



SIEMENS



Totally Integrated Power – SIVACON 8PS

# The innovative alternative to cables

BD01, BD2, LD, LDM, LI, and LR busbar trunking systems

[siemens.com/busbar](https://www.siemens.com/busbar)



## Totally Integrated Power (TIP)

A reliable, highly available, and flexible power supply for industries as well as buildings and facilities provides the basis for both industrial processes and infrastructure solutions.

Siemens' solution is Totally Integrated Power (TIP), our comprehensive power supply portfolio of software and hardware products, holistic systems for all voltage levels, as well as energy management solutions. TIP is closely linked to industrial and building automation systems and is integrated into enterprise IT systems. This allows to fully exploit all the optimization potential of an integrated solution. TIP meets even the toughest requirements of supply-critical assets. An extensive support throughout the entire lifecycle starting with planning up to services completes our offering.

### **TIP in power distribution: Busbars instead of cables**

SIVACON 8PS busbar trunking systems transmit and distribute power safely and economically from the transformer to the main and sub-distribution boards to the actual consumers, in currents ranging from 40 to 8,200 amperes. The many innovative features of these busbar trunking systems make them an attractive alternative to conventional cables.



SIVACON 8PS  
busbar trunking systems:  
for safe power flows

# SIVACON 8PS busbar trunking systems

Faster and more economical, flexible, and efficient

Power distribution systems are costly and complicated to plan and install, and their level of complexity is increasing everywhere – from photo studios, home improvement centers, restaurants, and multi-story office buildings to purpose-built facilities and industrial applications. Cost effectiveness is a must, and changes in use of building space mean that flexibility and speed of system modification must be included in planning right from the start. Today a reliable, safe, and efficient power supply that serves a broad range of consumers is no longer enough. Above all, cost effectiveness is emerging as the single most important factor – and that's no surprise in an age of shrinking budgets, competitive pressure, and declining willingness to invest. But even so, buildings everywhere always need power.

A dilemma impossible to resolve? Not at all. SIVACON 8PS busbar trunking systems give you a genuine advantage as a technologically superior alternative to cables, combining cost effectiveness, flexibility, and safety.

Discover what this means for you: How busbar trunking systems can create lasting benefit for you as an installer, planner, and customer. No matter how diverse the industries, or whether they're for industrial use or high-rise buildings, technical trades, craft workshops, or even wind power farms – the result is always genuine added value. Find out more about the SIVACON 8PS busbar trunking systems here.

## SIVACON 8PS Benefits at a glance

### Economic advantages

- Enhanced planning certainty
- Compact design saves space
- Easy to install
- High level of flexibility for planning and operation
- Energy transparency through communications-capable measuring and switching devices

### System and operational safety

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

### Reliability

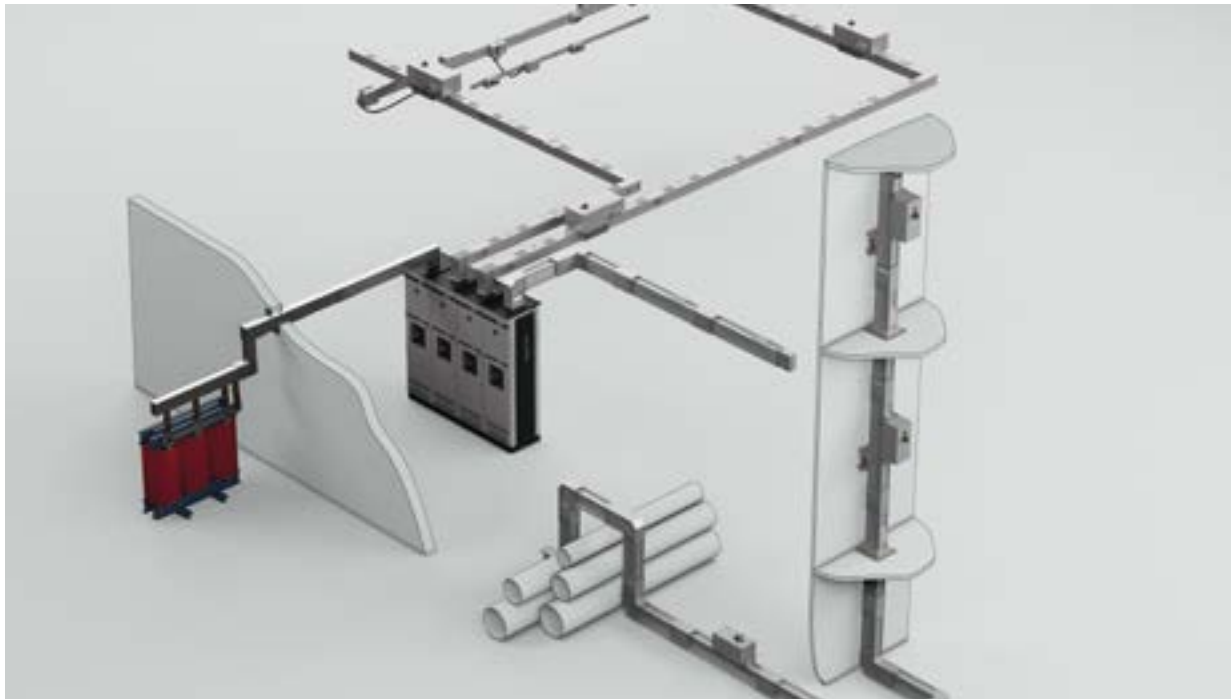
- High short-circuit rating
- Good electromagnetic compatibility
- Easy troubleshooting and error correction

