SIVACON S8plus

Intelligent. Flexible. Safe. Power distribution for industry and infrastructure

SIEMENS

Navigation tips – about this presentation

Chart 3 works with links to **five typical sectors and product recommendations** for them, and to the **benefits** and the specifications of **SIVACON S8^{plus}**. In presentation mode, click on the desired topic in order to select it; just click on the page to navigate forwards.

If desired, you can view a graphic with a magnifying glass symbol in a larger view – just click on the graphic field to open or close it.

❮ Back to main menu

« Back to sub-menu

SIEMENS

- SIVACON S8plus in short ›
- Environmentally friendly power distribution ›
- Many applications – one single power distribution ›
- Simply use the data potential ›
- Flexibility, today and tomorrow ›
- Safety without any ifs or buts ›
- SIVACON – system-based power distribution ›
- System overview: cost-efficient design, high quality ›

SIEMENS

The plus for real added value

SIVACON S8^{plus} low-voltage switchboard

SIEMENS

The demands on power distribution are growing, ...

… calling for greater efficiency, sustainability, and maximum reliability.

system availability

energy transparency

flexibility

sustainable solutions

SIEMENS

Benefit from a power distribution on a systematic basis

A **smart power distribution system**
provides the interface between production and power.

Its **reliability and efficiency**
underpin the cost-efficiency of all processes.

It is the **backbone of all operational and production processes.**

Make systematic use of the benefits of digitalization – for efficient design and installation, and future-oriented operation.

SIEMENS

More performance for your future

SIVACON S8^{plus} means safety for personnel and assets, efficiency, resilience, and sustainability. The simple connection to automation and smart power management creates a cost-efficient solution. And because it can be flexibly expanded on a modular basis, it’s also ready for the tasks of the future.

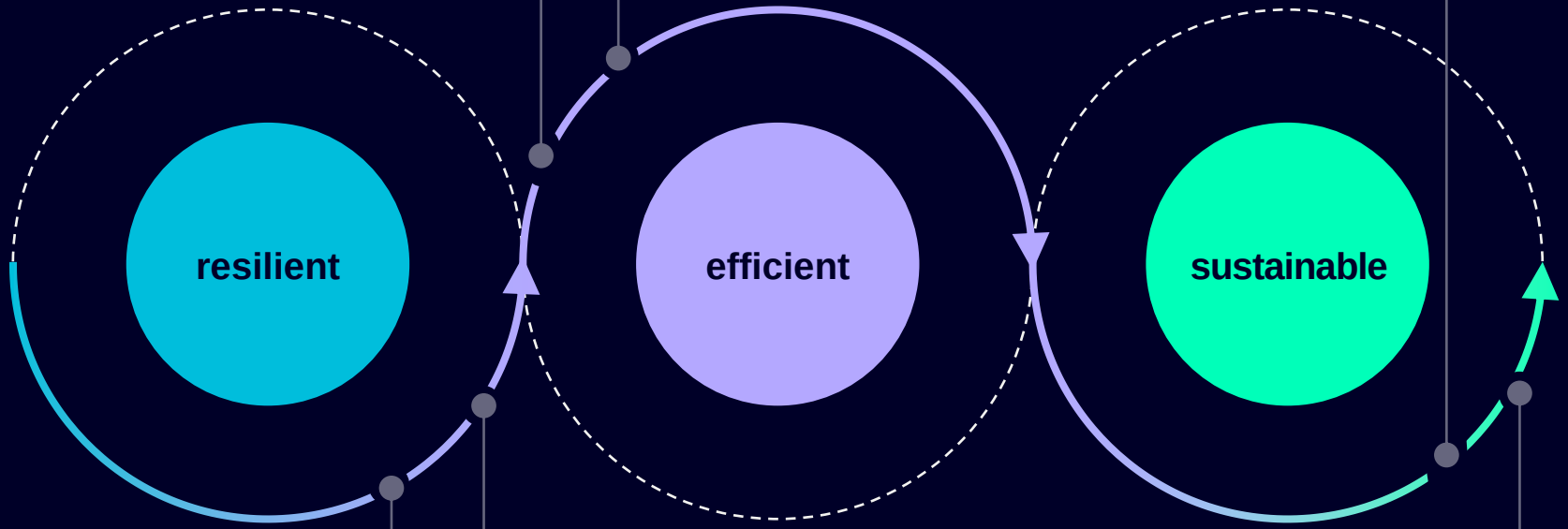
Its earthquake-tested design and certification for offshore applications, in particular, are testimony to its reliability.

Sustainable system advantages for your success – SIVACON S8plus
On the way to a new, better energy world

Highly flexible
Easy adaptation of operations thanks to replaceable functional units

Getting ready for the digital future
With SIMARIS control HMI as an enabler for power management, continuous monitoring, and diagnostic information for predictive maintenance

Sustainable planning
with SIMARIS design and Efficiency Guide



High personnel and switchboard safety levels
Modular arc fault protection system tested in accordance with IEC/TR 61641, active arc fault protection system

Tested safety
Seismic upgrade and certification for ships and offshore platforms

Sustainable design
Resource-optimized use

SIEMENS

Proven system

You benefit during **planning**, **installation**, and **operation**, with the SIVACON S8^{plus} low-voltage switchboard!

It contributes to **smart power distribution**

all the way to the consumer.

SIEMENS

Many applications – one power distribution system

Power distribution boards

Infrastructure (e.g. building control technology)

- To switch and protect electrical circuits

Data centers

- For Information and Communication Technology (ICT) and the infrastructure

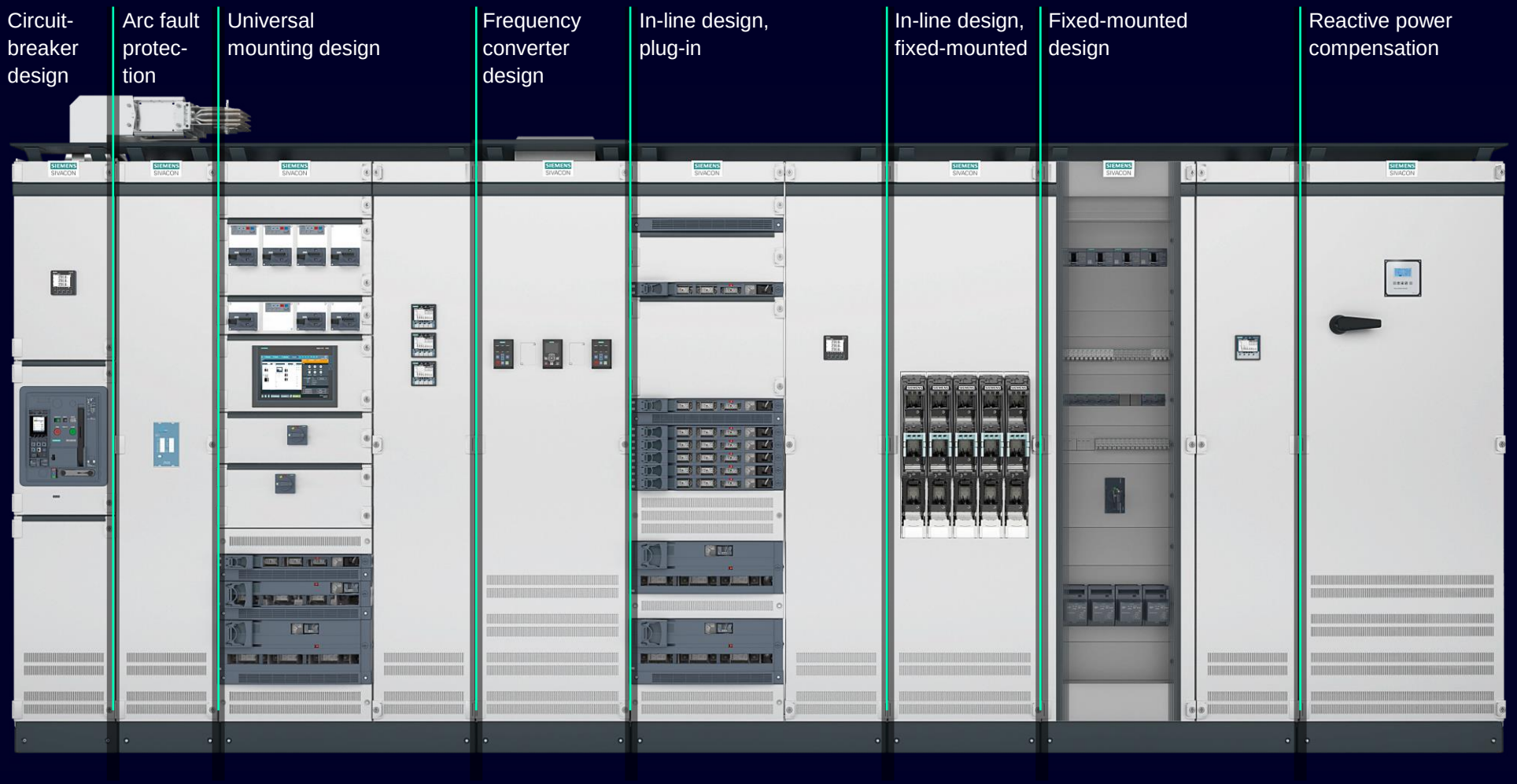
Motor Control Centers

Process industry (e.g. chemical, oil and gas)

- To control and protect motors, valves, etc.

SIEMENS

Flexible and scalable power distribution for your application



SIEMENS

Safety as an integral component – for all applications with your SIVACON S8plus

Safety for personnel and switchboard

thanks to testing in accordance with IEC 61439-2

High process safety level

thanks to quality and an integrated system approach

Observance of national regulations

Certification for ship/ offshore applications

Earthquake-tested version

for high seismic requirements

SIEMENS

Use energy data in a smart way
On-premise solution: SIMARIS control, the digital twin of your switchboard

Record data –
Make the most of communication-capable devices

Visualize data –
Get a quick and reliable overview – the digital twin of your switchboard

Analyze data –
Faster, easier, and more flexible on-site analysis

Manage switchboard –
Operate/manage your switchboard more efficiently

Transfer data –
Use the potentials of information exchange

SIEMENS

Combine the real and digital worlds with SIVACON S8^{plus} low-voltage switchboard ...

… and benefit for your application from

system availability at all times,

high

energy transparency,

and **flexibility,**

as well as **sustainable solutions.**

SIEMENS

Environmentally friendly power distribution

SIVACON S8plus low-voltage switchboard

SIEMENS


Global warming and **climate change**
are key challenges of our time.
1/3
of the global
energy is consumed by
industries.
20 %
of CO_2-emissions
come from industrial
production.

SIEMENS

Sustainability is becoming more and more business-relevant …

Legal requirements

EU Taxonomy for sustainable finance published in 2019, to guide capital markets towards sustainability.

Customer requirements

Companies require **suppliers to comply with CSR[1] guidelines and NQC qualifications** to participate in bids.

Investor requirements

Investors **require a more thorough review of the potential risks** of projects **including ESG[2] risks**.

New financing conditions

New financing models which make use of equipment both environmentally and financially sustainable for customers (Pay-as-you-save).

Increased public scrutiny

Rising movements such as **“Fridays for Future”** and increased protests against companies for improved ESG[2]. Customers increasingly demand more sustainable products and ingredients (e.g. F&B).

