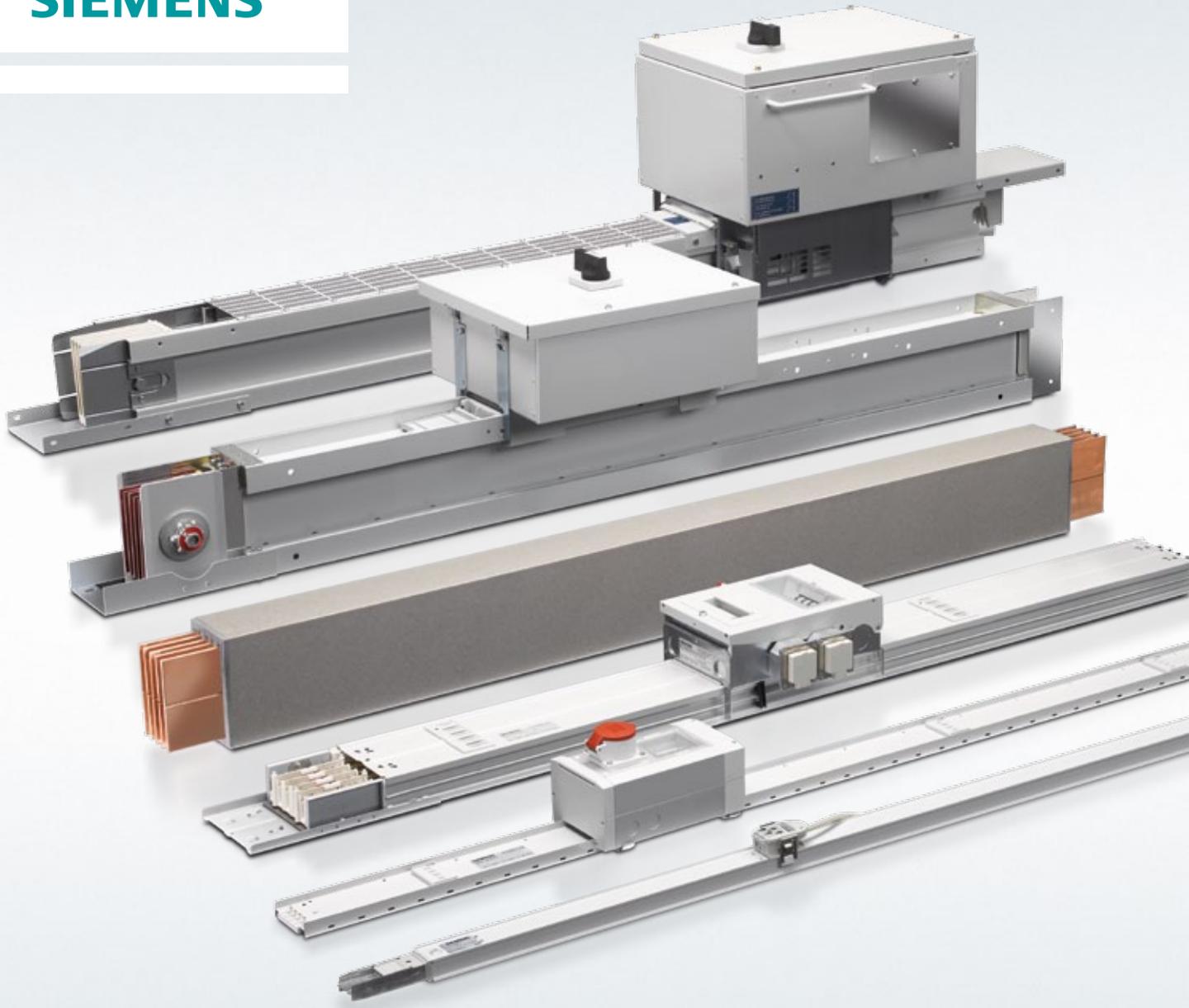


**SIEMENS**



SIVACON

# For safe power flows

Busbar trunking systems SIVACON 8PS

Answers for infrastructure.



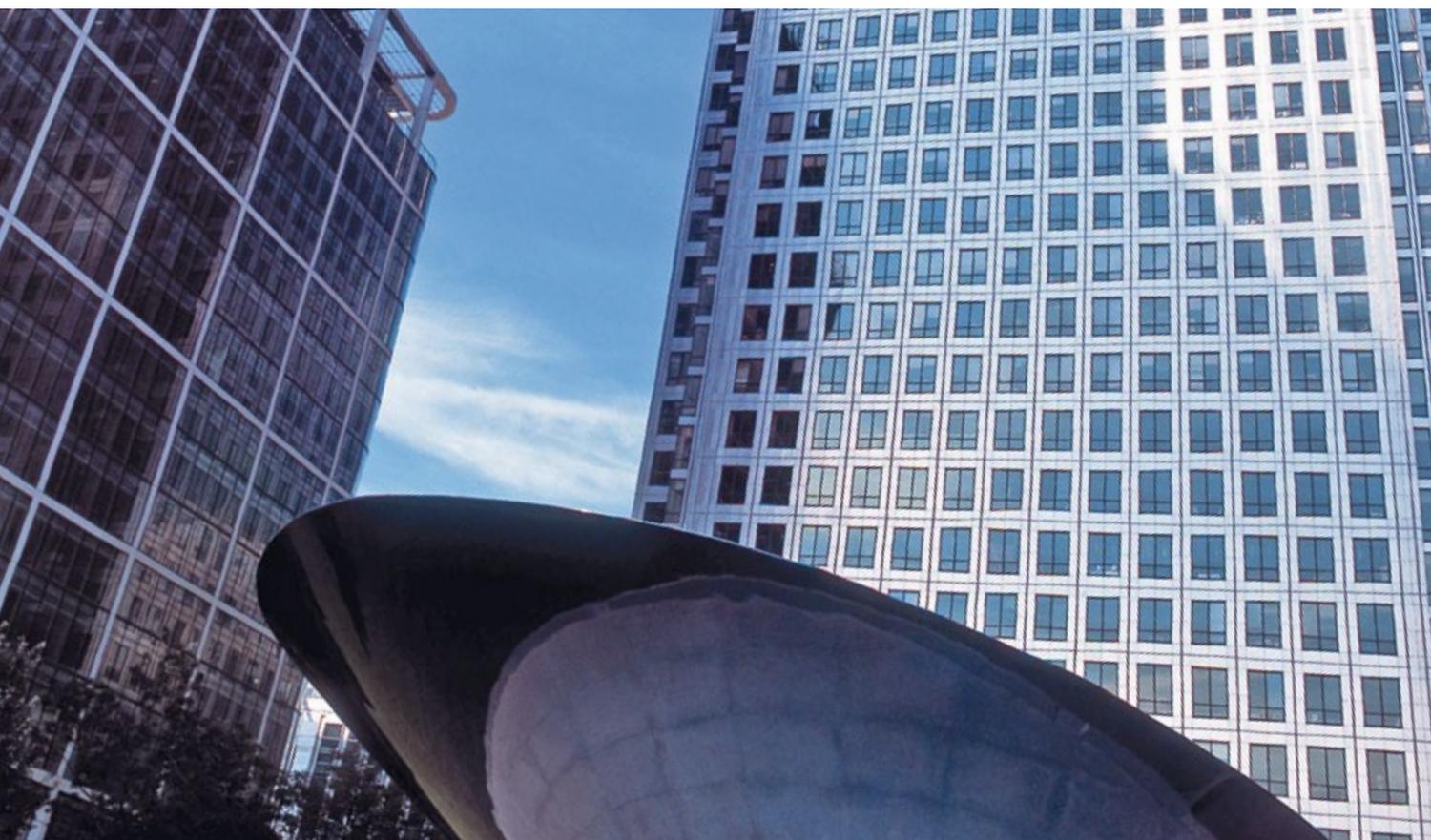
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# Power transportation and distribution

In industrial plants as well as in the infrastructure a reliable supply with electrical energy is a basic necessity. Safety, flexibility, easy cost-effective planning and rapid installation are some of the important attributes needed to meet the complex requirements of power distribution. The consistent, high-performance SIVACON 8PS busbar trunking systems ensure that power is transported and distributed reliably at all times.



## We offer systematic support

High power volumes, countless consumers, maximum availability around the clock? No matter how turbulent your power distribution requirements – our integrated low-voltage power distribution products and systems support you, competently mastering your power requirements.

You will benefit from the modularity and intelligence of the components over the complete utilisation period and thus keep a tight control of your operating costs while maximising system availability.

# Busbar trunking systems SIVACON 8PS

## Living up to complex requirements at all times

A total of six different busbar trunking systems offer everything required for modern power transportation and distribution matched to your individual requirements. With the busbar trunking systems SIVACON 8PS, you will not only benefit from a transparent and flexible solution for controlling the increasingly complex area of building management, but also considerably improve the efficiency of industrial applications by ensuring a safe and reliable power supply.

## Reliable and safe power transportation

The busbar trunking systems SIVACON 8PS offer optimum safety thanks to type-tested low-voltage switchboard and controlgear assemblies (TTA) in accordance to IEC/EN 60439-1 and -2. The high short-circuit strength and low fire load due to the sheet-steel enclosure of the systems increase safety for people and buildings.