### Innovation

- Safe, compact, and flexible solutions compared to cables

### One-stop shop

- Support from planning via installation to operation
- Complete portfolio serving a power range from 40 A to 8,200 A

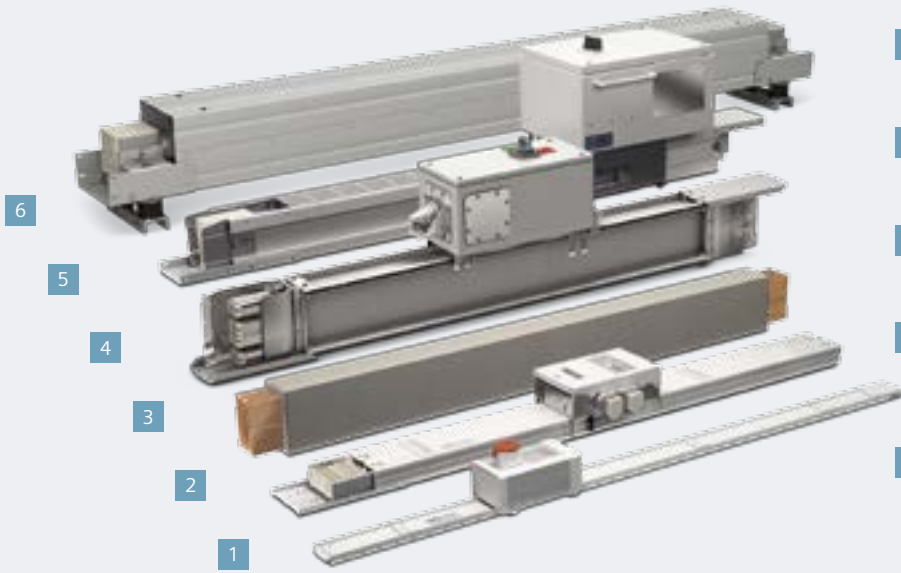


## Ideal for cutting costs

Cable-based power distribution means labor-intensive calculations, costly installation, and high power losses – all of which you leave behind when you switch to SIVACON 8PS busbar trunking systems for power transmission and distribution. The power supply is easy to plan and quick to install, and it can be adapted later at any time.

**Enhanced planning certainty pays off**  
There's more to it than just the SIVACON 8PS busbar trunking systems: Our TIP concept also includes technologies that provide the best possible process support and maximize return on investment – tools for professional planning and dimensioning that permanently reduce energy consumption and costs, and optimize the sizing of power distribution, to name just a few benefits. Furthermore, our specialists are there to help.

- All that's required to start planning is the total connected load of all consumers and a general layout drawing.
- Standardized modules enable planning to be executed quickly, which saves costs.
- SIMARIS planning tools are used, along with online support.
- Automatic planning of busbar arrangements in 3D using the intuitive tool SIMARIS sketch.