[1] Corporate Social Responsibility | [2] Environment/Social/Governance criteria

SIEMENS

Today's biggest global challenges require transformative change

We will need to …

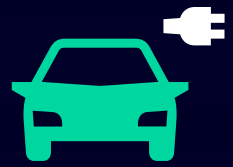
Reduce emissions

Lower emissions **by 50%** in this decade and reach **net 0** by 2050[1]

Increase renewables

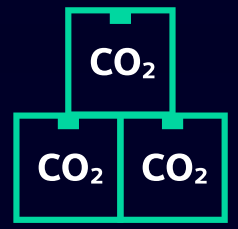
Install **8x more** solar panels and **5x more** wind turbines by 2030[2]

Electrify mobility



Grow use of **EV passenger vehicles by ~25%** per year until 2030[3]

Capture CO_2



Capture, use, and/or **store CO_2**[3]

Find net 0 alternatives

Shift to **zero-emission alternatives** such as electrification[3]

Source: [1] "Net-zero Challenge." Boston Consulting Group https://www.bcg.com/about/about-bcg/net-zero | [2] McKinsey and Company. Scenario A – "The 1.5-degree challenge." https://www.mckinsey.com/business-functions/sustainability/our-insights/interactive-the-1-point-5-degree-challenge | [3] McKinsey and Company https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-math-what-a-1-point-5-degree-pathway-would-take

SIEMENS

Our contribution to a

sustainable power distribution

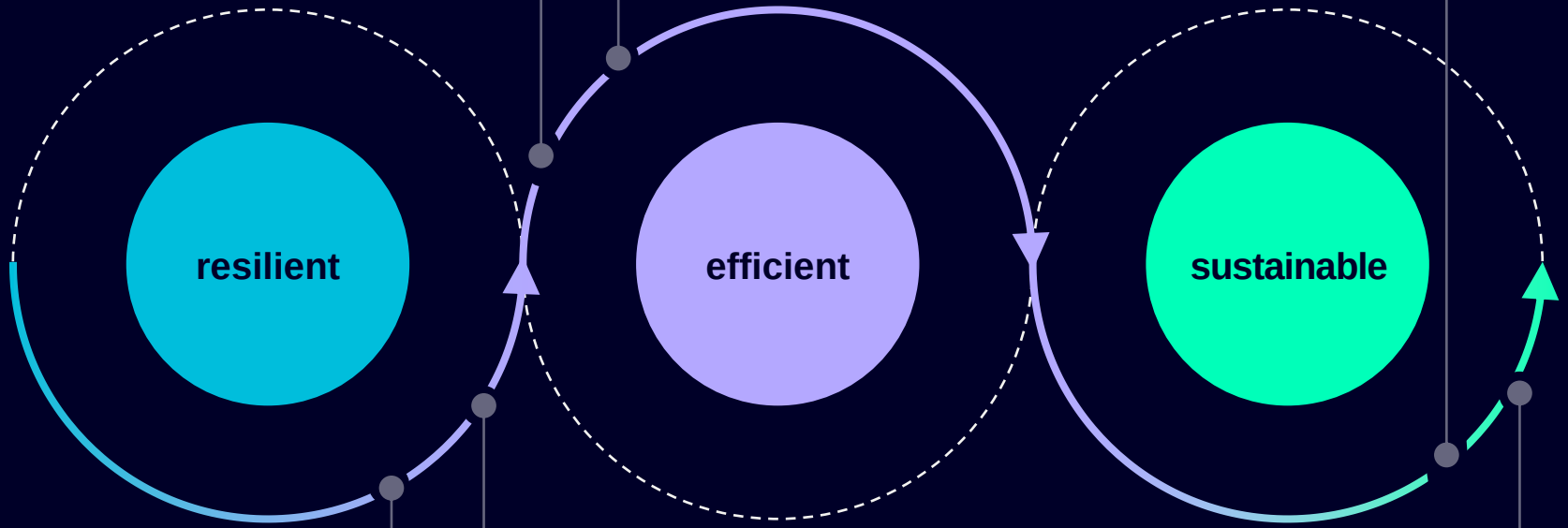
SIEMENS

Sustainable system advantages for your success – SIVACON S8plus
On the way to a new, better energy world

Highly flexible
Easy adaptation of operations thanks to replaceable functional units

Getting ready for the digital future
With SIMARIS control HMI as an enabler for power management, continuous monitoring, and diagnostic information for predictive maintenance

Sustainable planning
with SIMARIS design and Efficiency Guide



High personnel and switchboard safety levels
Modular arc fault protection system tested in accordance with IEC/TR 61641, active arc fault protection system

Tested safety
Seismic upgrade and certification for ships and offshore platforms

Sustainable design
Resource-optimized use

SIEMENS

Resilience

The preventive, reactive, and active protective measures in SIVACON S8plus help reduce downtimes and avoid faults. Your plus in reliability.

Efficiency

A simple connection to automation and smart energy management create a cost-efficient solution.

Sustainability

The architecture is resource-optimized and can be expanded on a modular basis, and is therefore also ready for the tasks of the future.

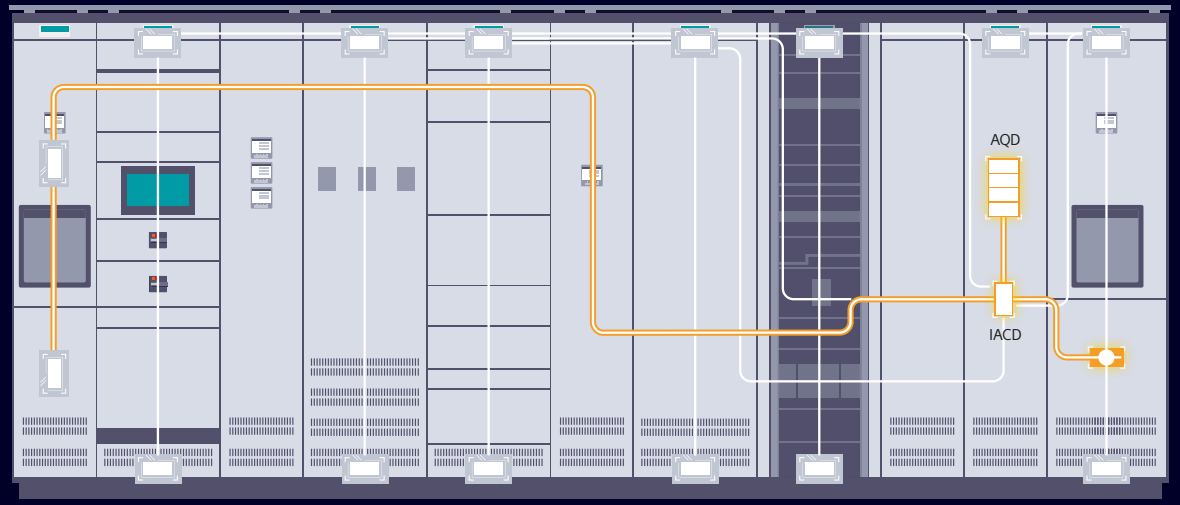
SIEMENS

Sustainable power distribution supported by a high level of resilience and efficiency

- High safety and reliability levels
- Highly cost-efficient thanks to extensive system flexibility
- Efficient design with SIMARIS software tools and BIM data
- Foundation for asset management and cloud services
- Innovative SIMARIS control diagnostic station
- Condition monitoring and high operational transparency

SIEMENS

Safety without any ifs or buts
High resilience: active and reusable arc fault protection system



Design verified and internal arc classified
comprehensive solution up to 100 kA

Testable – up to 100 test cycles

Reusable – two full-load operations
under fault conditions

Continuous self-monitoring
of system condition

Increased protection for personnel and switchboard

Improved plant availability

SIEMENS

Sustainable power distribution
space saving and flexible design, energy efficient solution

Compact circuit-breaker cubicle
up to 3 circuit breakers in 600 mm width cubicle

High packing density
up to 48 feeders in withdrawable design in one outgoing feeder cubicle

Energy efficient and future-proof solution
modular and compact frequency converter cubicle for IE5 motors

High level of flexibility
modular withdrawable design

SIEMENS

SIMARIS control: Consistent acquisition of device status, measured values, and sensor data

Energy and status data for a high energy efficiency and switchboard availability

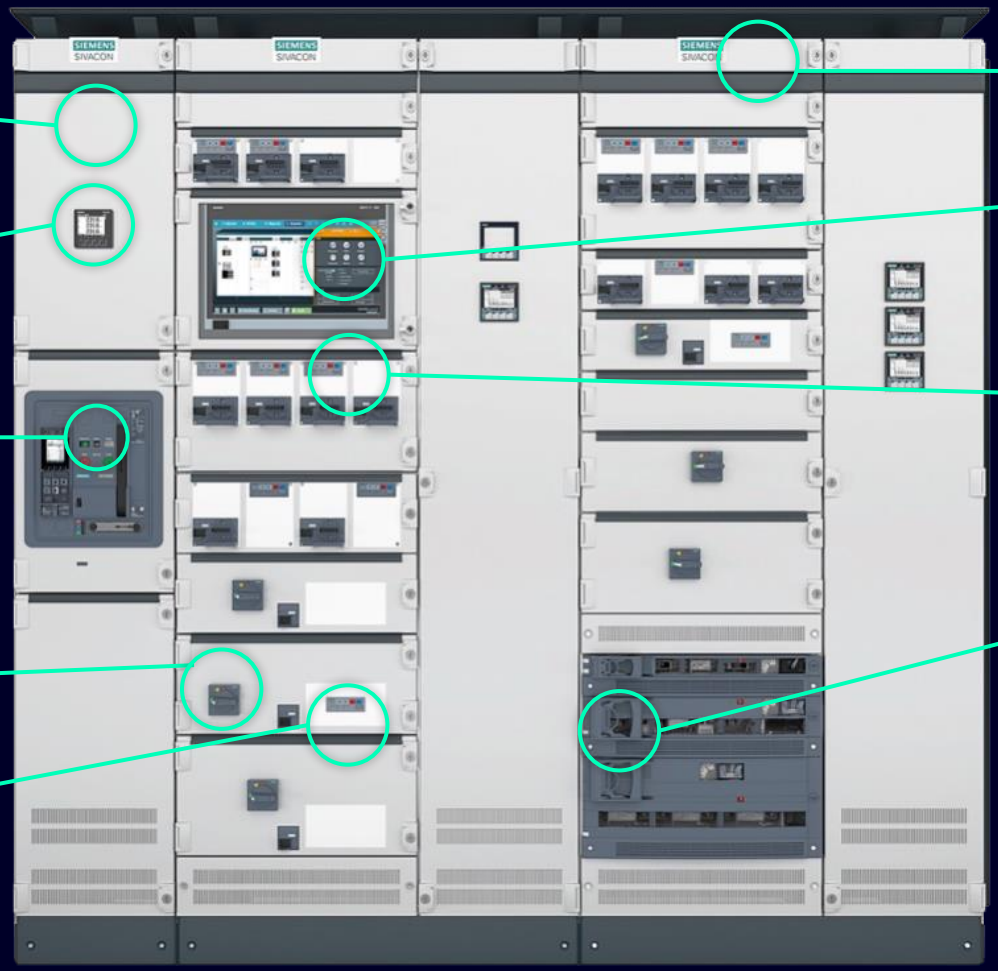
PLC controller
- Switchover
- Automation
- Data recording from conventional devices
- Status recording

SENTRON 7KM PAC5200 measuring device
- Recording grid quality

SENTRON 3WA air circuit breaker
- Status information
- Power measurement
- Remote operation

SENTRON 3VA molded-case circuit breaker
- Power measurement
- Status information
- Remote operation

SIRIUS motor starter
- Status information
- Measuring function



Sensors
- Temperature recording

SIMARIS control diagnostic station
- Visualization
- Operation
- Parameterization

SIMOCODE pro motor management system
- Status information
- Power measurement
- Remote operation

SENTRON 3NJ63 switch disconnector
- Fuse monitoring
- Status information
- Measuring function

G120 frequency converter
- Status information
- Measuring function

SIEMENS

Manage your power data for more sustainability

On-premise solution: SIMARIS control, the digital twin of your switchboard

Record data –
Make the most of communication-capable devices

Visualize data –
Get a quick and reliable overview – the digital twin of your switchboard

Analyze data –
Faster, easier, and more flexible on-site analysis

Manage switchboard –
Operate/manage your switchboard more efficiently

Transfer data –
Use the potentials of information exchange

SIEMENS

Sustainable system advantages for your success – SIVACON S8plus

On the way to a new, better energy world

- RoHS / REACH
- EPD available
- Mechanical product lifetime up to 30 years & reparability
- Optimized lifetime – predictive maintenance
- Material & footprint (space) reduction – Double front design

- Power loss-optimized system design – middle-incomer
- Optimized material usage – low CO2 footprint design
- Recyclable materials – circular economy
- Eco friendly/friendlier materials – green steel*, green plastics**

- PV energy to supply production***

* mid term as market is willing to pay for ** ongoing process with replacement of tools etc. *** ~2024

SIEMENS

The Sustainable Grid – SIVACON S8 contribution:
Resource Efficiency

The way to Zero Resources

High percentage of recycling
Low percentage of disposal
High percentage of recycled materials
Low use of new resources

SIVACON S8 low-voltage switchboard

- System Design in double-front: up to **50% less Cu**, LV room **space saving**
- SIVACON S8 basic design w/ **less plastic +** use **recycled** plastics
- Overall recyclability **~95%**, waste-to-landfill **0%**

SIEMENS

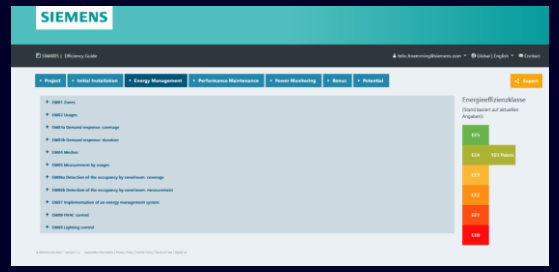
The Sustainable Grid – SIVACON S8 contribution:
Assess & Report

Assess & Report

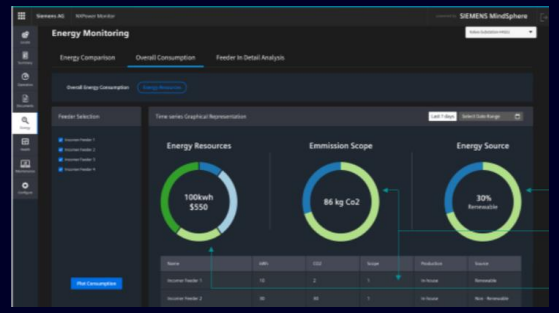
Scopes 1 & 2:
- 100% Carbon Neutral Energy Sources
- No Fossil Processes
- Lower operational emissions

Scope 3:
- Lower manufacturing emissions

Plan with **Sustainability** with the Efficiency Guide - n mind



Dynamical report Scopes 1 & 2



Use EPDs for Scope 3 & other KPIs

SIEMENS

Many applications – one single power distribution

SIVACON S8^{plus} low-voltage switchboard

SIEMENS

To adapt to growing customer requirements ...