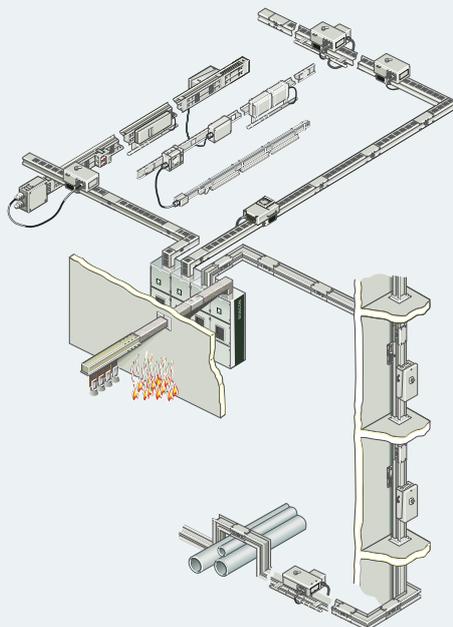
## Easy planning and flexible modification of power distribution

High calculation expenditures, laborious installations and high power losses are a thing of the past. With busbar trunking systems SIVACON 8PS, you can easily plan and quickly assemble the power distribution within building complexes and in outdoor areas. Modifications and expansions are possible at any time, if the use of space changes. In contrast to conventional cable installations, with which the current can only be taped off at the pre-defined points, current tap-offs can be individually varied with the busbar trunking systems SIVACON 8PS thanks to flexibly deployable tap-off units.

## Highlights

- Full range from 25 A to 6,300 A for industrial applications and infrastructure
- Safety through type-tested low-voltage switchboard and controlgear assemblies (TTA) in accordance to IEC/EN 60439-1 and -2
- Easy planning and quick assembly of the power distribution system

Read out the QR code with your QR code reader!



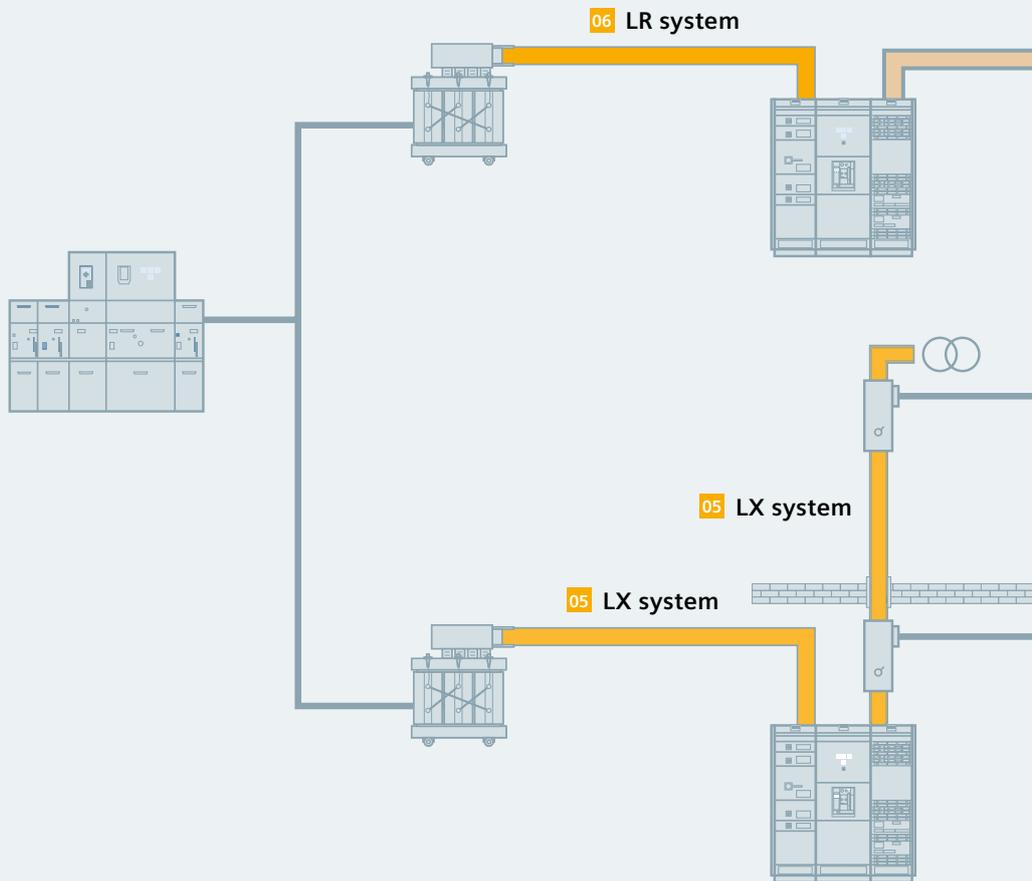
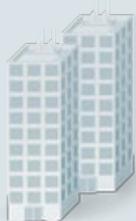
The consistent busbar trunking systems SIVACON 8PS from 25 A to 6,300 A offer flexible options for all low voltage power distribution requirements. This applies to power transportation, for application between transformer, primary distribution system and the sub systems as well as in power distribution to the end consumer.

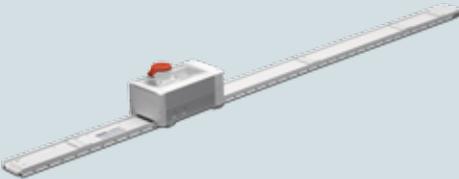
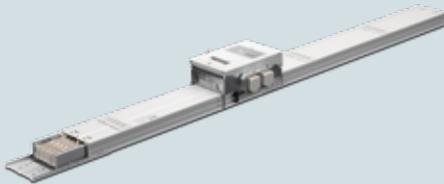
# The systems at a glance

## Industry

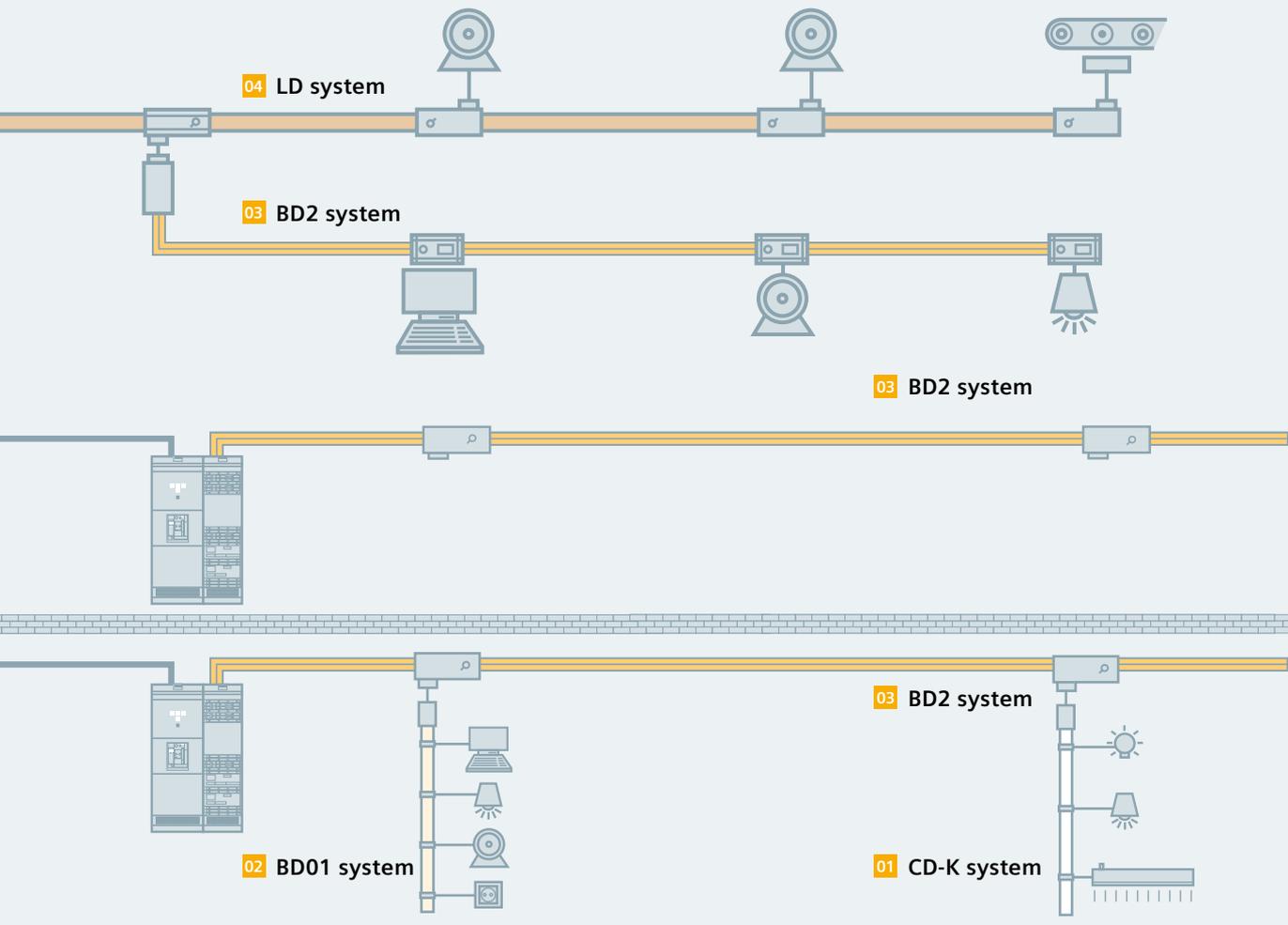


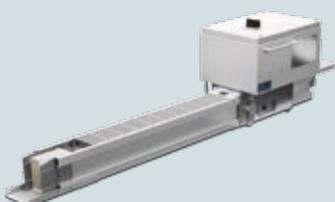
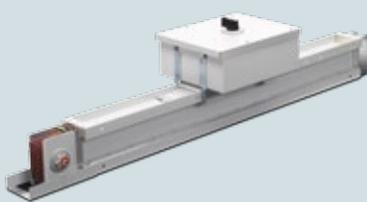
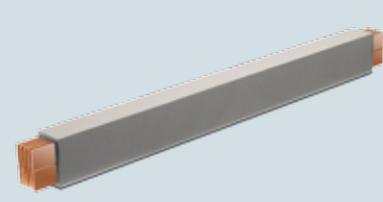
## Infrastructure