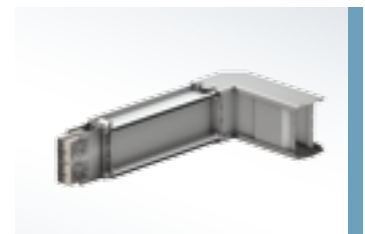
- 1 BD01 system – power distribution for small consumers, 40 A to 160 A
- 2 BD2 system: the universal solution for high performance in a small area, 160 A to 1,250 A
- 3 LR system – reliable power transmission for high protection in harsh environments, 400 A to 6,150 A
- 4 LI sandwich system: an integrated solution for safe and efficient power distribution, 800 A to 6,300 A
- 5 LD air ventilated system – reliable power transmission for high protection when large power volumes are needed, 1,100 A to 5,000 A
- 6 LDM system – safe and efficient power transmission in wind turbine, 800 A to 8,200 A

**A solid argument: busbar trunking systems save space**

The problem with cables in general is the heat that is generated where they are packed closely together; in other words, in places like cable ducts and riser shafts. That’s why cables are laid with gaps between them – and the amount of space they require is growing. With busbar trunking systems, however, this isn’t a problem because the heat dissipation function is “built in.” And while cables need space to go around corners, busbars can use junction units to bend at right angles if necessary. The result is major space savings – which is especially important not just in small electrical equipment rooms and riser shafts but also for electrical consumers with a high power density.

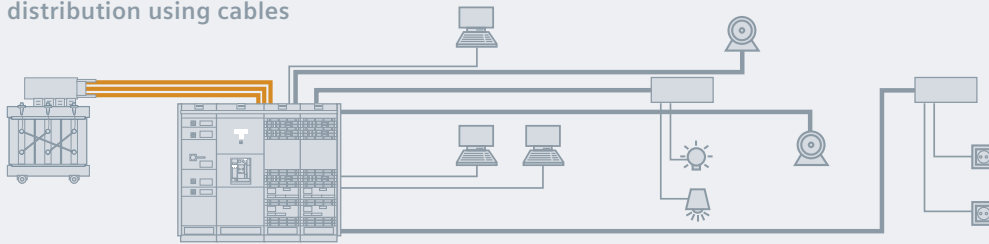
**A huge advantage: busbar trunking systems cut installation time**

What do you need to lay cables? Lots of installers, tools, and equipment: Tail pulleys, cable grips, roll-off devices for cable drums, hydraulic cutters, hydraulic pressing tools, and the list goes on. Add in small hardware and incidentals – and a lot of time. Installation costs are of course correspondingly high. So what happens when you use busbar trunking systems? Installation requires only a small crew, a few standard tools, and the connection technology is straightforward. Greater spacing between fasteners simplifies the installation. As a result, it’s faster and less expensive to install, and always safe.