… the industries and infrastructure need

system availability at all times,

high

energy transparency,

and **flexibility**

for the modular expansion.

SIEMENS


your plus for work

Power distribution on a systematic basis
SIVACON S8plus low-voltage switchboard

A **smart power distribution system**
provides the interface between production and power.

Its **reliability and efficiency**
underpin the cost-efficiency of all processes.

It is the **backbone of all operational and production processes.**

Make systematic use of the benefits of digitalization – for efficient design and installation, and future-oriented operation.

SIEMENS

Many applications – one power distribution system
SIVACON S8plus low-voltage switchboard

Power distribution boards

Infrastructure (e.g. building control technology)

- To switch and protect electrical circuits

Data centers

- For Information and Communication Technology (ICT) and the infrastructure

Motor Control Centers

Process industry (e.g. chemical, oil and gas)

- To control and protect motors, valves, etc.

SIEMENS

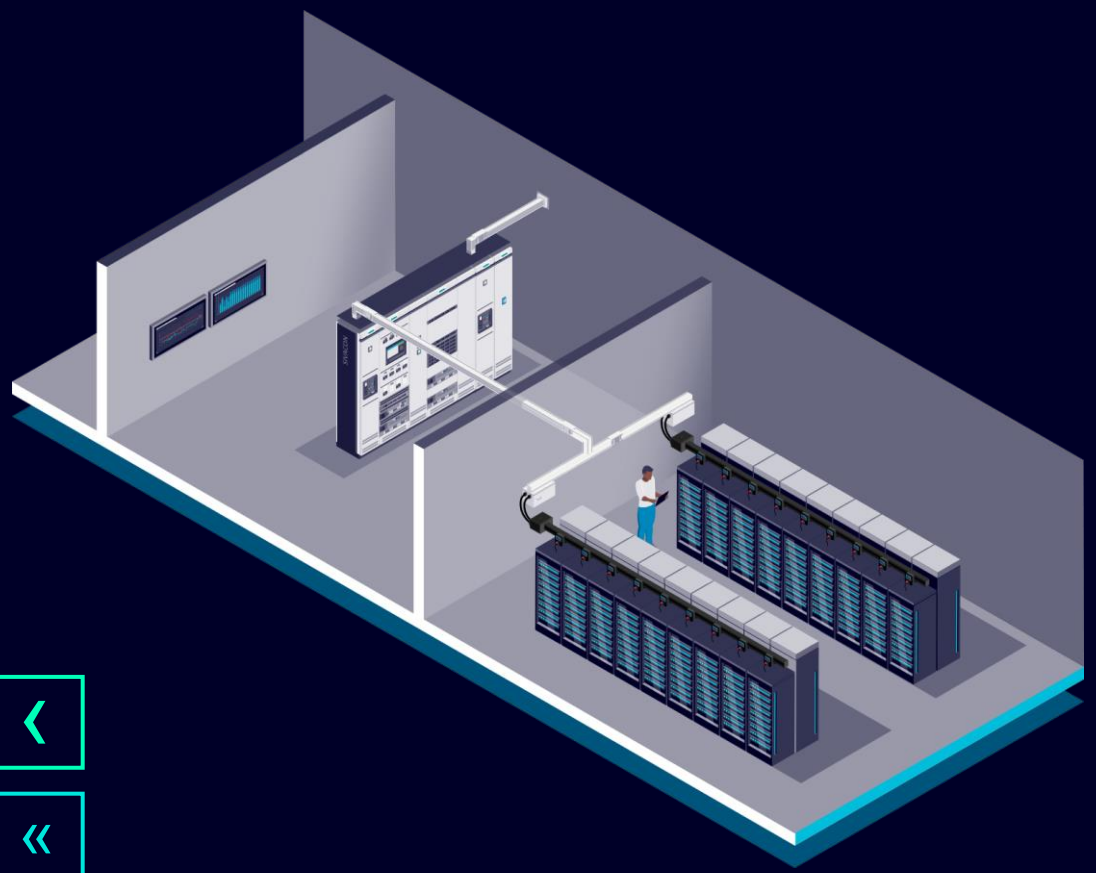
SIVACON S8plus in the process industry

Flexibility and safety for your shop floor – now and in the future

- **Optimum safety** for personnel and switchboard
- **Reliable power distribution** for all areas of your shop floor
- **Highly flexible** in terms of future, modular production processes
- Ready for you to launch into the **digitalization** of your processes

SIEMENS

SIVACON S8plus for critical infrastructure

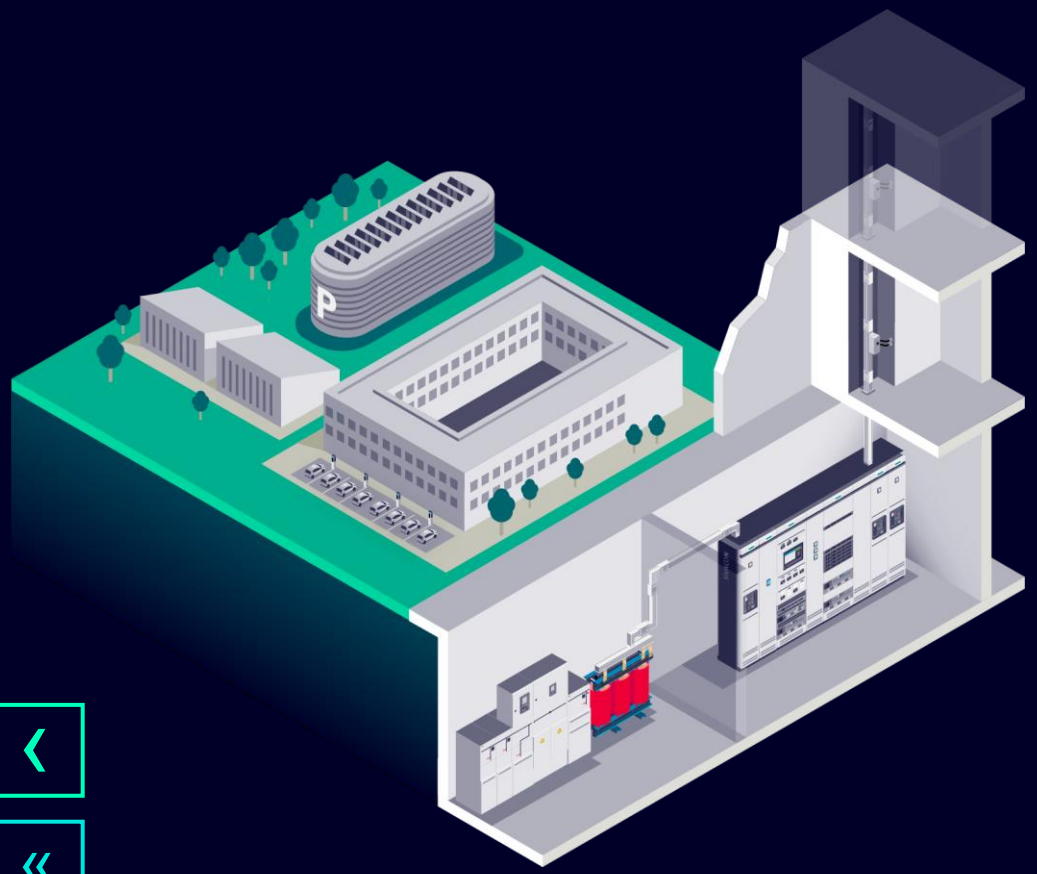


Invest in a smart power distribution – with high operational reliability

- **Optimum safety** for personnel and switchboard
- **Reliable power distribution** for all areas in the data center
- **Design-verified connection** to SIVACON 8PS busbar trunking systems
- **Easy integration** of the power distribution **into energy management systems**

SIEMENS

SIVACON S8^{plus} for urban communities

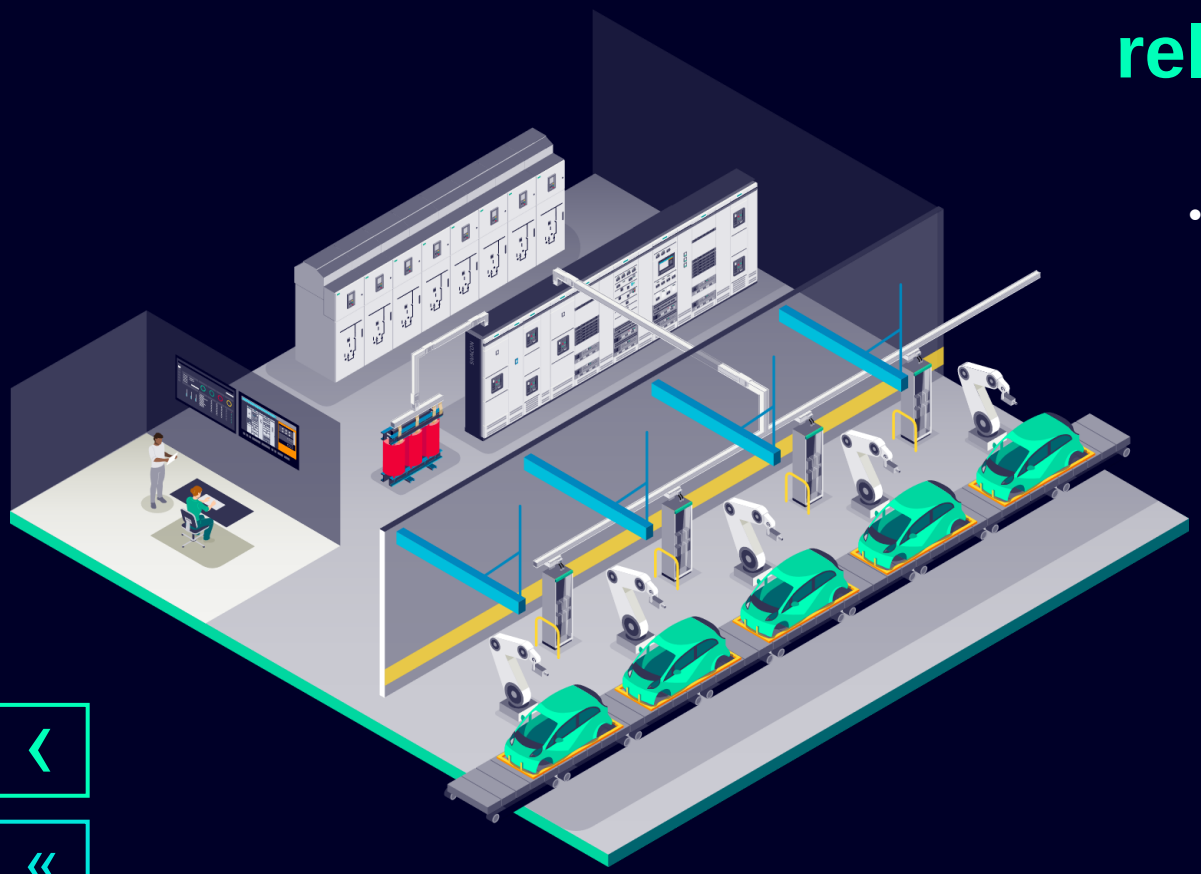


Future-proof and space-saving power distribution

- **Optimum safety** for personnel and switchboard
- **High resilience** thanks to reliable power supplies to all infrastructure
- Integrated data transmission as an option for **smart power monitoring**
- Ready for you to launch into the **digitalization** of power distribution

SIEMENS

SIVACON S8plus in the manufacturing industry



Power distribution 4.0 – smart and reliable for your production

- **Optimum safety** for personnel and switchboard
- **High resilience** and **minimized downtimes** thanks to a reliable power distribution for all areas of your shop floor
- Integrated data transmission as an option for **smart power monitoring**
- **Easily integrate** power distribution **in your automation system**

SIEMENS

SIVACON S8plus in the oil and gas industry

Reliable power for oil and gas

- **High level of safety** for personnel and switchboard
- **Optimum flexibility** of distribution, whether in permanent buildings or as an e-house
- **High resilience** and **minimized downtimes** thanks to a reliable power distribution for all areas of your shop floor
- Integrated data transmission as an option for **smart power monitoring**

SIEMENS

The shortcut to success

SIVACON S8^{plus} means safety for personnel and switchboard. Efficiency, resilience, and sustainability.
Space-saving design and the simple connection to automation and smart energy management create a cost-efficient solution.