01 CD-K system	02 BD01 system	03 BD2 system
		
25 A, 30 A and 40 A	40 A to 160 A	160 A to 1,250 A
400 V U <sub>e</sub> max.	400 V U <sub>e</sub> max.	690 V U <sub>e</sub> max.
Power supply of lighting systems and small consumers in shopping malls, logistic warehouses and any type of building	Power supply for small consumers in workshops and lighting systems	Power transportation and distribution in office buildings and transfer lines in all industrial application areas

Ethernet      BACnet      KNX      DALI



04 LD system	05 LX system	06 LR system
		
1,100 A to 5,000 A	800 A to 6,300 A	400 A to 6,150 A
1,000 V U <sub>e</sub> max.	690 V U <sub>e</sub> max.	1,000 V U <sub>e</sub> max.
Power distribution and transportation in exhibition halls, in the automotive industry, heavy industry and on ships	Power distribution and transportation of high currents in large buildings, broadcasting stations, data centres as well as in chip and semiconductor production applications	Transportation of large power volumes in harsh ambient conditions, for the supply of tunnels or networking of building sections, and for power transportation in the chemical industry

# CD-K system

## Highlights

- Optimum utilisation of the busbar run by emergency and mains power supply in a single system
- Energy saving through communication-capable busbar trunking systems with KNX/DALI
- Quick and easy modification or expansion thanks to outgoing connectors that can be plugged in when energised

### When attractive design is the order of the day

The CD-K system is ideally suited for the efficient power supply of lighting systems and small consumers of 25 A up to 40 A. Thanks to its appealing design, it is applied wherever good looks are essential, e.g. in department stores, supermarkets or furniture stores. Thanks to its splash water protection with a high degree of protection IP55, the CD-K system is also suitable for environments such as greenhouses.

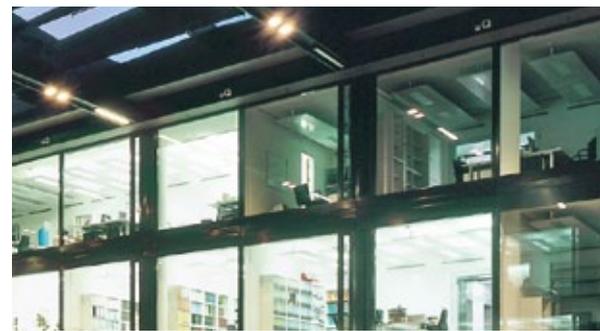
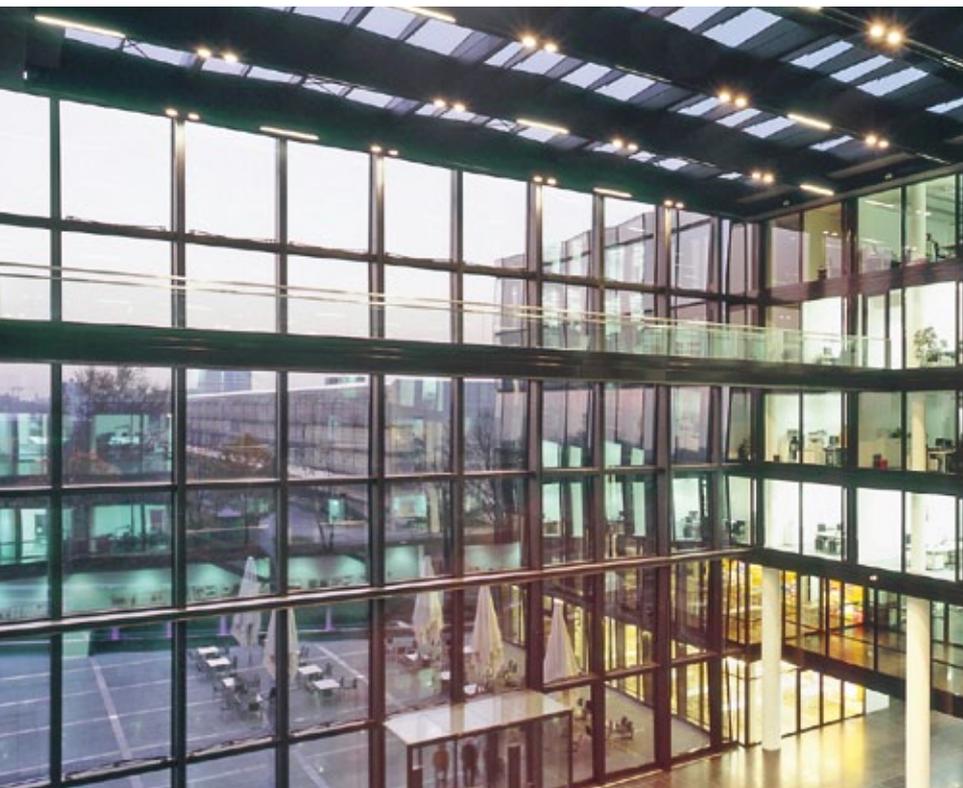
### Easy planning and quick, fault-free assembly

The CD-K system is characterised by maximum flexibility and its particular ease of mounting and disassembly in case of changed installation conditions. The plug-in quick connections are equipped to considerably facilitate installation. Since emergency and main power supply are combined in a single system, the busbar run is optimally utilised.

3- and 5-pole tap-off plugs of the same width make configuration and the use of AC and DC consumers easier. Changes or expansions to the power distribution are possible quickly and easily without downtime using tap-off plugs that are pluggable when energised.<sup>1)</sup>

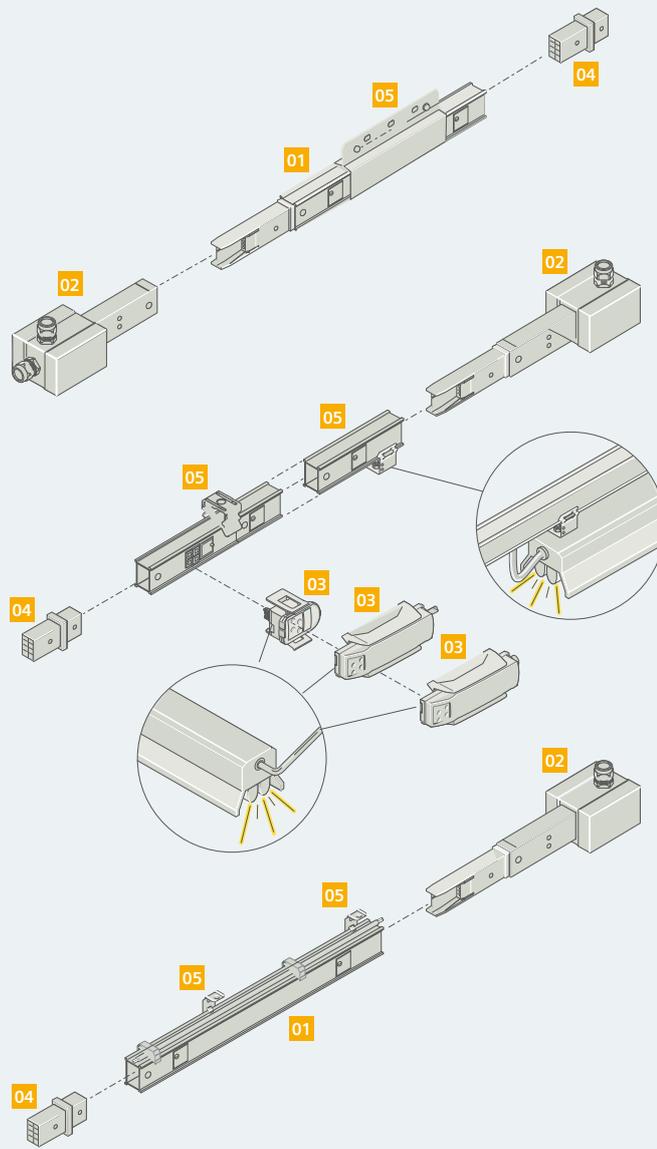
### Integration into building management systems

The CD-K busbar trunking system can be connected to the GAMMA building management systems in order to realise energy-efficient solutions in lighting control.



A flexible, energy-efficient lighting control system can be implemented in multi-purpose buildings with the communication-capable CD-K system and the link to GAMMA building control.





- 01 Trunking unit
- 02 Feeder unit
- 03 Tap-off unit
- 04 End flange
- 05 Accessories



The CD-K busbar trunking system is made of sheet steel and is therefore only slightly susceptible to electromagnetic interference.



Lighting systems from all major manufacturers can be easily suspended from any point along the trunking units.



Plug-in connections permit the guided assembly of the trunking units.

#### Technical specifications

Rated insulation voltage $U_i$	400 V AC	Fire load	Max. 0.48 kWh/m
Rated operational voltage $U_e$	400 V AC	Fire load (per tap-off point)	–
Degree of protection	IP54, IP55	Tap-off point	Every 0.5 m, 1 m on one or both sides
Rated current $I_e$	25 A, 30 A and 40 A	Tap-off unit	Up to 16 A
Rated peak withstand current $I_{pk}$	Up to 3.6 kA	Joining system	Plug-in quick connection
Rated short-time withstand current $I_{cw}$ (0.1 s)	Up to 2.4 kA	Conductor material	Insulated Cu conductors
Number of conductors	2, 3, 4, 4+2, 4+4 (PE = enclosure)	Enclosure material	Galvanised and painted sheet steel

# BD01 system

## Highlights

- Finger-safe connection through guaranteed opening and shutting of the tap-off point
- Easy configuration and handling through connection flanges with built-in expansion compensation
- Reliable protection in the case of fire due to tested fire barrier

## 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 realise the infeed of the CD-K 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 protective devices or combinations with SCHUKO or CEE socket outlets are available.