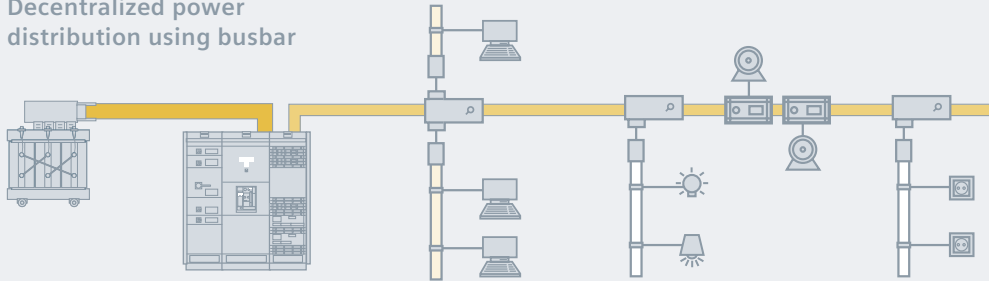


LI system: junction unit

### Centralized power distribution using cables



### Decentralized power distribution using busbar



Centralized vs. decentralized power distribution

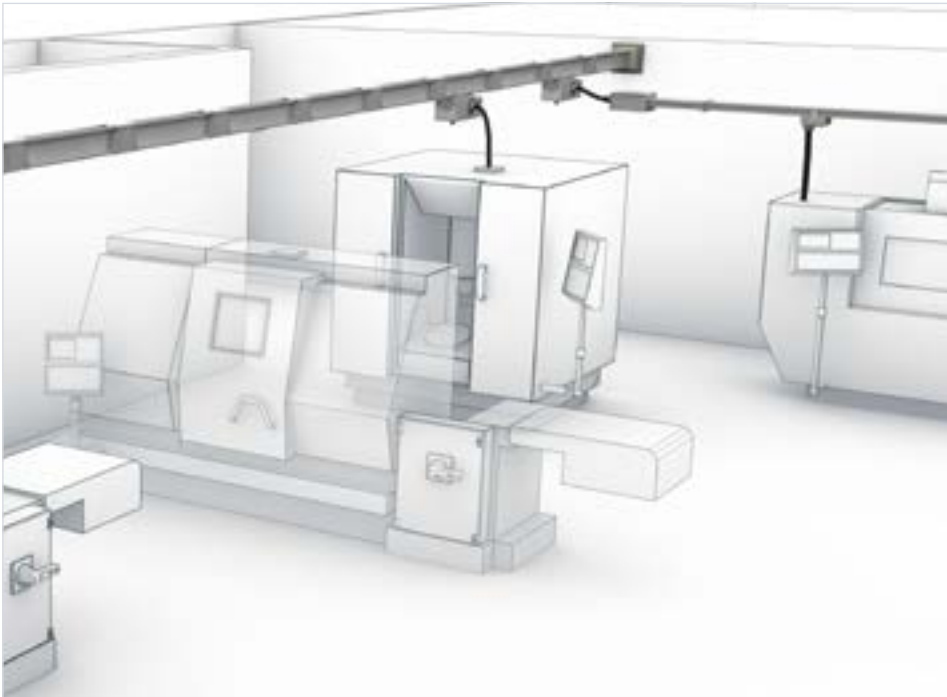
#### Clearer and more flexible network topology thanks to decentralized power distribution

First comes the cable connection between the transformer and switchboard. From there, the cables are routed to the individual consumers and sub-distribution boards. Any system expansion will require new cables to be laid and temporary disconnection of the switchboard – and that means shutting down the entire system or system section and everything attached to it. One negative side effect is diminishing system transparency every time changes are made.

With a busbar-based solution, a busbar trunking system safely connects the transformer to the switchboard. From the switchboard, a busbar trunking system serves as the backbone running throughout the entire facility system. Junctions are implemented using T-pieces. Tap-off

units are used to route power to where it's locally required. A huge advantage is that tap-off units can be connected and disconnected off-load and while the system is live<sup>1)</sup> – without interrupting the system power supply. The positive side effect here is that system transparency remains unaffected (even following local changes to consumers). Changes of load and system expansion can also be introduced using the existing system.

SIVACON 8PS busbar trunking systems allow clearly designed network structures and flexible power tapping, make the process faster and more flexible, and reduce costs. Short response times and low costs – even when expansions and adjustments are made.



Basic power supply expansion with a new consumer

### Everything already integrated for efficient power management

Digitalization, power management, transparency of power consumption, energy quality, and availability of power distribution – everyone is familiar with the keywords of state-of-the-art power distribution. And this is what everyone demands, because it's all about optimizing power costs and consumption. But to achieve this, you need data.

Communications-capable measuring and switching devices can be integrated into the tap-off units of the SIVACON 8PS bus-bar trunking systems, allowing you to display and analyze transparent energy flow data and enabling future-proof integration into company-wide energy management systems in compliance with ISO 50001. This information provides a realistic basis for data allocation to cost centers and for measures aimed at increasing energy efficiency. It also documents the savings that have been achieved.