And because it can be flexibly expanded on a modular basis, it’s also ready for the tasks of the future.

SIEMENS

Simply use the data potential

SIVACON S8^{plus} low-voltage switchboard

SIEMENS

Digitalization starts with the planning process

Efficient planning

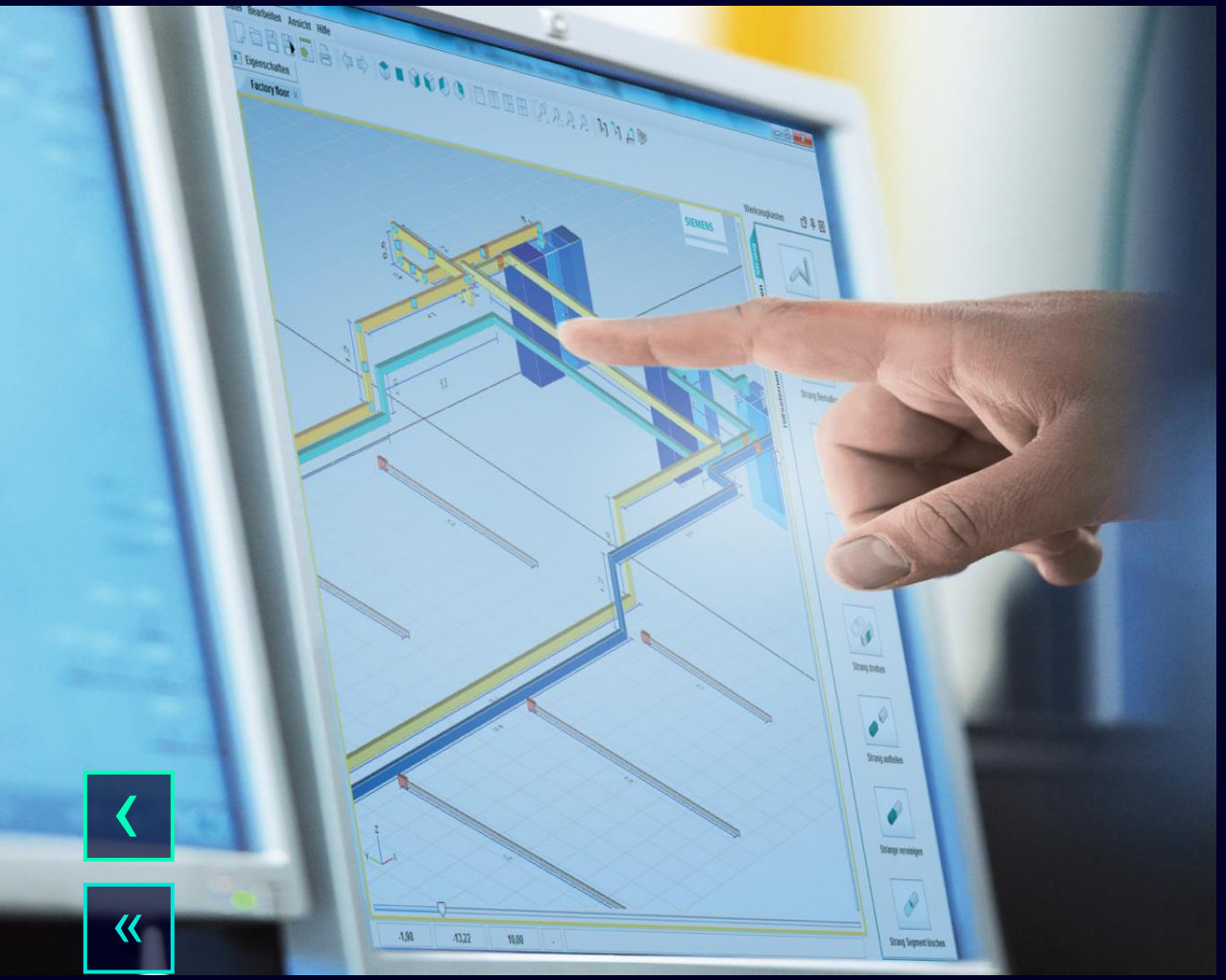
Reliable dimensioning – from the medium-voltage level down to the consumer

Easy and fast determination of space requirements

Clearly designed planning documentation

SIEMENS

Convenient planning – using SIMARIS software tools



Intuitive, flexible, time-saving, to keep your planning costs down

SIMARIS project
Calculating space requirements and budgeting for power distribution

SIMARIS design
Dimensioning electricity networks and selecting components automatically

Efficiency Guide
Recognize potential for improvement

BIM data
Fit for the future - ifc files available

SIEMENS

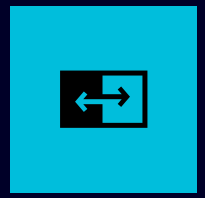

Ready for your future-proof
switchboard and its digital twin

SIEMENS

Be ready for tomorrow ...

… with a future-proof switchboard and corresponding BIM data!

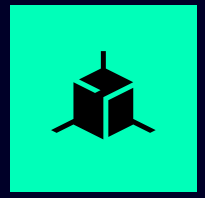
BIM data - as built for planning,



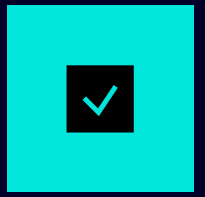
documentation, and visualization,

maximum

usable space,



and **collision-free**



with other trades components such as water pipes or ventilation ducts

.

SIEMENS

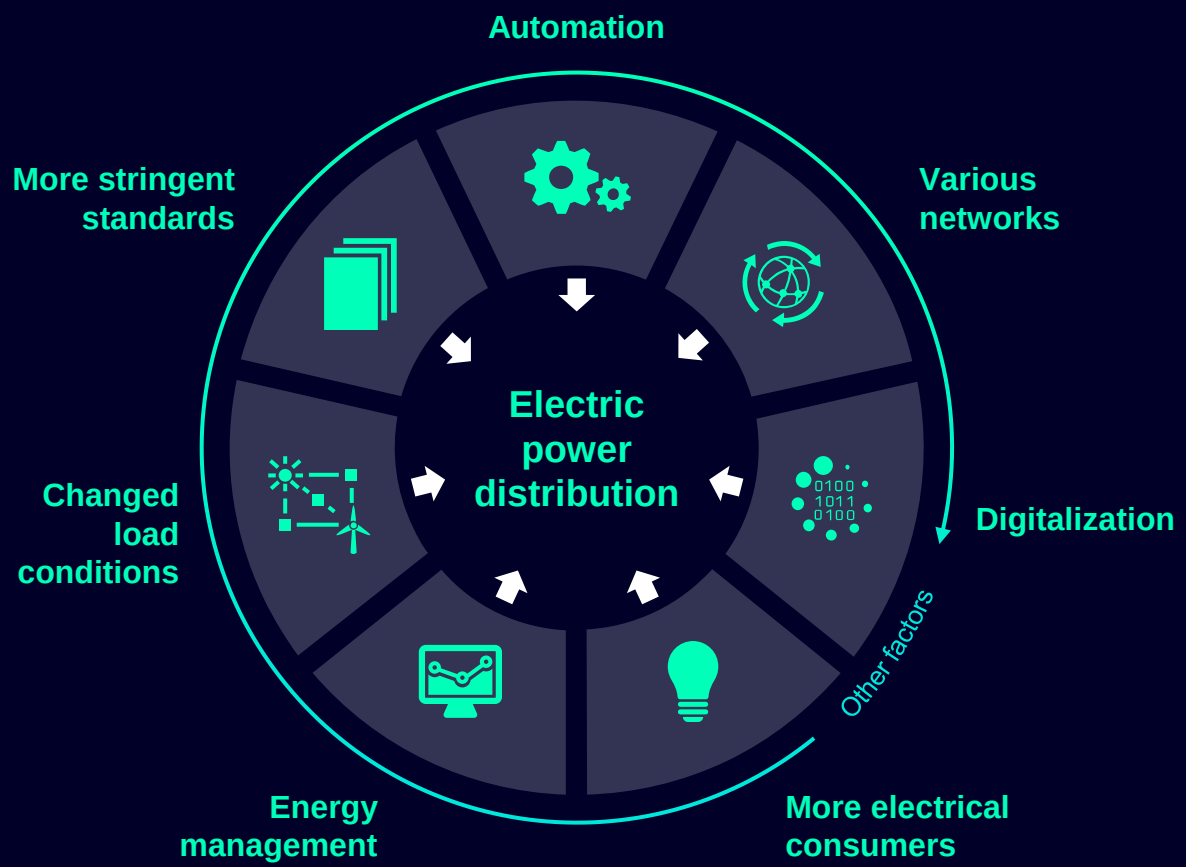
Making clever use of energy data

Smart power distribution that uses potentials

SIEMENS


More than a black box
The intelligent SIVACON S8plus
switchboard

More complex technology and business processes
Electric power distribution in transition



More complex technical requirements

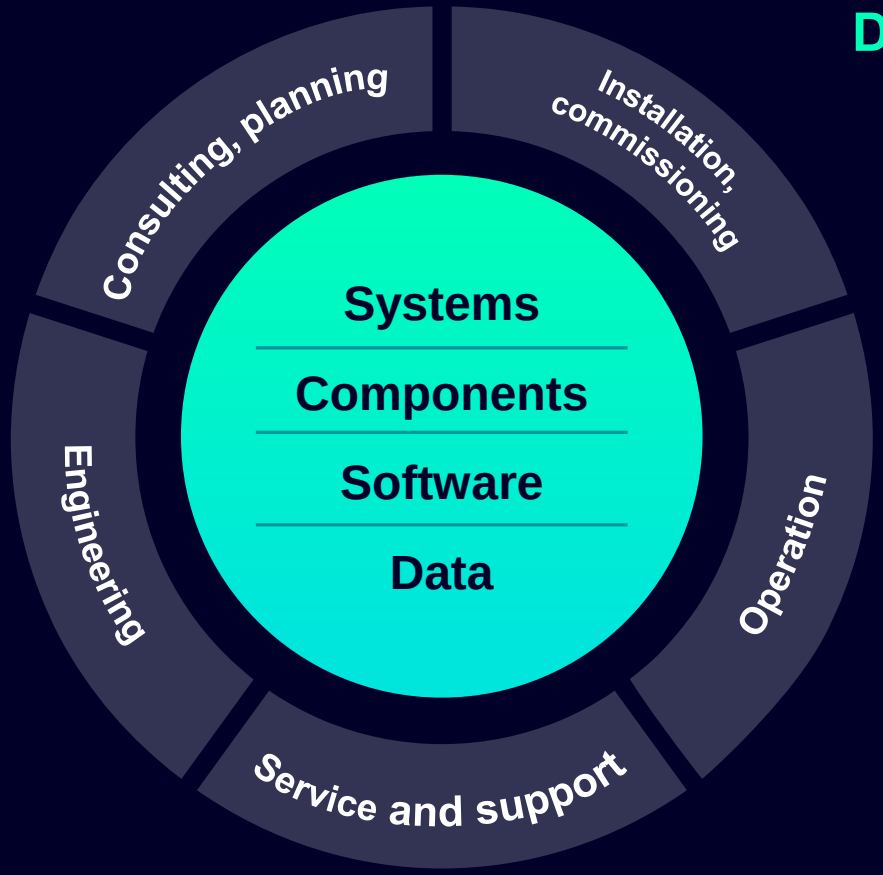
- Energy efficiency
- Switchboard availability
- Conformity with standards
- Communication capability