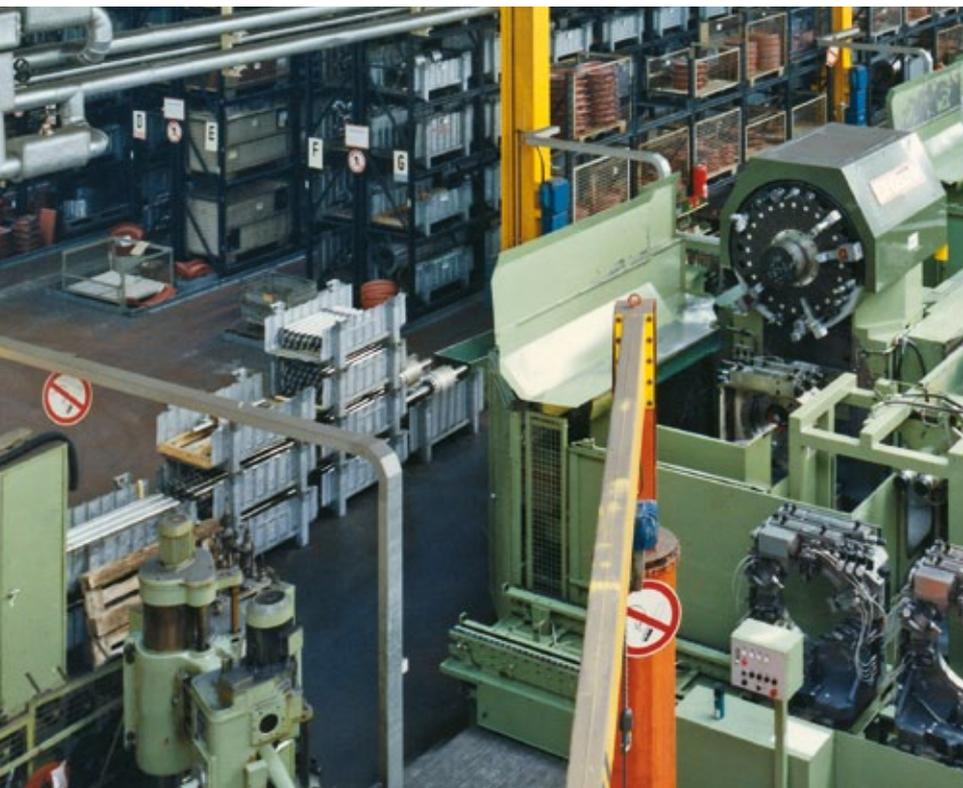
## Guided mounting and clear consumer assignment

The reliable mechanical and electrical connection technology guarantees faultless 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 consumers.

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. Feeder units can be used as incoming, end or centre feeder unit. These two facts make both planning and stock keeping easier. Numerous components are available and so the power supply can be flexibly adapted to all building structures using 3D junction units.

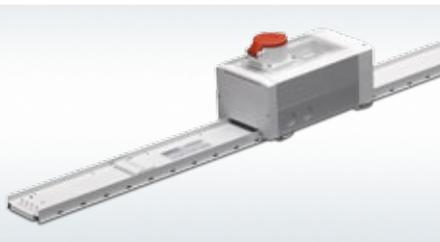
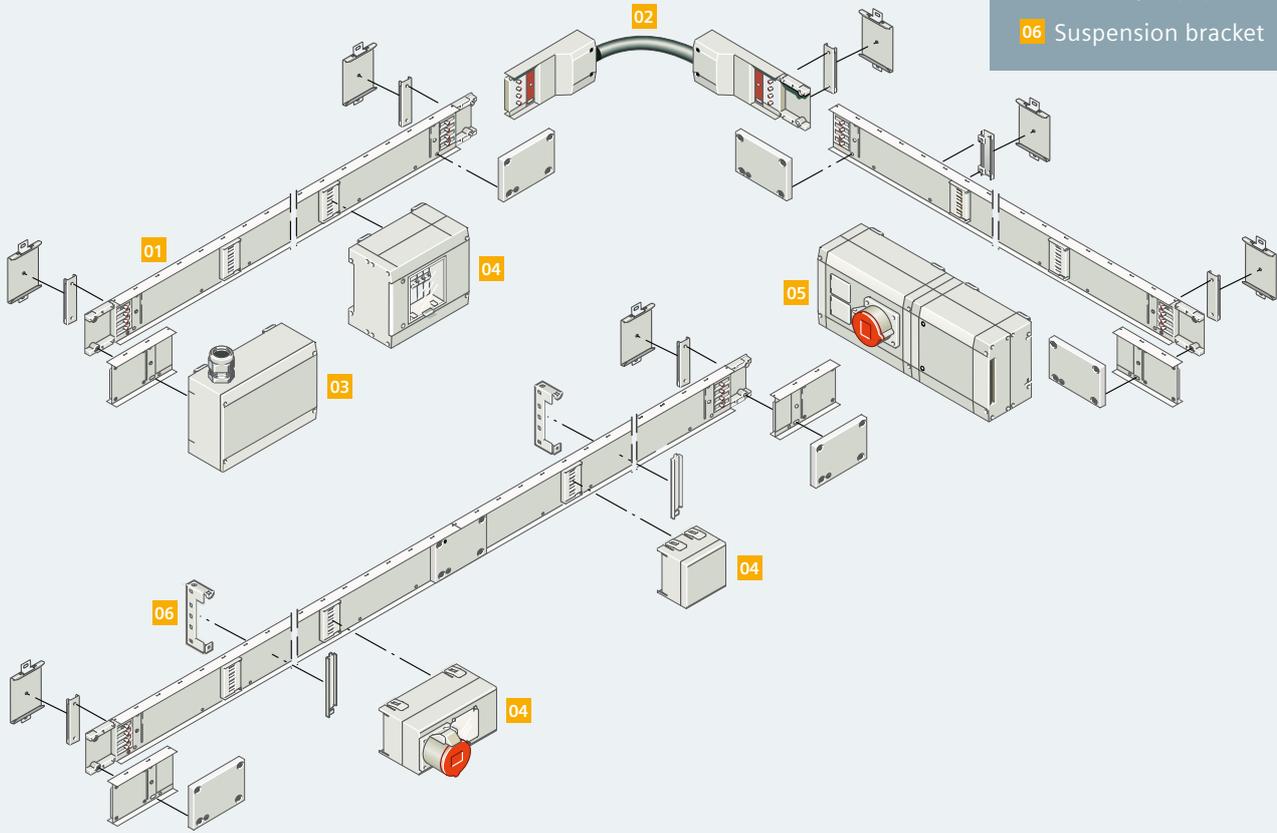


The power distribution in production facilities must be matched precisely to structural factors.

The BD01 system offers the necessary flexibility, including for when consumer loads change at a later time. It allows quick and simple modification or expansion through tap-off units up to 63 A that can be plugged in with the system live<sup>1)</sup>.



- 01 Busbar trunking unit
- 02 Junction unit
- 03 Feeder unit
- 04 Tap-off unit
- 05 Ancillary equipment unit
- 06 Suspension bracket



The BD01 busbar trunking system is available up to 160 A in one size with five current intensities.



The infeed can be fitted to any connection point.



In addition to tap-off and feeder units, ancillary equipment units provide space for additional installations.

#### Technical specifications

Rated insulation voltage $U_i$	400 V AC	Fire load	Max. 0.76 kWh/m
Rated operational voltage $U_e$	400 V AC	Fire load (per tap-off point)	–
Degree of protection	IP54, IP55	Tap-off point	Either 0.5 m or 1 m on one side
Rated current $I_e$	40 A to 160 A	Tap-off unit	Up to 63 A
Rated peak withstand current $I_{pk}$	Up to 15.3 kA	Joining system	Connection flange with integrated expansion compensation
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 2.5 kA	Conductor material	Insulated Al or Cu conductors
Number of conductors	4 (PE = enclosure)	Enclosure material	Galvanised and painted sheet steel

# BD2 system

## Highlights

- Flexibility thanks to two sizes with seven currents up to 1,250 A, in aluminium or copper
- Protection against unauthorised access by sealable tap-off points
- 3-D junction unit up to 800 A allows flexible adjustment to all building structures

### 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 degree of safety – and thus represent an optimum solution for large buildings, industrial applications as well as for shipbuilding. The compact system not only stands out for its safe operational behaviour, but also for its minimum space requirements. It can also be used for the infeed of the smaller CD-K and BD01 systems.

### Easy and quick mounting with access protection

The anti-rotation feature and guided mounting increase safety during the installation of the system. The clamp terminal, which includes a plug-in

terminal for up to 400 A and a single-bolt terminal for > 400 A, permits simple and quick assembly with built-in expansion compensation. Sealable tap-off points protect against unauthorised access. In addition, numerous components for 3-D junction units permit a flexible adaptation to the building structure in question.