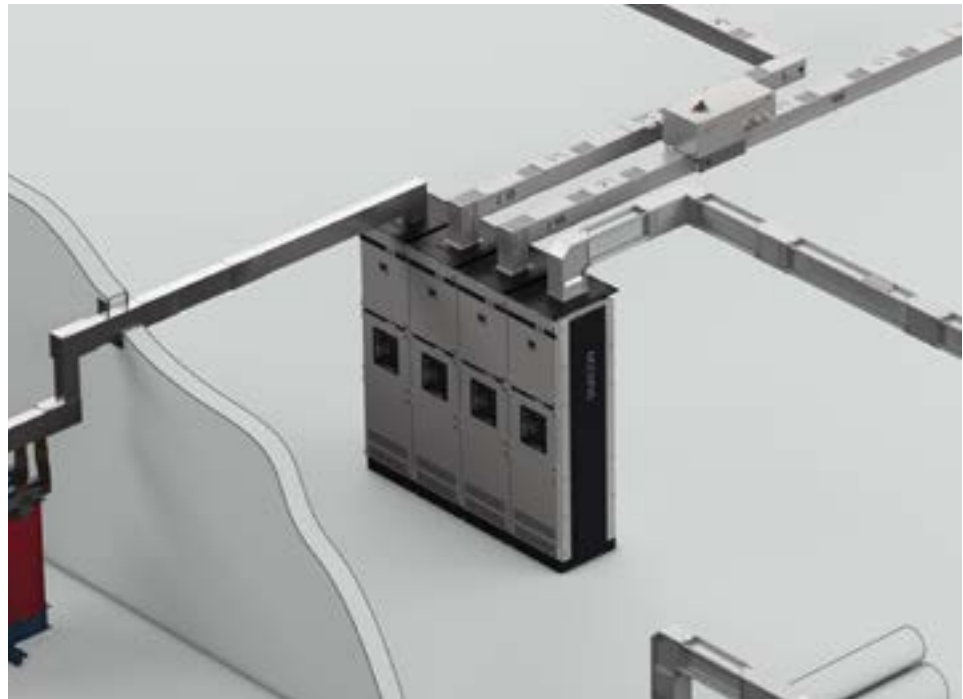
LI system: tap-off unit with measurement function

From left:

Design verification assures  
high level of safety

Good electromagnetic  
compatibility

Comparison between cables and a  
busbar trunking system at  
identical current levels



## New standards of safety and availability

The SIVACON 8PS busbar trunking systems are design verified in compliance with IEC 61439-1/-6. They offer a high short-circuit rating and a low fire load. Furthermore, they enable a rapid troubleshooting and fault elimination. In short, this translates into increased safety for people and buildings and high availability for all applications.

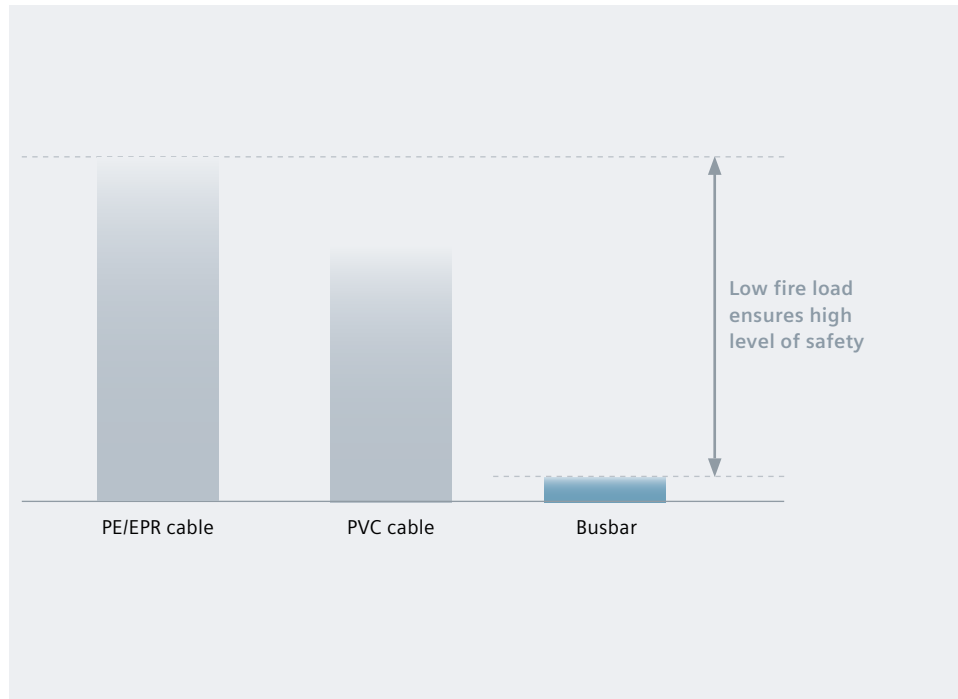
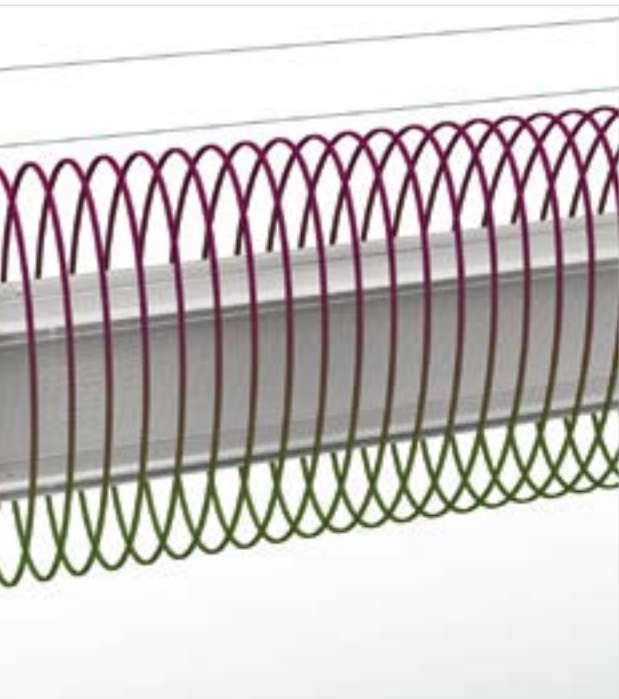
**Fully design verified – with a connection to the SIVACON S8 switchboard.** SIVACON 8PS busbar trunking systems are low-voltage switchgear and control-gear assemblies that are design verified in compliance with IEC 61439-1/-6. They offer a high level of safety for people and plant as a result.