Acceleration of business processes

- Quick planning
- Adaptability
- Flexibility

SIEMENS

Interaction between data, software, and hardware



Digitalization in the complete value-added process

- Uninterrupted and safe power distribution
- Integration into holistic energy efficiency concepts
- Seamless integration into industrial and building automation
- Connection to cloud-based, open IoT operating systems
- Support of the complete lifecycle management

SIEMENS

SIMARIS control – digital intelligence for your SIVACON S8plus

Manage your power data

Record data –
make the most of communication-capable devices

Visualize data –
get a quick and sound overview

Analyze data –
easily recognize correlations

Manage systems –
experience your advantages live

Transfer data –
effectively use the potentials
of information exchange

SIEMENS

Connectivity: Consistent acquisition of device status, measured values, and sensor data
Energy and status data for a high energy efficiency and switchboard availability

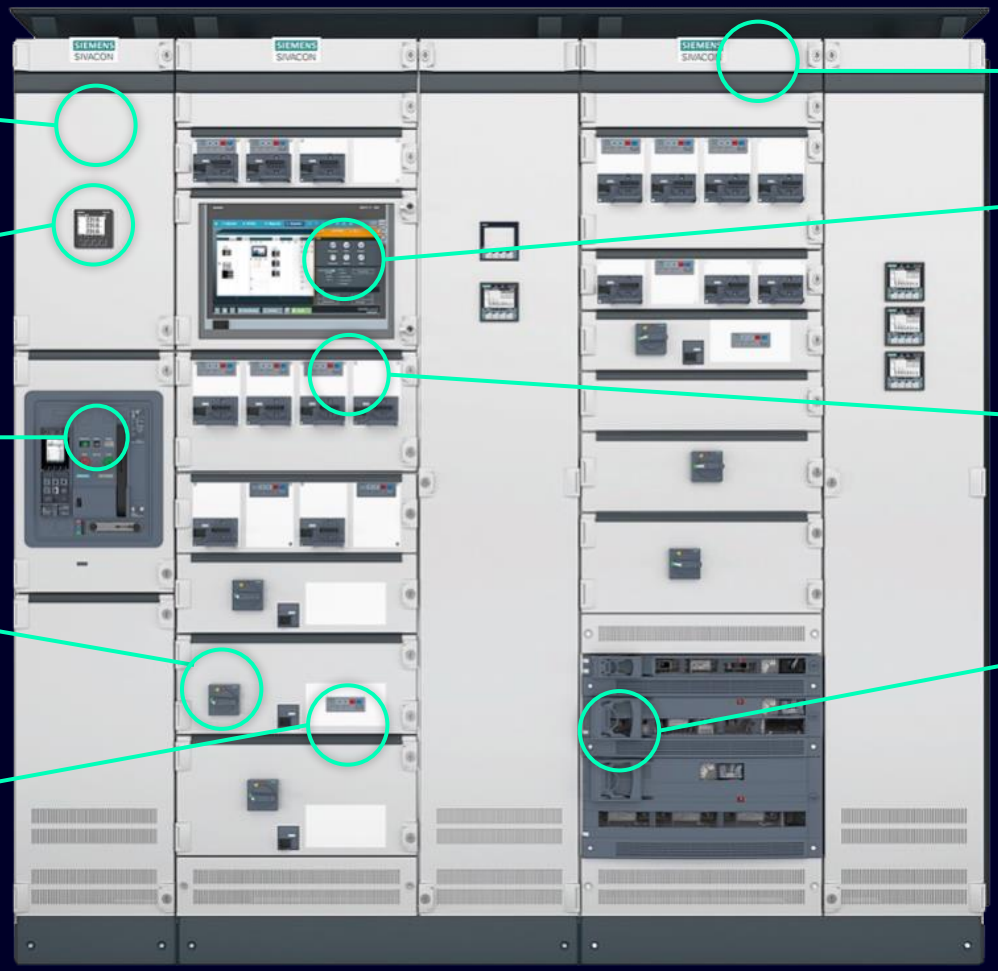
PLC controller
- Switchover
- Automation
- Data recording from conventional devices
- Status recording

7KM PAC5200 measuring device
- Recording grid quality

3WA air circuit breaker
- Status information
- Power measurement
- Remote operation

3VA molded-case circuit breaker
- Power measurement
- Status information
- Remote operation

SIRIUS motor starter
- Status information
- Measuring function



Sensors
- Temperature recording

SIMARIS control diagnostic station
- Visualization
- Operation
- Parameterization

SIMOCODE pro motor management system
- Status information
- Power measurement
- Remote operation

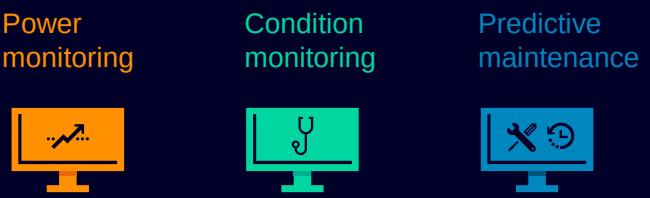
3NJ63 switch disconnector
- Fuse monitoring
- Status information
- Measuring function

G120 frequency converter
- Status information
- Measuring function

SIEMENS

Turn power data into benefits
Electrical power distribution as a data supplier

Cloud-based analytical systems



Power distribution

Faster diagnosis

Predictive maintenance

Efficient planning of maintenance activities

Energy efficiency

SIEMENS

On-premise solution: SIMARIS control, the digital twin of your switchboard

Make the most of communication-capable devices

Get a quick and reliable overview – the digital twin of your switchboard

Faster, easier, and more flexible on-site analysis

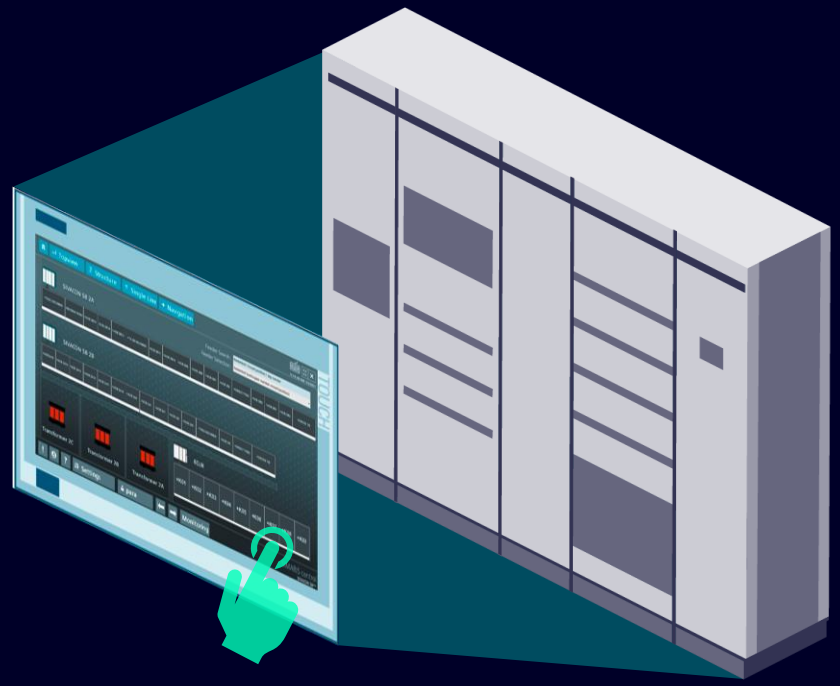
Operate/manage your switchboard more efficiently

Use the potentials of information exchange

SIEMENS

SIMARIS control for control and monitoring of low-voltage switchboards SIVACON S8plus

Monitoring
Diagnosis
Parameters



- Easy, reliable, and safe remote operation
- Control and monitoring
- SIVACON S8 and S8plus
- Local data storage
- Parameterization
- Integration of peripheral devices
- Remote visualization
- Smart documentation

SIEMENS

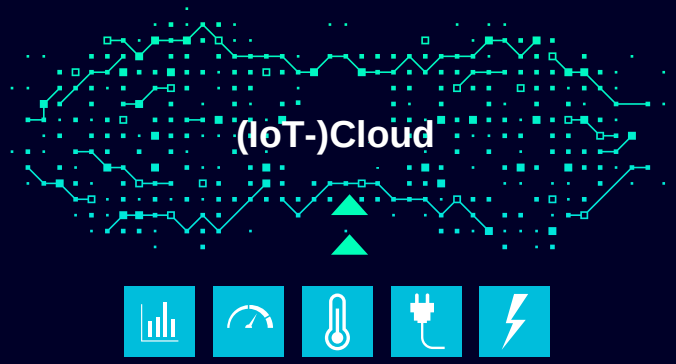
SIMARIS control as IoT Edge Gateway

- IoT gateway functionality
- Secure and reliable integration
- Local data concentrator
- Support to MQTT and MindConnect Lib
- Integration into public as well as private cloud systems

SIEMENS

SIMARIS control software application – for more process efficiency

Data management in the (IoT) cloud



Data management on-premise

Communication-capable devices and sensors

Low-voltage switchboard

Transfer data

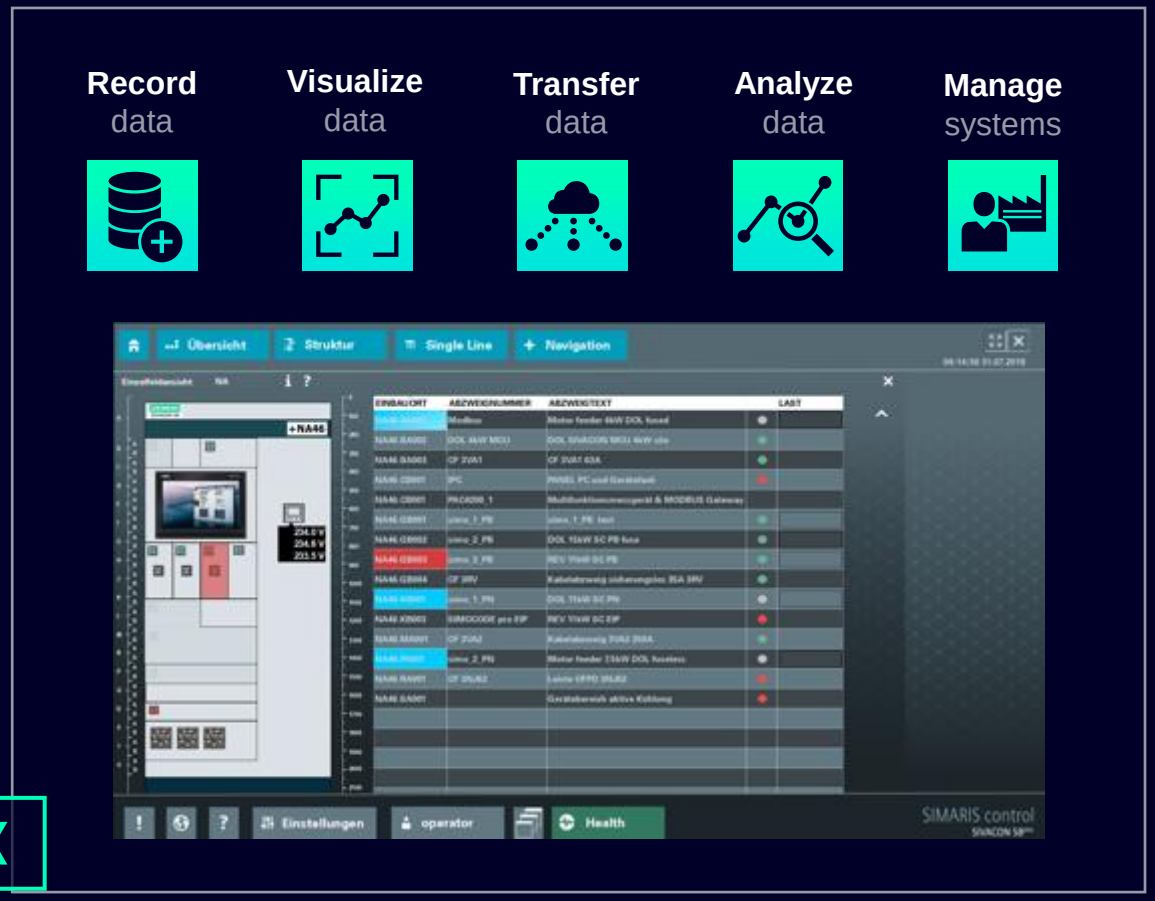
Analyze and manage

Visualize

Record data

SIEMENS

SIMARIS control software application – for more process efficiency



Simplified parameterization and diagnostics

- All tools on board
- Operating and diagnostic data perfectly visualized
- All documents in one place

More plant availability

- Continuous monitoring thanks to alarm and diagnostic information for predictive maintenance
- Rapidly informed via e-mail and SMS