### Increased transparency of operation thanks to communication capability

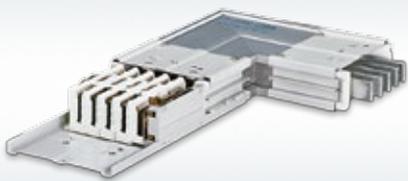
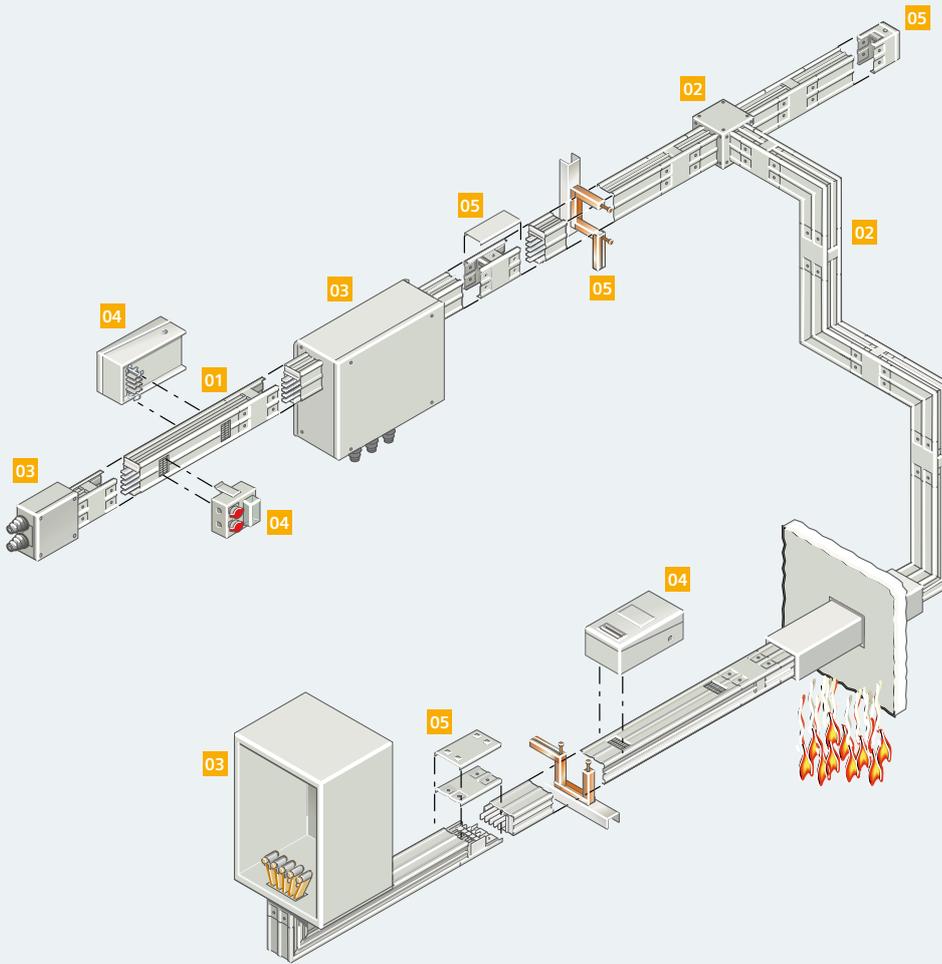
The communication-capable BD2 busbar trunking system with its load detection, remote monitoring and switching and its lighting control increases system availability and ensures greater transparency in your operation.



Reliable protection in case of fire thanks to a tested fire barrier and safe operating behaviour are important for the power supply of office complexes.



- 01 Trunking unit
- 02 Junction unit
- 03 Feeder unit
- 04 Tap-off unit
- 05 Accessories



Components for change of direction facilitate an optimum adjustability to the building structures.



The communication capable BD2 system with load value detection, remote monitoring and switching increases transparency of operation.



Individually equipped tap-off units up to 530 A rated current can be displaced while energised<sup>1)</sup>.

#### Technical specifications

Rated insulation voltage $U_i$	690 V AC	Fire load	Max. 2.0 kWh/m
Rated operational voltage $U_e$	690 V AC	Fire load (per tap-off point)	–
Degree of protection	IP52, IP54, IP55	Tap-off point	Every 0.5 m on one side, offset on both sides every 0.25 m
Rated current $I_e$	160 A to 1,250 A	Tap-off unit	Up to 530 A
Rated peak withstand current $I_{pk}$	Up to 90 kA	Joining system	With built-in expansion compensation, plug-in terminal up to 400 A, single-bolt terminal over 400 A
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 34 kA	Conductor material	Al or Cu conductors
Number of conductors	5	Enclosure material	Galvanised and painted sheet steel

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

# LD system

## Highlights

- Reliable and easy planning due to type-tested connection to SIVACON switchboards and transformers
- Adequate protection against water (sprinkler-suitable)
- High availability through tap-off units with circuit breakers up to 1,250 A

### Reliable power transportation for high power requirements

The LD system offering rapid and safe mounting covers the current range from 1,100 A to 5,000 A. It transports and distributes the power between the transformer, main power distribution board and sub-distribution boards on production sites with high power requirements, e.g. for welding lines in the automotive industry.

### More safety at long distances

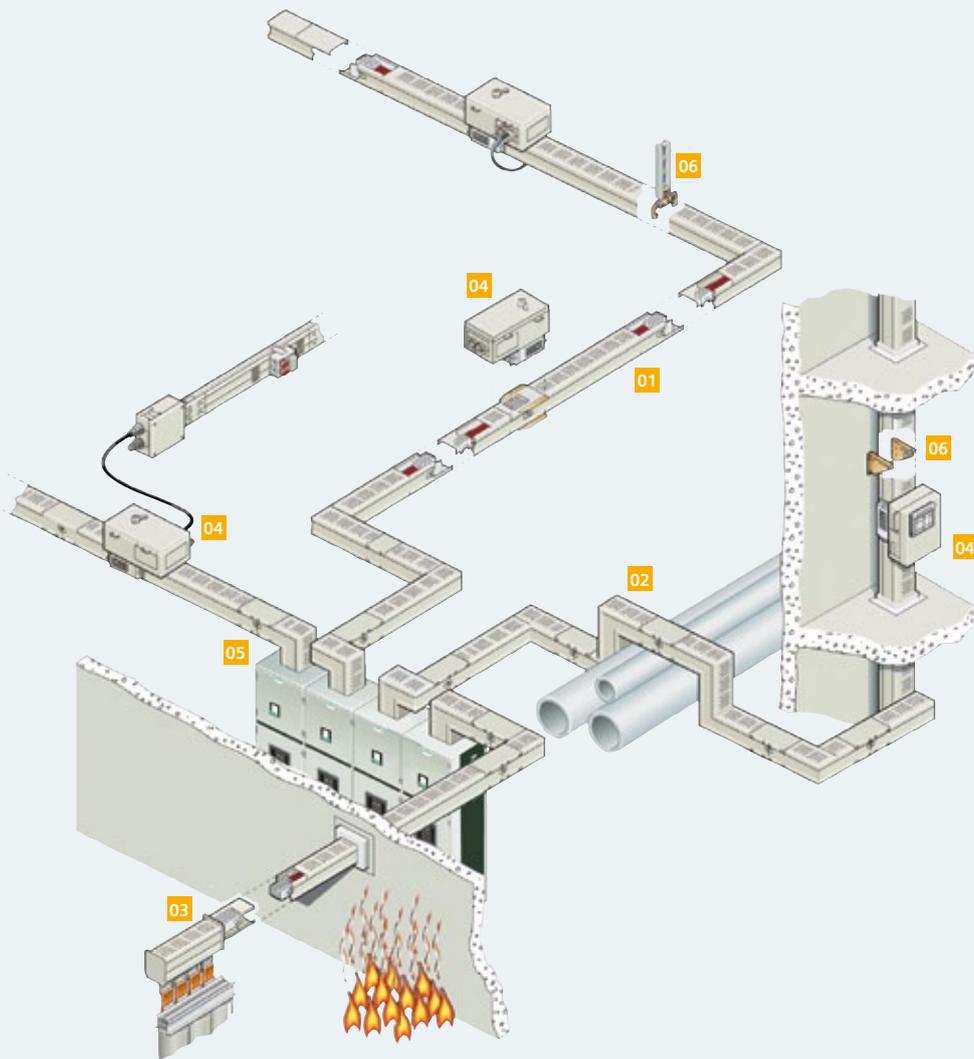
A separate PE busbar increases the conductor cross-section and ensures a low impedance in the event of faults. It facilitates longer busbar runs as well as an assured response of the protective device, also with long current paths. In addition, tap-off units with circuit breakers up to 1,250 A increase the availability of power distribution.

### The high short-circuit strength means numerous usage options

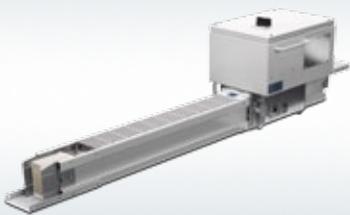
Power distribution can be reliably and simply planned thanks to the type-tested connection to SIVACON switchboard and transformers. The high short-circuit strength and compact design open up many fields of application. In the ventilated system (IP34) the epoxy coating of the conductors offer additional protection against water (sprinkler-suitable).

The high power requirement of production lines is provided decentrally with the LD system. The communication capability of the LD system allows operating transparency for recording consumption and for remote switching and monitoring.





- 01 Trunking unit
- 02 Junction unit
- 03 Feeder unit
- 04 Tap-off unit
- 05 Flanged end unit
- 06 Mounting



The LD system is characterised by a robust and compact design with only two sizes for 1,100 A to 5,000 A.



Current is supplied from the transformer to the LD busbar trunking system via feeder units.



Components for change of direction allow the power supply to be adapted to building structures.