The design verified connections between the LD and LI high-current busbar trunking systems and the SIVACON S8 switchboard, and the standard connection to the LR outdoor busbar trunking system round out the portfolio.

**Short-circuit proofed, right from the factory**

Everything you have to do to install cabled systems is already in place when you get a busbar trunking system – built-in at the factory. Short-circuit rating, for example. When you install a cable system, you establish this by mounting the appropriate number of retaining elements, whereas with a busbar system that's already provided – which is a major safety plus for both people and buildings.





#### Incredibly low fire load

Laws governing fire protection and fire hazards are getting more stringent by the day. Legislation – and plant operators, too – now demand low fire loads, which means the volume of energy released when all combustible materials are burned.

Whereas standard cables come with both PVC and halogens; trunking units are entirely halogen-free and offer a low fire load.

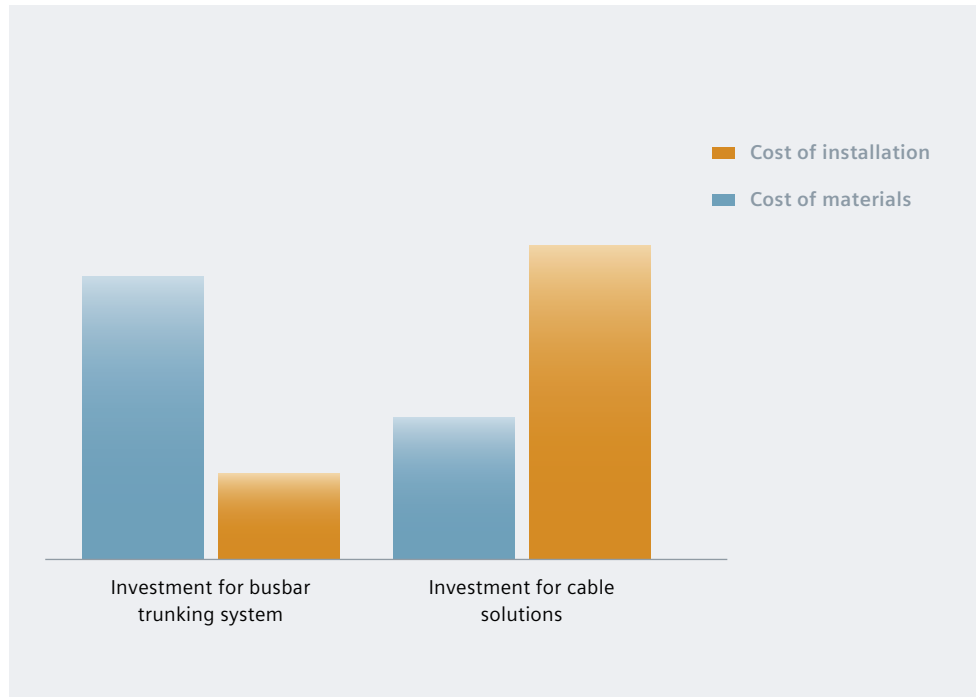
#### High electromagnetic compatibility

Both cables and busbars have an electromagnetic impact on their environment. This can disrupt sensitive devices. Here too, SIVACON 8PS busbar trunking systems have an advantage over cables: At identical current levels, busbars exhibit significantly better electromagnetic compatibility (EMC).

#### Easy troubleshooting

If a fault is discovered in a cabled installation, the problem could lie in the cabling itself. That makes troubleshooting labor-intensive and complicated, and you often need to shut down the entire system, with a loss of production being just one of the consequences. Using busbar trunking systems, faults can only occur in an outgoing feeder. This means faults can be isolated quickly and successfully. And there's no need to shut the system down<sup>1)</sup> to fix it.

1) In compliance with EN 50110-1 (VDE 0105-1); Please always observe national regulations/standards



## Have you rechecked the costs?

Comparing the cost of a conventional cable installation with that of an innovative busbar trunking system reveals one thing very clearly: The bulk of the price shifts from installation to materials. Installation expenses, which always differ from case to case, fall away while the share accounted for by industrial manufactured and tested standardized components increases.

### More cost-efficient than you imagine

The break-even point – when and on what order of magnitude the total cost of both materials and installation of a busbar trunking system become less than a cabled system – varies greatly from case to case. It is also often achieved in applications where it is not anticipated. Taking the greater flexibility of system operation into account, the busbar trunking system is more cost-efficient.