Improved efficiency

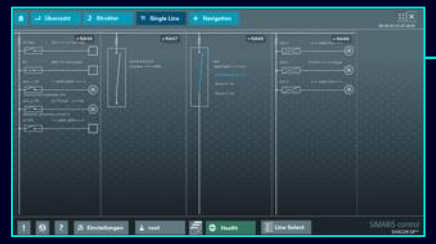
- Optimized energy transparency

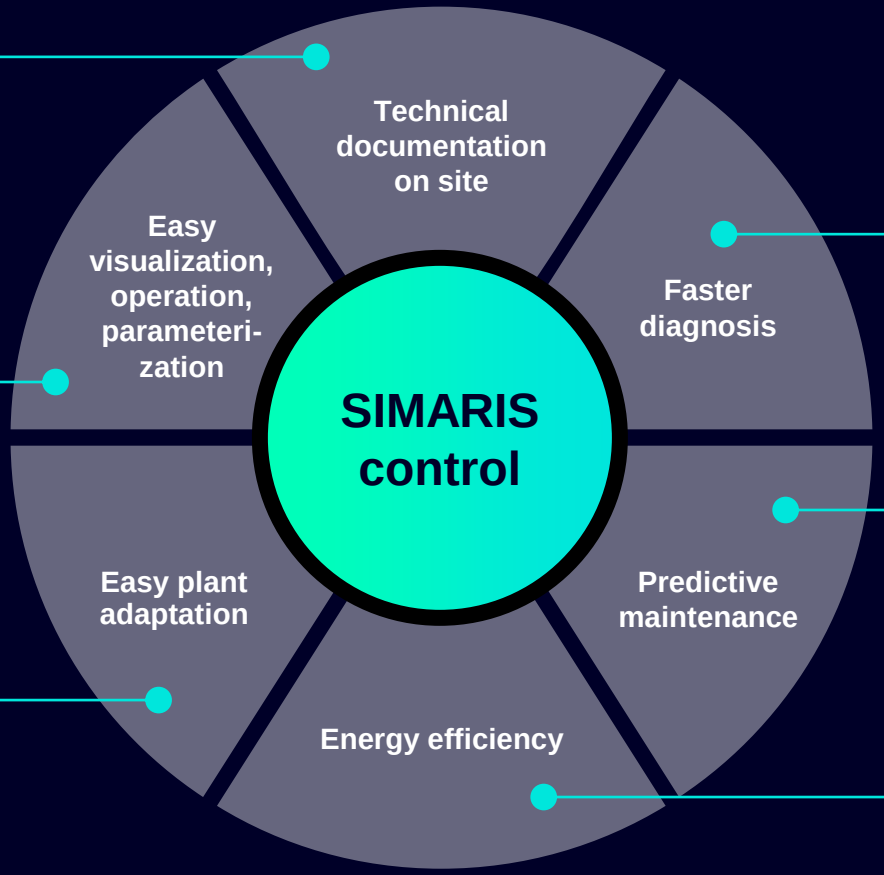
Optimum connectivity

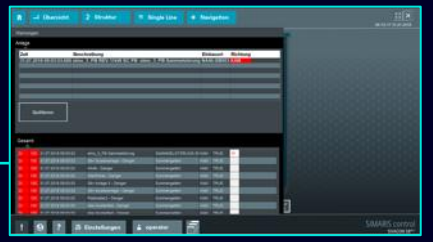
- Operation via a web client or mobile devices
- To higher-level automation and energy management systems and the cloud.

SIEMENS

Data management on site: Use the potential of on-premise data







SIEMENS

Data management on site: Use the potential of on-premise data

Intuitive operation

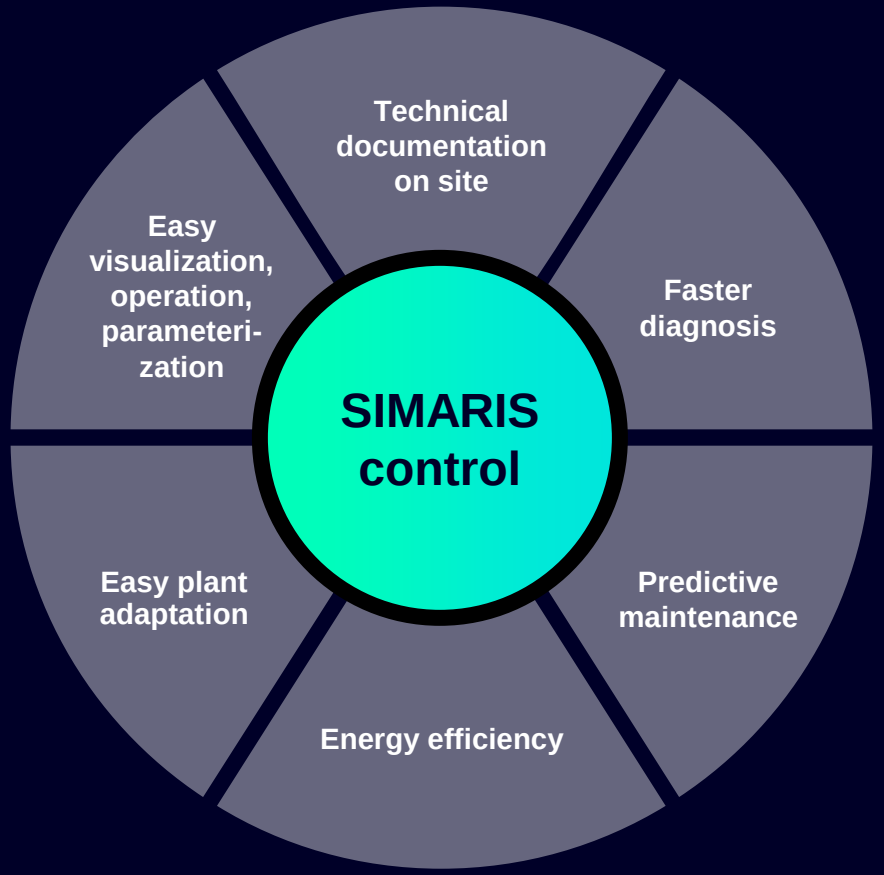
Optimized operation for touchscreen

Secure operation

Integrated user group management with differentiated authorizations

Make changes to the digital twin regarding runtime

Change the number and location of outgoing feeders, adapt outgoing feeder names and descriptions



Compatible diagnostic station

With various communication systems and network topologies

Autonomous diagnostic station

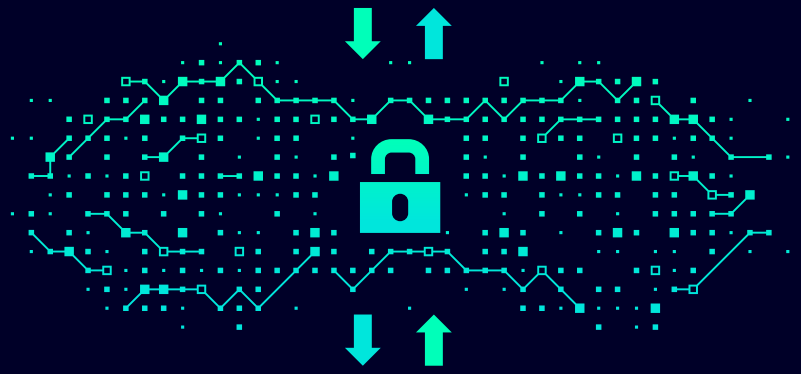
Not bound to higher automation levels, uses the switchboard communication system

High-performance diagnostic station

Standardized data model for Motor Control Center, uniform interface

SIEMENS

Future-oriented solution: data analyses in the cloud



Integration into energy management systems

Implement ISO 50001 measures –
sustainable energy efficiency

Integration into existing IT structures

Implementation of remote access and monitoring

Integration into cloud-based systems (IoT)

Company-wide analytical strategy

Integration into higher-level automation systems

Multi-system process optimization

SIEMENS

SIMARIS control summary

Key features

- Local control, monitoring, and parameterization
- On-premise data storage
- Diagnostic and health status
- Remote visualization
- Support to cloud protocols
- Integration with higher-level control system
- LV, MV, transformers, and peripheral devices

Benefits/value to customer

- Up to 40% more flexibility in local operations
- Up to 20% of memory space and resources saving
- Up to 90% easier and faster identification of incidents
- System availability anytime and from anywhere
- Easy integration into existing IT and cloud applications
- Parparallel independent operation with DCS/SCADA
- One system for all the assets in the substation


SIEMENS
SIVACON
SIVACON S8plus
Make more out of the energy data
SIVACON S8plus low-voltage switchboard

Flexibility, today and tomorrow

SIVACON S8plus low-voltage switchboard

SIEMENS

Flexible and scalable power distribution for your application

Flexible busbar system

- Variable busbar positions (top, rear) with rated current up to 7,000 A
- Installation of two independent main busbar runs possible up to 4,000 A

Adjustable system height

- Two standard heights and two base heights permit optimum adaptation to structural conditions

Customized circuit-breaker system

- Solution with 1, 2, or 3 circuit breakers in the cubicle

Modular frequency converter cubicle

- With SINAMICS G120 series frequency converters
- Tested in accordance with IEC 61439, arcing class B
- Modules from 0.55 kW to 132 kW

SIEMENS

Flexible and scalable power distribution for your application

Combination of different mounting designs

- Fixed-mounted feeders
- Plug-in and withdrawable design

High packing density

- With up to 48 feeders in withdrawable design in one outgoing feeder cubicle

Modular withdrawable design

- Compact small withdrawable units 150 x 150 mm
- Small withdrawable units up to 63 A
- Standard withdrawable units up to 630 A

Powerful motor management system

- With SIMOCODE pro for the process industry

SIEMENS

Safety without any ifs or buts

SIVACON S8^{plus} low-voltage switchboard

SIEMENS

Safety as an integral component – for all applications with your SIVACON S8plus

Safety for personnel and switchboard

thanks to testing in accordance with IEC 61439-2

High process safety level

thanks to quality and an integrated system approach

Observance of national regulations

Certification for ship/ offshore applications

Earthquake-tested version

for high seismic requirements

SIEMENS

Design verification

		Verification by means of test	Verification by means of calculation	Verification by means of design rules
1.	Strength of materials and parts	✓	–	–
2.	Degree of protection of enclosures	✓	–	✓
3.	Clearances and creepage distances	✓	✓	✓
4.	Protection against electric shock and consistency of protective conductor circuits	✓	✓ [1]	✓ [1]
5.	Installation of operational equipment	–	–	✓
6.	Internal electrical circuits and connections	–	–	✓
7.	Connections for conductors inserted from outside	–	–	✓
8.	Insulation properties	✓	–	✓ [2]
9.	Temperature-rise limits	✓	Up to 1,600 A	Up to 630 A[3]
10.	Short-circuit withstand strength	✓	conditional[3]	conditional[3]
11.	Electromagnetic compatibility (EMC)	✓	–	✓
12.	Mechanical function	✓	–	–

[1] Effectiveness of the switchgear and controlgear assembly in case of external faults
[2] Only impulse strength
[3] Comparison with an already tested design

SIEMENS

Tested under worst-case conditions

Switchgear and controlgear assembly design according to IEC 61439-2

Uniform design and operating concept

Application-conforming dimensioning of the switchgear and controlgear assembly

Prevention
of arc faults

Minimize your risk to ensure a high level of availability

Mitigation
of arc faults

Arc fault tested zones in compliance with IEC/TR 61641

Arc ignition protected zones in compliance with IEC/TR 61641

Extended arc fault protection in compliance with IEC/TS 63107

SIEMENS

Modular arc fault protection concept

Arcing class A
with limitation to area of the switchgear and controlgear assembly

Arcing class C
with limitation to the area of the cubicle

Arcing class C
with limitation to the area of the compartment

Extended arc fault protection
by means of insulation

Extended arc fault protection
by means of an active arc fault protection system (resettable)

SIEMENS

Arc resistance
Safety as an integral component

Safety as the top priority

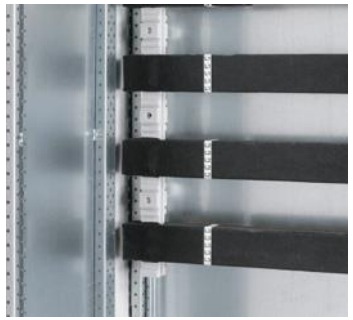
Protective protection measures

- High-quality insulation of live parts (for example, busbars), uniform and simple operation, integrated operating error protection, and reliable switchboard dimensioning