#### Technical specifications

Rated insulation voltage $U_i$	1,000 V AC	Fire load	Max. 8.83 kWh/m
Rated operational voltage $U_e$	1,000 V AC	Fire load (per tap-off point)	Max. 10.8 kWh
Degree of protection	IP34, IP54	Tap-off point	Every 1 m, on one side
Rated current $I_e$	1,100 A to 5,000 A	Tap-off unit	Up to 1,250 A
Rated peak withstand current $I_{pk}$	Up to 286 kA	Joining system	Single-bolt terminal connection with hook/bolt technology
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 116 kA	Conductor material	Al or Cu conductor (galvanised conductor surfaces), epoxy coating of conductors
Number of conductors	4, 5	Enclosure material	Painted sheet steel

# LX system

## Highlights

- Transportation of high currents with low voltage drop through sandwich design
- Low fire load and high corrosion resistance through aluminium enclosure
- High availability through junction boxes with circuit breakers up to 1,250 A

### Distributing large amounts of power over long distances

The LX system is particularly suited for applications from 800 A to 6,300 A in which large amounts of power have to be flexibly transported over long distances, for example in multi-story buildings. Thanks to its compact sandwich design with low impedance and current carrying capacity regardless of the mounting position, the system performs this function safely and, above all, cost-efficiently.

### Reinforced for operation in harsh environments

With a high degree of protection of up to IP55, the system can also be used in heavily contaminated or damp environments. The aluminium enclosure gives rise to a low fire load and high corrosion resistance.

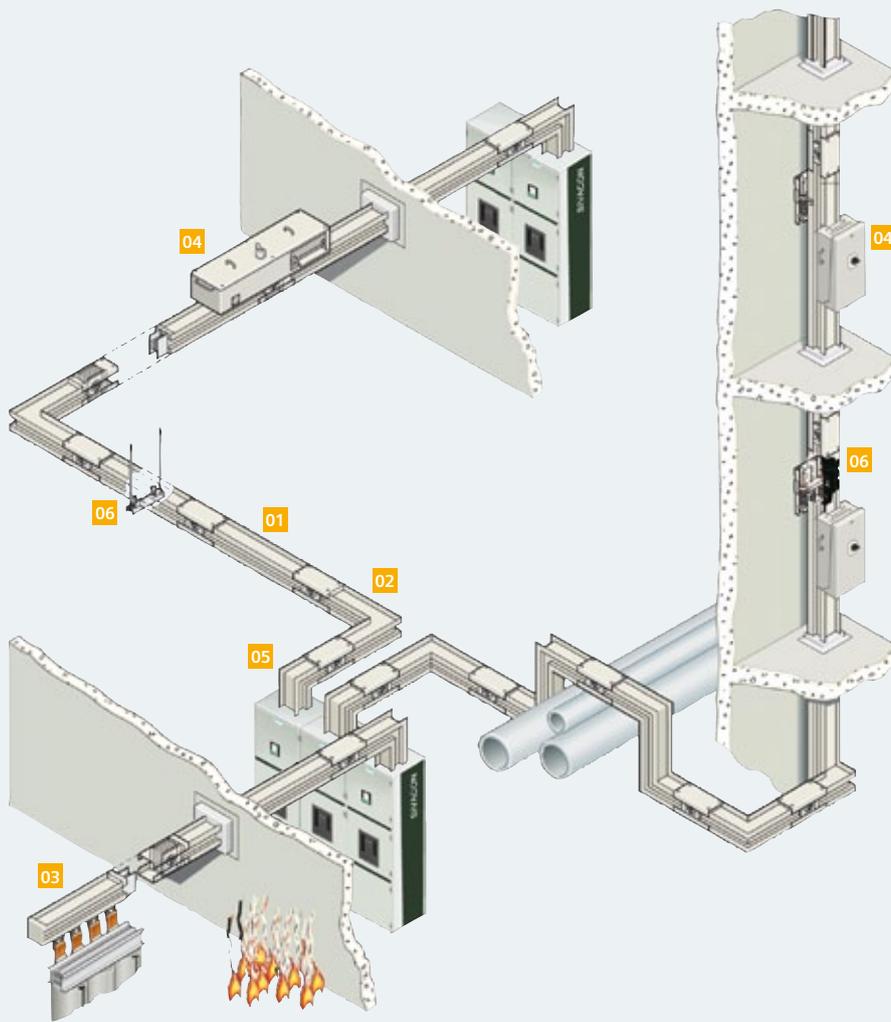
Furthermore, the LX system also demonstrates its strength with sensitive consumers thanks to its conductor configuration with double N conductors and clean earth.

### High level of safety in power distribution

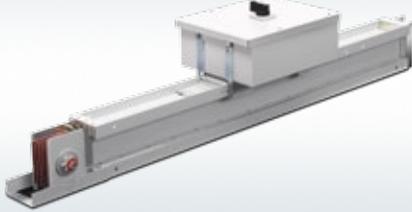
The type-tested connections to SIVACON S4 and SIVACON S8 power distribution boards offer a high degree of reliability and ensure optimum system protection.



With the LX system, large amounts of power can be transported over long distances and in an extremely small space in large building complexes. A corresponding power distribution requires functional integrity for emergency power as well as flexible current tap-offs in the normal power supply network.



- 01 Trunking unit
- 02 Junction unit
- 03 Feeder unit
- 04 Tap-off unit
- 05 Flanged end unit
- 06 Mounting



Thanks to its sandwich design, the LX system is characterised by low voltage drop when transporting high currents.



Optimum adaptation to building structures is no problem thanks to the various components of the busbar trunking system.



For safe power transportation, a multitude of transformer connections are available.

#### Technical specifications

Rated insulation voltage $U_i$	1,000 V AC	Fire load	Max. 16.6 kWh/m
Rated operational voltage $U_e$	690 V AC	Fire load (per tap-off point)	Max. 2.9 kWh
Degree of protection	IP54, IP55 <sup>1)</sup>	Tap-off point	Every 0.5 m on both sides
Rated current $I_e$	800 A to 6,300 A <sup>1)</sup>	Tap-off unit or junction box	Up to 1,250 A
Rated peak withstand current $I_{pk}$	Up to 255 kA	Joining system	Bolt-type terminal block with shearing nut
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 150 kA	Conductor material	Insulated Al or Cu conductors
Number of conductors	3, 4, 5, clean earth, optionally 200 % N conductor	Enclosure material	Painted Al

1) On request

# LR system

## Highlights

- Suitable for external applications thanks to high degree of protection IP68
- Strong resistance to chemical substances and high mechanical strength through the use of epoxy cast resin enclosure
- Flexibility and consistency thanks to built-in connection to the LX and LD systems

### For the most adverse ambient conditions

Thanks to its enclosure made of epoxy cast resin with a high degree of protection IP68 and high short-circuit strength, the LR system provides reliable power transportation even under the most adverse ambient conditions. It is impervious to environmental factors such as air humidity and corrosive or salty atmospheres.

### Flexible power transportation for both indoor and outdoor applications

The robust system can be laid flat, upright, vertically or horizontally as required in applications from 400 A to 6,150 A.

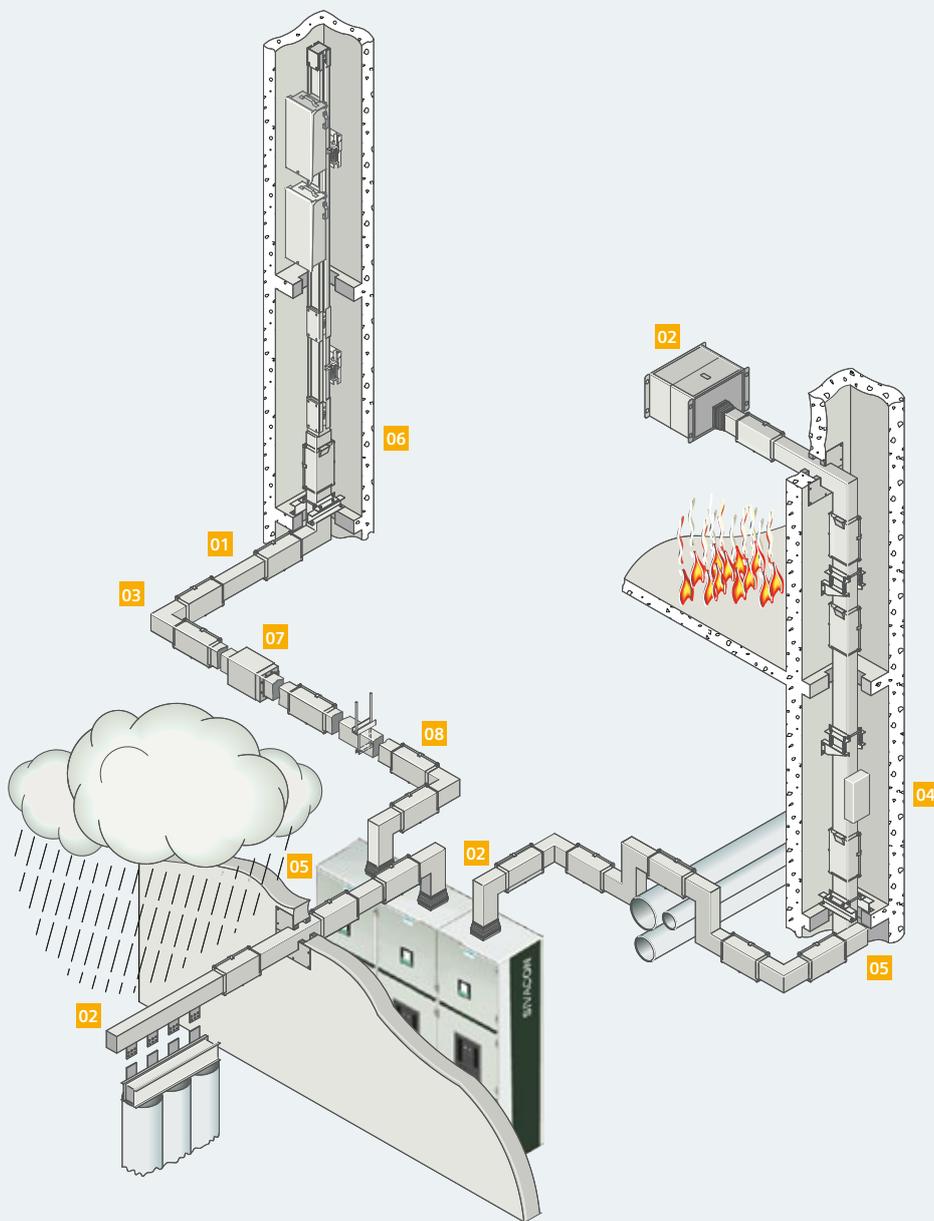
With only minimum space requirements, it can be optimally adjusted to the construction conditions with angles, connectors and T-pieces for change of direction. The LR system is also perfectly suited for outdoor applications.

