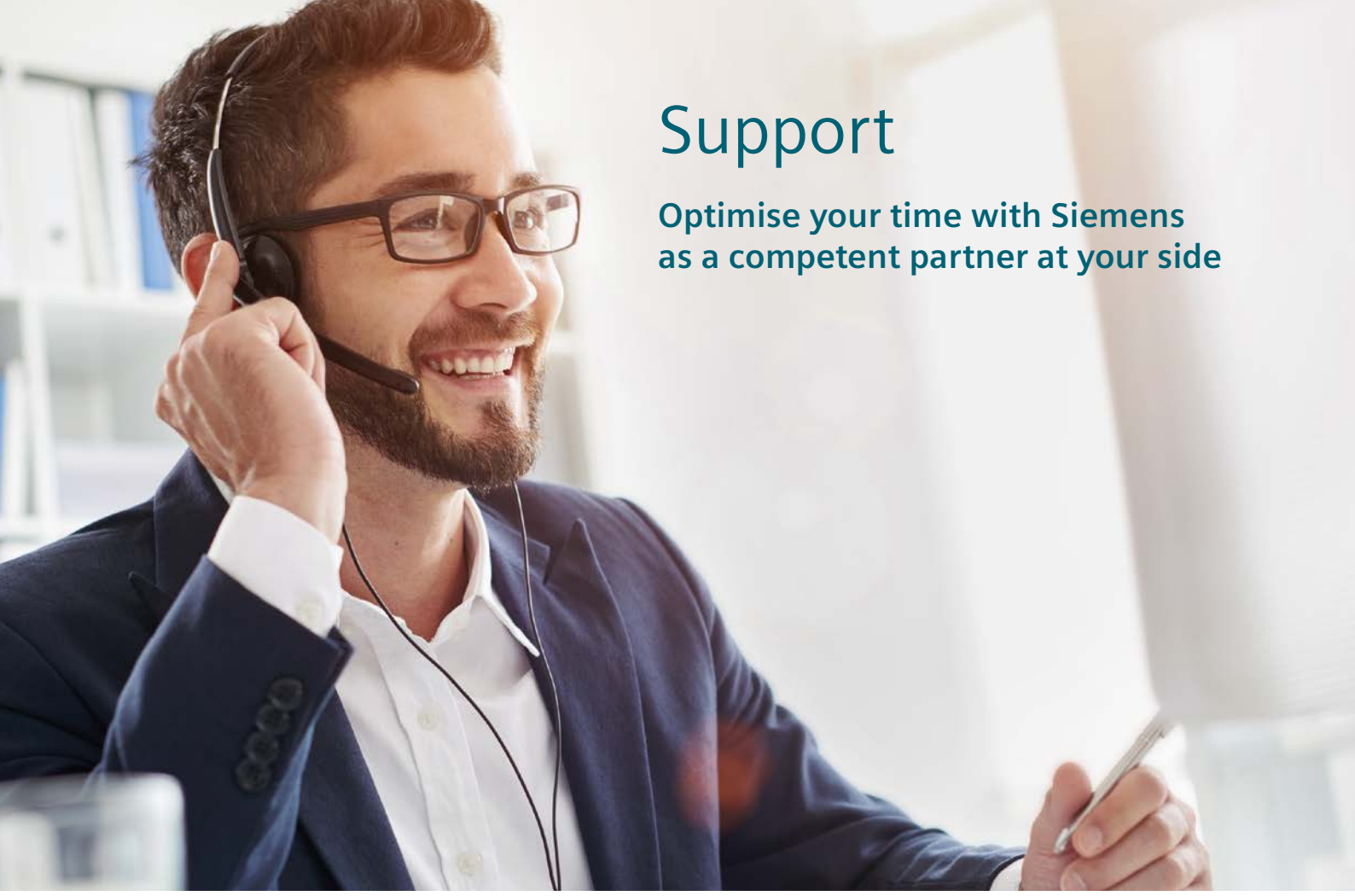
1 Straight trunking element
2 Feeding element
3 Junction element
4 Tap-off unit
5 Additional equipment
6 Adapter to the LI system
7 Expansion compensation
8 Encapsulated joint element

Technical data

Rated insulation voltage U_i	1,000 V AC
Rated operational voltage U_e	1,000 V AC
Degree of protection	IP68
Rated current I_{nA}	400 A to 6,300 A
Rated peak withstand current I_{pk}	Up to 275 kA
Rated short-time withstand current I_{cw} (1 s)	Up to 125 kA
Number of conductors	3 and PEN or 3, N, and PE
Fire load	Max. 87 kWh/m
Tap-off point	Every 1 m on one side
Tap-off unit	On request
Data transmission	–
Connection technology	Bolt joint block
Conductor material	Aluminium or copper
Housing material	Epoxy resin

Highlights

- Suitable for outdoor applications thanks to high degree of protection IP68
- Strong resistance to chemical substances and high mechanical rigidity due to the use of epoxy cast-resin housing
- High flexibility and consistency thanks to integrated connection to the LI and LD systems
- Fire barriers tested in accordance with European Standard EN 1366-3
- Fire resistance of 180 min in accordance with IEC 60331
- Flexible power transmission with low space requirements thanks to various junction elements



Support

Optimise your time with Siemens as a competent partner at your side

SIVACON 8PS busbar trunking systems on the Internet

Our website offers you a broad range of information as well as helpful tools for the SIVACON 8PS busbar trunking systems. Just click and have a look!

siemens.com/sivacon-8PS

Comfortable planning: with the SIMARIS tools

Planning electric power distribution for industrial plants, infrastructure, and buildings is becoming more and more complex. The innovative SIMARIS software tools support electrical planners effectively during the planning process.

SIMARIS design
Dimensioning electric grids, and automatically selecting components

SIMARIS project
Determining space requirements and budget for power distribution systems

SIMARIS sketch
Designing routing diagrams in 3D for the BD01, BD2, LD, LI, and LR busbar trunking systems

siemens.com/simaris

Efficiency from planning to maintenance by using BIM data

Within the scope of digitalisation, BIM offers great benefits already in the planning process. Easy exchange of all relevant building data from planning to facility management ensures quality and saves both time and money. For this reason, BIM also plays an increasingly important part in electrical planning.

siemens.com/bim-eplanning

Technical documentation on the Internet

You will find an overview of the latest technical documentation available for SIVACON 8PS busbar trunking systems on our website (updated daily) at

siemens.com/lowvoltage/product-support

Tender specification texts

We offer a comprehensive range of specification texts to support you at

siemens.com/specifications

Build on a sound basis

Our courses offer you solid foundations or your business success. Expert lecturers provide you with the necessary theoretical and practical information relating to our SIVACON 8PS busbar trunking systems.

siemens.com/lowvoltage/training

Reliable on-site support

Our local experts are there for you around the world, helping you to develop solutions for your energy supply, and providing you with specific expertise on project management and financial services.

Technical experts from TIP Consultant Support offer support, especially for planning and conception of electric power distribution systems.

siemens.com/tip-cs

Easy installation and documentation thanks to the BusbarCheck app

An installation app supports easy and high-quality installation and documentation during the installation and commissioning of the SIVACON 8PS busbar trunking systems.

http://sie.ag/busbar-itunes
http://sie.ag/busbar-android

Catalogue LV70

Assortment information on the BD01 and BD2 systems is available in the catalogue LV70. Download at

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