Reactive protection measures

- Arc-resistant hinge and locking systems, safe operation of withdrawable units or circuit breakers behind a closed door
- Protective measures on ventilation openings at the front, as well as arc barriers, an arc detection system, combined with fast interruption of arc faults

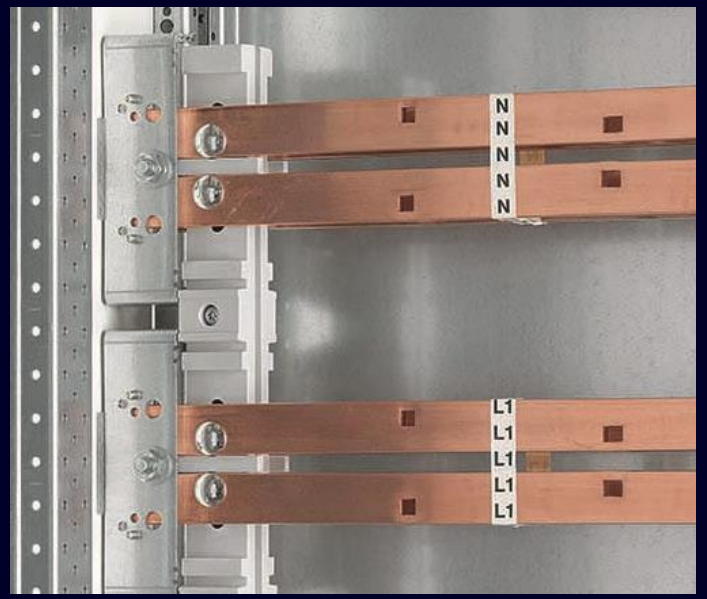
Elaborate arc fault tests under worst-case conditions on various cubicle types



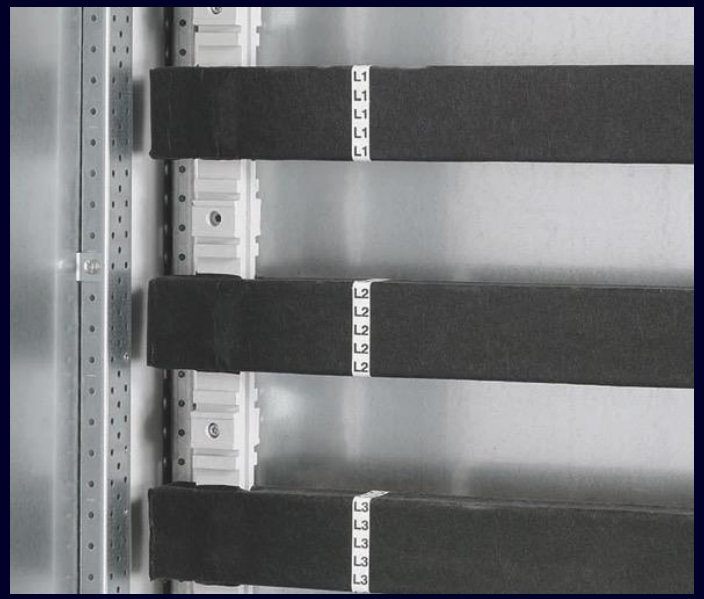


Arc resistance
Safety as an integral component

The **arc barrier** limits the impact on the cubicle if arcing occurs



Insulated **main busbars** prevent arcing



Tests under arcing conditions in accordance with IEC/TR 61641

SIEMENS


2 TURN
3 LONG STRAIGHT
4 TURN
10 AQD
9 IACD
8 S-CURVE
6 S-CURVE
5 TURN
1 CHECK POINT
7 CHECK POINT
Protects, when it really counts –
The internal arcing protection of SIVACON S8plus

SIEMENS

Arc resistance
High-level active protection

Design verified and internal arc classified
comprehensive solution up to 100 kA

Testable – up to 100 test cycles

Reusable – two full-load operations under fault conditions

Continuous self-monitoring
of system condition

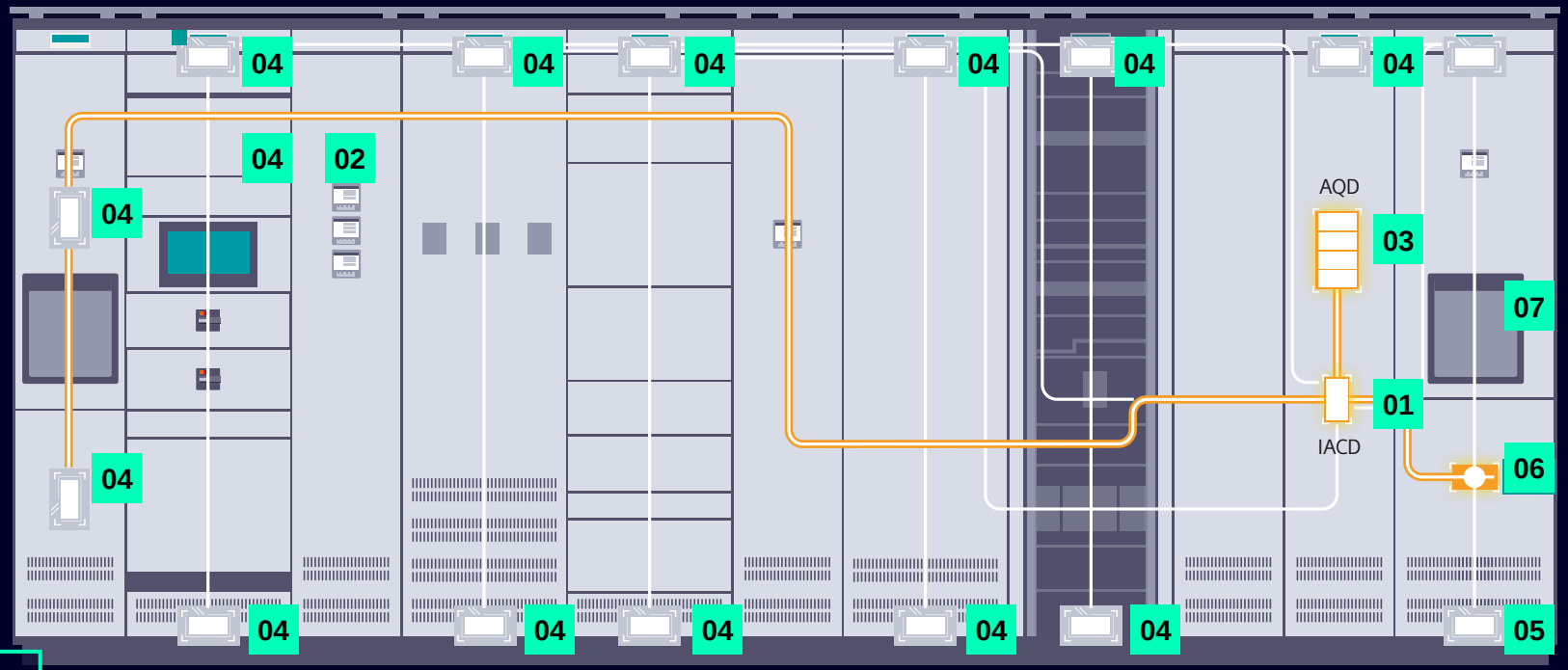
Increased protection for personnel and switchboard

Improved plant availability

SIEMENS

Arc resistance
Safety as an integral component

Arc detection – integration and testing in accordance with IEC/TS 63107



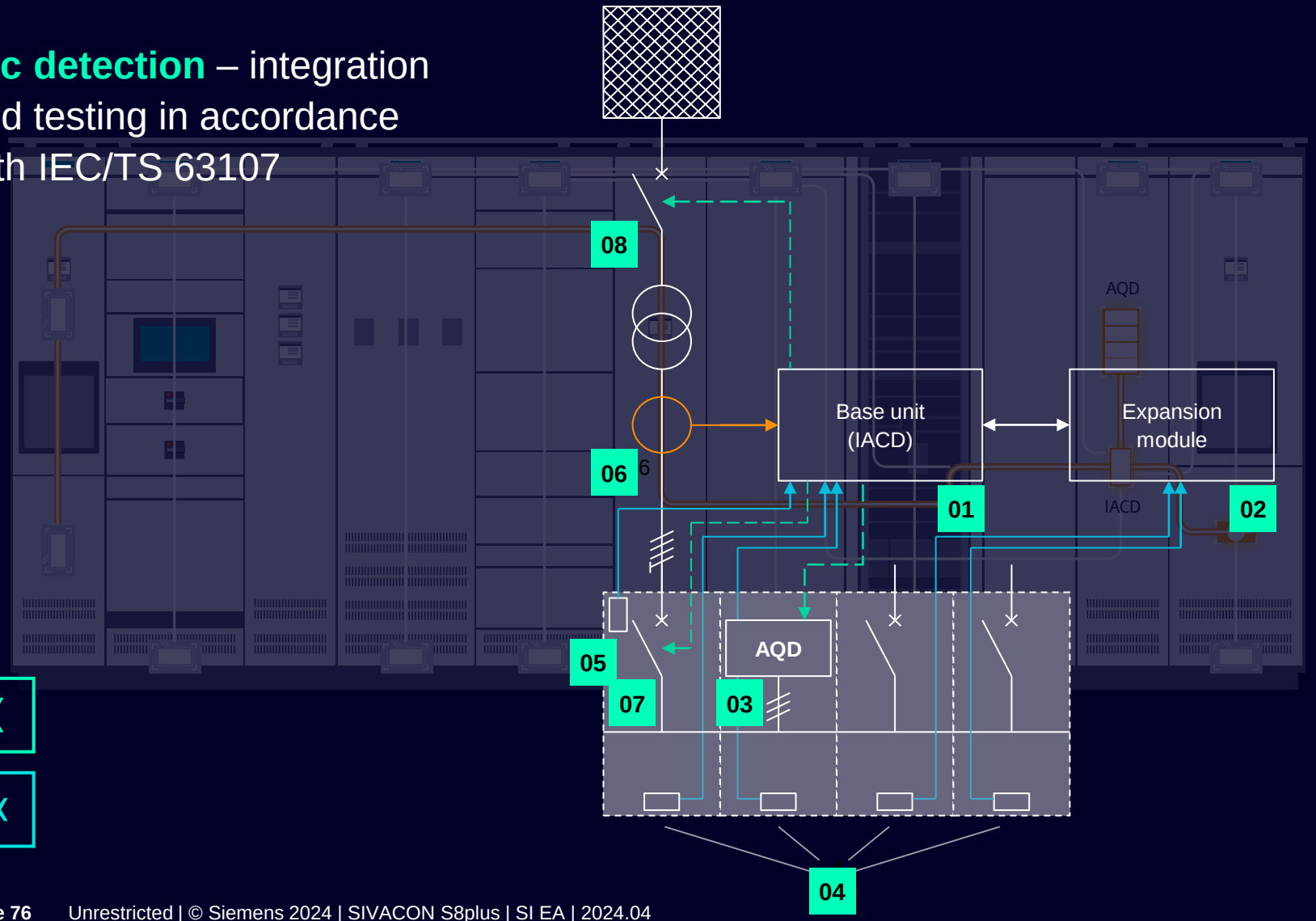
Components

- **01** AQ110 base unit for 12 sensors (IACD)
- **02** AQ101 (D/P) expansion modules (for another 12 sensors per module)
- **03** Arc quenching device / short-circuiting device (AQD)
- **04** Optical sensors (light)
- **05** Combined sensor (light and pressure)
- **06** Current transformer (in the incoming feeder cubicle)
- **07** Circuit breaker (incoming circuit) with shunt release 5% operating time

SIEMENS

Arc resistance
Safety as an integral component

Arc detection – integration and testing in accordance with IEC/TS 63107



Components

- **01** AQ110 base unit for 12 sensors (IACD)
- **02** AQ101 (D/P) expansion modules (for another 12 sensors per module)
- **03** Arc quenching device / short-circuiting device (AQD)
- **04** Optical sensors (light)
- **05** Combined sensor (light and pressure)
- **06** Current transformer (in the incoming feeder cubicle)
- **07** Circuit breaker (incoming circuit) with shunt release 5% operating time
- **08** MV circuit breaker (feeder)

SIEMENS


S8plus
Extended protection against internal arcing
SIVACON S8plus low-voltage switchboard

Safe solution
for seismic requirements and vibrations

Safety-tested seismic upgrade

- Switchgear remains functional during earthquake
- Switchgear remains functional after earthquake
- Strength

SIEMENS

Safe solution
for seismic requirements and vibrations

Certification for ships and offshore platforms

- Certification by international classification societies (DNV GL)
- Protection against salty atmosphere with high atmospheric humidity (risk of corrosion)
- Protection against vibration loads on the switchboard caused by swells or ship’s motors

SIEMENS

System-based power distribution

SIVACON S8 low-voltage switchboard and SIVACON 8PS busbar trunking systems

SIEMENS

SIVACON S8plus and SIVACON 8PS – **System-based power distribution**

A **smart power distribution system** provides the interface between production and power.