### Consistency of the busbar trunking system with high currents

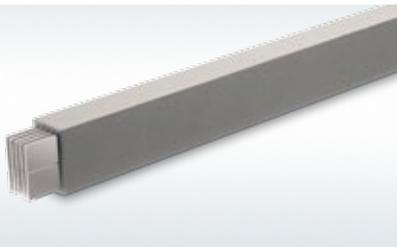
The LR system can be simply and quickly fitted using the bolt-type terminal block. It is consistent and can be easily combined with the LX and LD systems for indoor applications.



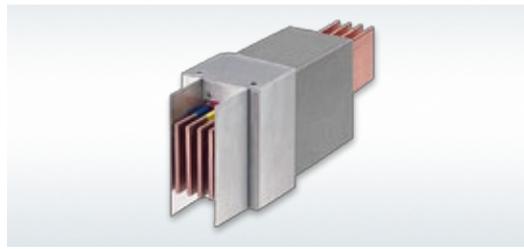
The LR system's epoxy cast resin housing ensures excellent mechanical stability and its IP68 protection rating allow applications in harsh environments and in outdoor area.



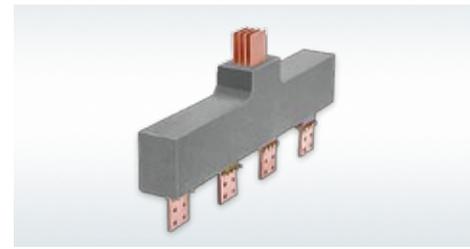
- 01 Straight busbar trunking unit
- 02 End feeder unit
- 03 Junction unit
- 04 Junction boxes
- 05 Accessories
- 06 Adapter to the LX system
- 07 Expansion compensation
- 08 Cast connection element



The LR busbar trunking system is available with both Al and Cu busbars.



The LR system can be connected to the LX or LD system by means of an adapter.



For reliable power transportation, the LR system provides numerous transformer terminal fittings.

#### Technical specifications

Rated insulation voltage $U_i$	1,000 V AC	Fire load	Max. 77.3 kWh/m
Rated operational voltage $U_e$	1,000 V AC	Fire load (per junction point)	–
Degree of protection	IP68	Junction point	Every 1 m, on one side
Rated current $I_e$	400 A to 6,150 A	Junction box	On request
Rated peak withstand current $I_{pk}$	Up to 220 kA	Joining system	Bolt-type terminal block
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 100 kA	Conductor material	Al or Cu conductors
Number of conductors	3 and PEN or 3, N and PE	Enclosure material	Epoxy resin

# Communication-capable busbar trunking systems

## Highlights

- Increased operating transparency due to detection of switching states
- Greater comfort due to connection to building automation
- High system availability thanks to remote monitoring

### Intelligent networking of power distribution

The intelligent networking of all installed assembly sections is one of the trends of modern building and industrial automation. To optimally satisfy the requests for transparent switching states as well as the central detection of operating states and data, we offer you communication capable components with accessories for the CD-K, BD01, BD2, LD and LX systems.

### Versatile functions for infrastructure and industry

The combinations of tap-off and ancillary equipment units as well as interoperable, manufacturer-independent bus systems permit the networking of all current ranges and can also be easily retrofitted in existing systems. From lighting control, through switching and signalling, to load measurement – easy to implement with the communication-capable busbar trunking system SIVACON 8PS.

### Customised future-proof solutions

With the GAMMA *instabus* building management systems, numerous functions for lighting, sun protection and room climate can be realised in a convenient, reliable and energy-saving manner. In addition, the lighting control can be connected to DALI in building management systems. GAMMA *instabus* is based on the worldwide KNX standard.

### Consistently communication capable

In industrial applications, on the other hand, the robustness and quick installation of the AS-Interface system is an advantage. Remote monitoring and remote actuation of consumers make it possible to quickly rectify faults, for example. Furthermore, the detection of switching and operating states increases operating transparency and the availability of the system.



The tap-off/ancillary equipment unit combination is networked via the AS-Interface and facilitates remote monitoring/switching.



The bus line connection by cable for use with the insulation piercing method retains application flexibility.

# Busbar trunking systems 8PS – expandable and communication capable

Basic function: Power distribution/transportation



## Function expansions

Transportation of bus signals directly via the busbar conductor with CD-K<sup>1)</sup>

Control of large-area lighting

Switching, signalling, remote operation

Consumption measuring and remote monitoring

Networking of different engineering disciplines

## Communication systems

KNX

DALI

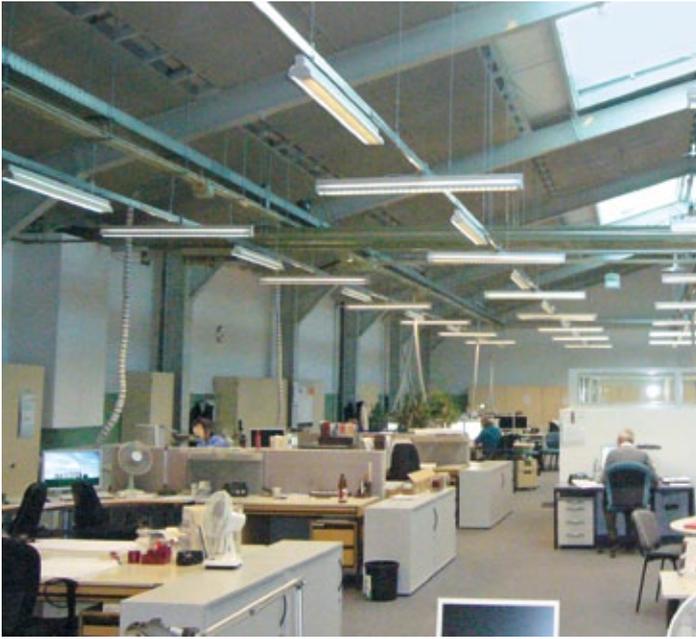
AS-Interface

Others on request



1) Communication systems on request

# Application examples



## Optimal, energy-efficient lighting in office loft

### Requirement

A former industrial hall is being converted into an open-plan office with 30 workstations. The workstations are to be lit in an energy-efficient manner, with automatic adjustment of the brightness depending upon the level of daylight shining through the skylight. The conversion must be performed quickly due to the time-critical relocation deadline.

### Solution

- Infeed to CD-K system via existing BD2 system
- 7-conductor CD-K system for 64 lights with DALI-compatible controlgears from OSRAM
- Transportation of the DALI protocol to the digital light control 140 m away directly via busbar conductor
- Color-coded tap-off plug for optical control of uniform phase loading

### Result

The energy-efficient lighting control with daylight adaptation by KNX reduces energy costs. The flexible group switching and individualised lighting adaptation deals with the prevailing usage demands. In addition, the communication solution integrated in the trunking units reduces wiring outlay and permits quick conversion.



## Rapid relocation of production thanks to modular system design

### Requirement

Large machinery, flexible tap-offs for machines and manual workplaces, completion within just a few months: All of these aspects have to be considered for the comprehensive relocation of a production hall.

### Solution

- Two busbar trunking runs in longitudinal direction
- Two compact feeder units with 400 A each
- BD2 system (180 m long) suspended from the ceiling with 50 cm distance
- Tap-off units for individual equipping
- Load feeders with 50 cm distance
- Easy connection of suspended cubes with integrated CEE socket outlets

### Result

The modular design and simple assembly make it possible to convert the workshop in a short space of time. In addition, it is possible to respond to future production changes quickly and flexibly.



## Sophisticated power distribution with high currents

### Requirement

The construction of a new production hall for solar technology also calls for a power supply meeting the highest of demands. Extremely power-intensive production processes as well as complicated local conditions have to be considered.

### Solution

- Connection between the five transformers and the low-voltage main power distribution board via five system LD busbar runs
- Eight runs up to 4,000 A for consistent power distribution; tap-off units pluggable while energised<sup>1)</sup> up to 1,250 A
- Two spare runs with 2,500 A each for future system expansions

### Result

The compact design of the busbar distribution system offers a space-saving solution with an attractive design. Extremely high operating transparency is achieved thanks to its communication capability. The short-circuit strength and the low fire load lead to greater safety. Configuration is made easier by simple and flexible planning or adaptation to the building structure.



## Reliable, transparent power supply in the data centre

### Requirement

Supplying power to data centres requires optimum power supply reliability and consistently high transparency. Further requirements are a low fire load and low susceptibility to electromagnetic fields.