### Far ahead in energy performance

The low power loss with the SIVACON 8PS busbar trunking systems puts them ahead of cables in terms of energy performance.

### ... and competent in support

The benefits gained from the support our specialists provide to implement state-of-the-art power distribution concepts is hard to precisely calculate, but it makes perfect sense – beginning with the initial planning and throughout the entire lifecycle of your system. This degree of backup is priceless.

# Support

Time optimization with Siemens as your expert partner at your side

## SIVACON 8PS busbar trunking systems on the Internet

Our website offers you a wide range of promotional and technical information as well as helpful tools for the SIVACON 8PS busbar trunking systems.

[siemens.com/busbar](https://www.siemens.com/busbar)



### Convenient planning using SIMARIS tools

Planning of electrical power distribution for industrial plants, infrastructure and buildings is increasingly complex. Innovative SIMARIS software tools provide effective support for your planning process enabling you, the electrical designer, to work better and faster under the given conditions.

#### ■ SIMARIS design

Dimensioning electricity networks and selecting components automatically

#### ■ SIMARIS project

Calculating space requirements and budgeting for power distribution

#### ■ SIMARIS sketch

Creating 3D line routing plans for the BD01, BD2, LD and LI busbar trunking systems

[siemens.com/simaris](https://www.siemens.com/simaris)

### Technical documentation on the Internet

An up-to-the-minute overview of the available technical documentation on the SIVACON 8PS busbar trunking systems is available on the Internet at

[siemens.com/lowvoltage/product-support](https://www.siemens.com/lowvoltage/product-support)

### Tender specifications

We offer you a comprehensive range of tender specification texts to assist you at

[siemens.com/specifications](https://www.siemens.com/specifications)

### Building on a sound foundation

Our training courses provide you with a solid foundation for your business success.

Experts provide the theoretical and practical knowledge you need for our SIVACON 8PS busbar trunking systems.

[siemens.com/lowvoltage/training](https://www.siemens.com/lowvoltage/training)

### Reliable on-site support

Our local experts are there for you worldwide. They help you develop power supply solutions and offer you support with their specialist knowledge in project management and financial services, while always taking important aspects such as safety, logistics, and environmental protection into account.

For your TIP contacts, see [siemens.com/tip-cs](https://www.siemens.com/tip-cs)

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