### Solution

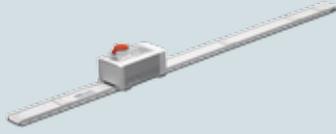
- Redundant busbar trunking systems, e.g. the BD2 system as power backbone
- Busbar trunking system as spur in the underfloor, for direct rack supply
- Networked connection via ancillary equipment units and parallel wired standard bus system

### Result

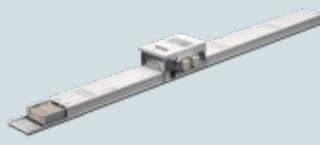
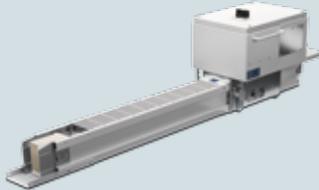
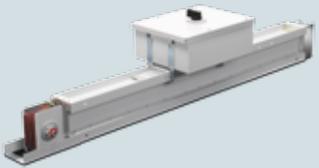
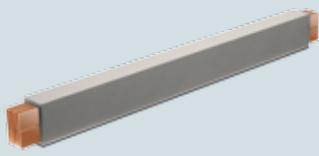
The power distribution is characterised by full transparency. In addition, the racks have high power supply reliability and automatic load detection. The demand-oriented expandability keeps all options open.

<sup>1)</sup> In acc. with EN 50110-1 (VDE 0105-1); please always observe national regulations/standards

# Technical specifications

	CD-K system	BD01 system
	 1) 2) 3) 4)	 1) 2) 3) 4) 5) 6)
Rated insulation voltage $U_i$	400 V AC	400 V AC
Rated operational voltage $U_e$	400 V AC	400 V AC
Degree of protection	IP54, IP55	IP54, IP55
Rated current $I_e$	25 A, 30 A and 40 A	40 A to 160 A
Rated peak withstand current $I_{pk}$	Up to 3.6 kA	Up to 15.3 kA
Rated short-time withstand current $I_{cw}$ (1 s)	Up to 2.4 kA	Up to 2.5 kA
Number of conductors	2, 3, 4, 4+2, 4+4 (PE = enclosure)	4 (PE = enclosure)
Fire load	Max. 0.48 kWh/m	Max. 0.76 kWh/m
Fire load (per tap-off point)	–	–
Tap-off point/junction point	Every 0.5 m, 1 m on one or both sides	Either 0.5 m or 1 m on one side
Tap-off unit/junction box	Up to 16 A	Up to 63 A
Joining system	Plug-in quick connection	Connection flange with integrated expansion compensation
Conductor material	Insulated Cu conductors	Insulated Al or Cu conductors
Enclosure material	Galvanised and painted sheet steel	Galvanised and painted sheet steel

<b>Country-specific approvals</b>	1) Russia	GOST-R	
	2) Ukraine	Ukrain-GOST	
	3) China	CCC	

BD2 system	LD system	LX system	LR system
 1) 2) 3) 4) 5) 6)	 1) 2) 3) 4) 5) 6)	 1) 2)	 1) 2)
690 V AC	1,000 V AC	1,000 V AC	1,000 V AC
690 V AC	1,000 V AC	690 V AC	1,000 V AC
IP52, IP54, IP55	IP34, IP54	IP54, IP55 <sup>7)</sup>	IP68
160 A to 1,250 A	1,100 A to 5,000 A	800 A to 6,300 A <sup>7)</sup>	400 A to 6,150 A
Up to 90 kA	Up to 286 kA	Up to 255 kA	Up to 220 kA
Up to 34 kA	Up to 116 kA	Up to 150 kA	Up to 100 kA
5	4, 5	3, 4, 5, clean earth, optionally 200 % N conductor	3 and PEN or 3, N and PE
Max. 2.0 kWh/m	Max. 8.83 kWh/m	Max. 16.6 kWh/m	Max. 77.3 kWh/m
–	Max. 10.8 kWh	Max. 2.9 kWh	–
Every 0.5 m on one side, offset on both sides every 0.25 m	Every 1 m, on one side	Every 0.5 m on both sides	Every 1 m, on one side
Up to 530 A	Up to 1,250 A	Up to 1,250 A	–
With built-in expansion compensation, plug-in terminal up to 400 A, single-bolt terminal over 400 A	Single-bolt terminal connection with hook/bolt technology	Bolt-type terminal block with shearing nut	Bolt-type terminal block
Al or Cu conductors	Al or Cu conductor (conductor surface galvanised), epoxy coating of conductors	Insulated Al or Cu conductors	Al or Cu conductors
Galvanised and painted sheet steel	Painted sheet steel	Painted Al	Epoxy resin

Marine classification societies 4) Det Norske Veritas (DNV)



5) Bureau Veritas



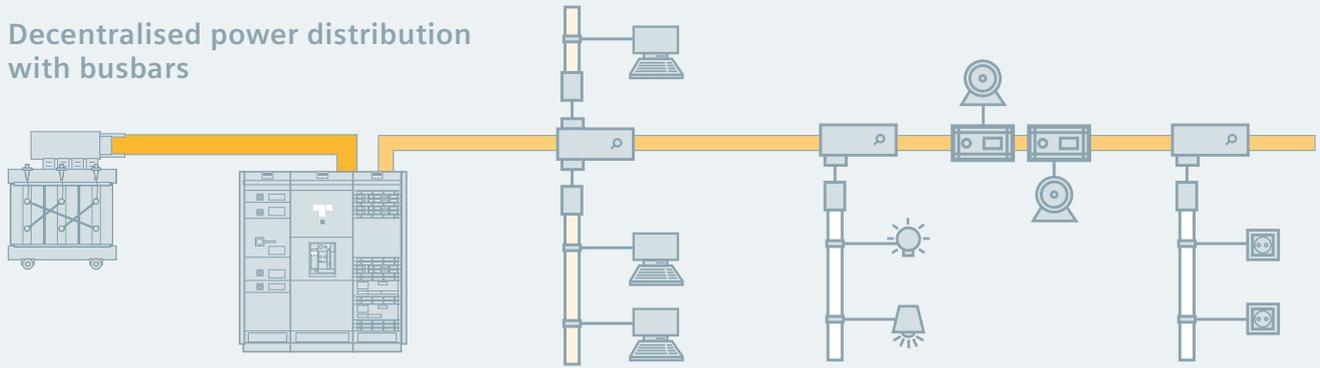
6) Lloyd's Register of Shipping



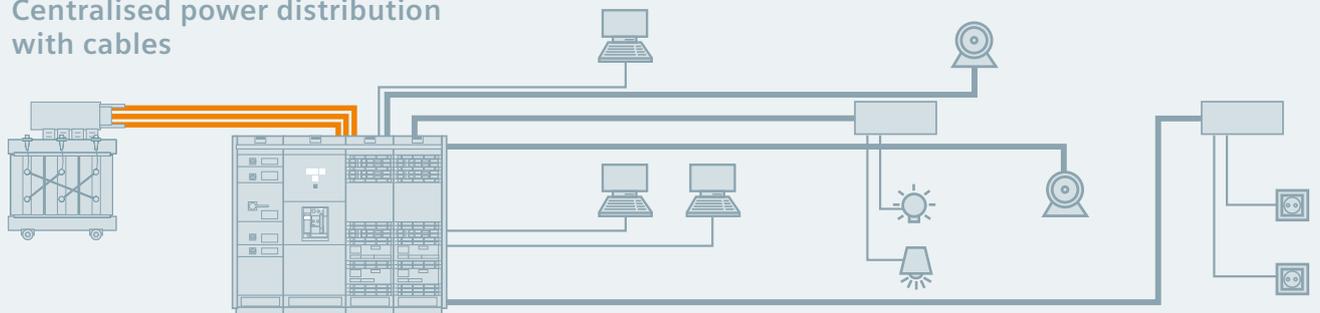
7) On request

# Advantages of busbars in comparison to cables

Decentralised power distribution with busbars



Centralised power distribution with cables



Feature	Busbars	Cables
Type-tested power device/control gear assemblies	High operational reliability and short-circuit strength due to type testing according to 60439-1 and -2	The operational reliability depends upon the quality of workmanship
Fire load	Very low; values can be read off from table p. 24	Very high; dependent upon cable type
PVC/halogen-free	On principle, busbar trunking units are halogen-free	Standard wires are not PVC- or halogen-free; halogen-free wires are extremely expensive and have long delivery times
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 changed, supplemented or replaced as desired, even whilst energised <sup>1)</sup> ; no downtimes; adaptable power supply	New installation usually required or high expense due to new splicings, clamping points, sleeving, parallel wires, etc.; high downtimes; rigid power supply
Space requirement	Very low due to compact design along the contours of the building; clear current carrying capacity	Enormously high due to bending radii, laying method, cable accumulation and current carrying capacity
Space requirement for low-voltage main power distribution	Lower space requirement because switching and protective devices can be arranged decentrally in the tap-off units	High space requirement
Troubleshooting and fault elimination	Easy and quick due to clear installation, and protective devices close to consumers	Very time-consuming due to complicated installation, and protective devices a long way from consumers
Electromagnetic susceptibility	Low susceptibility due to favourable conductor arrangement	Relatively high with standard cables; no defined conductor arrangement
Mounting time	Short mounting times; high turnover with same personnel cost; high value added	Long mounting times; high personnel cost with low turnover; low added value

# Any questions? One click – well-informed

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Order No. E10003-E38-2B-D0010-X-7600  
Dispo 25602 • 0412 • 5.0  
Printed in Germany

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