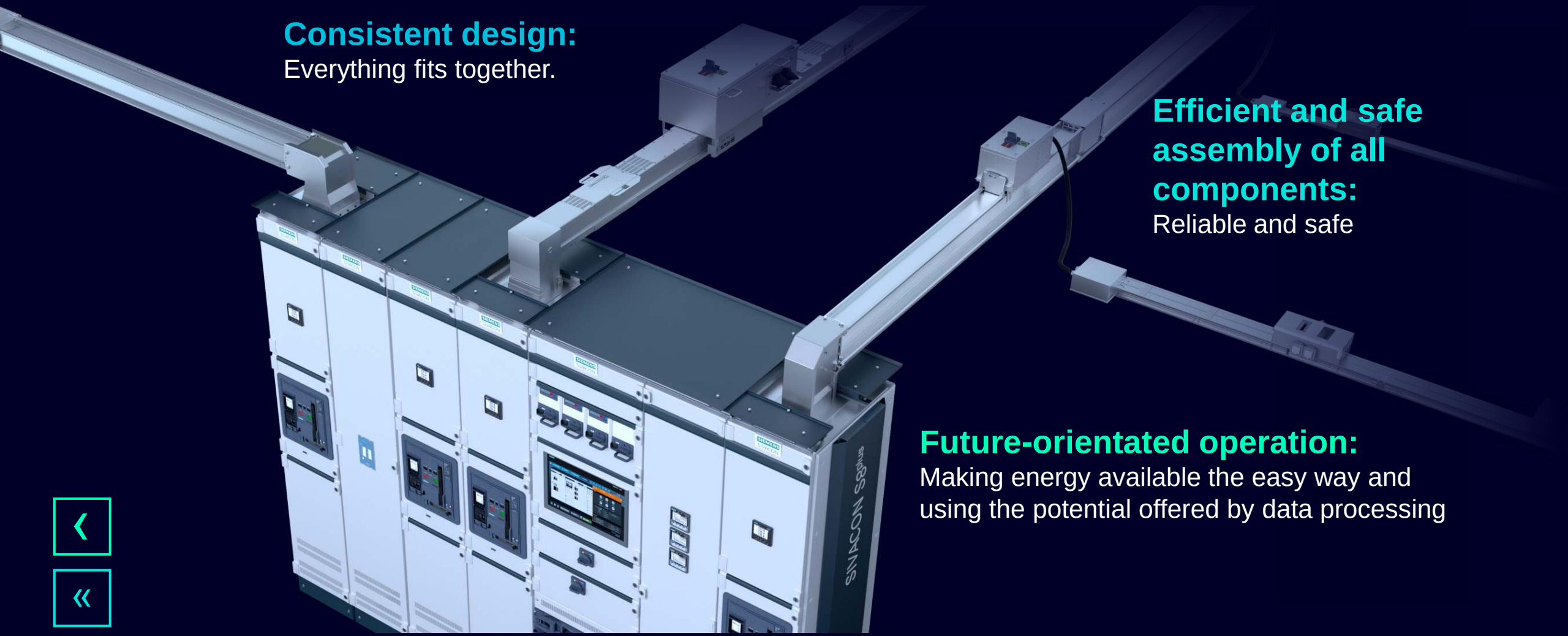
Its **reliability and efficiency** underpin the cost-efficiency of all processes.

It is the **backbone of all operational and production processes.**

Make systematic use of the benefits of digitalization – for efficient design and installation, and future-oriented operation.

SIEMENS

SIVACON S8^{plus} and SIVACON 8PS –
The benefits of system-based power distribution



Consistent design:
Everything fits together.

Efficient and safe assembly of all components:
Reliable and safe

Future-orientated operation:
Making energy available the easy way and using the potential offered by data processing

SIEMENS

SIVACON S8plus and SIVACON 8PS –
The benefits of system-based power distribution

Everything from a single source

One manufacturer, one contact, one product family – and thus one clear interface.

Rapid assembly

The busbar trunking systems fit perfectly and easily into the switchboard – factory-ready, tested, and safe.

Fully coordinated documentation

All relevant technical data is comprehensively documented – to ensure maximum efficiency.

More transparency

Smart solutions in use. Easily transmit current and data via busbar. Smartly manage data in HMI and SCADA systems – on-premise or in cloud-based solutions.

Shared tool support

From planning to installation and operation.

Type testing

Switchboards and busbar trunking systems are comprehensively tested together.

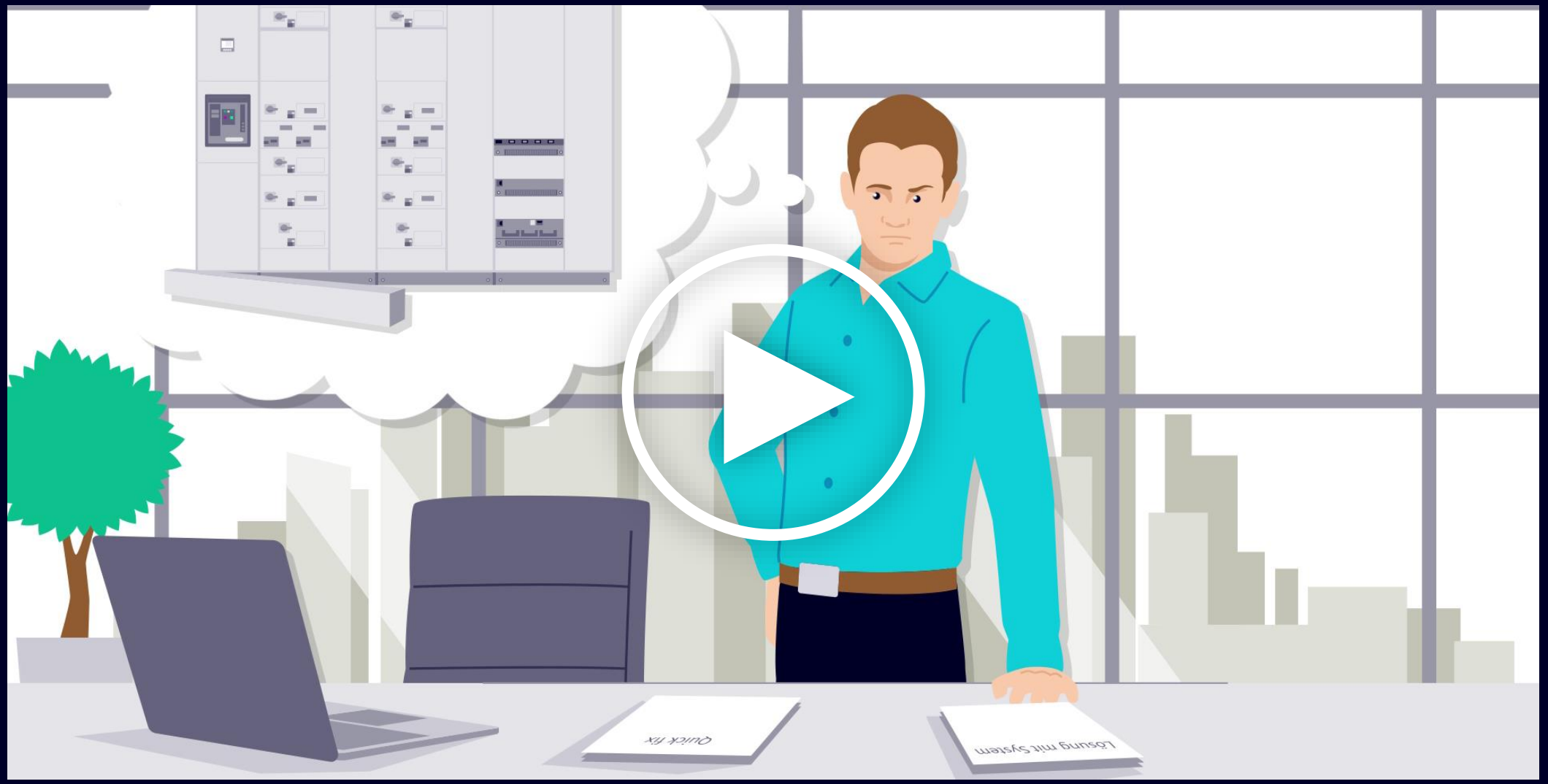
Maintenance-free systems

The innovative connection system ensures the busbar runs, the connection to the switchboard, as well as the connections between the busbars and the switchboard are maintenance-free.

Substantial cost saving

Overall costs are lower, since installation and assembly are faster and easier.

SIEMENS



SIEMENS

System overview: cost-efficient design, high quality

SIVACON S8 low-voltage switchboard

SIEMENS

Many applications – one power distribution system

Power distribution boards

Infrastructure (e.g. building control technology)

- To switch and protect electrical circuits

Data centers

- For Information and Communication Technology (ICT) and the infrastructure

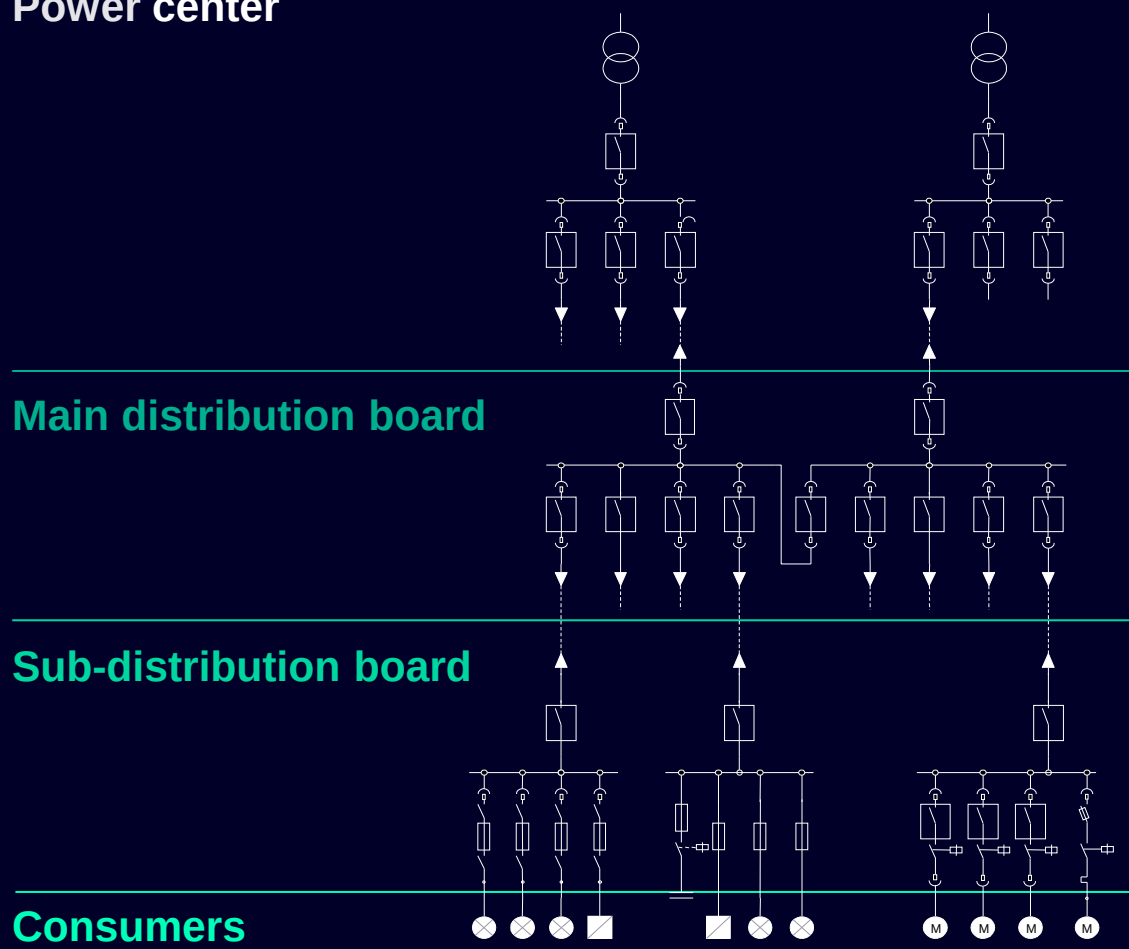
Motor Control Centers

Process industry (e.g. chemical, oil and gas)

- To control and protect motors, valves, etc.

SIEMENS

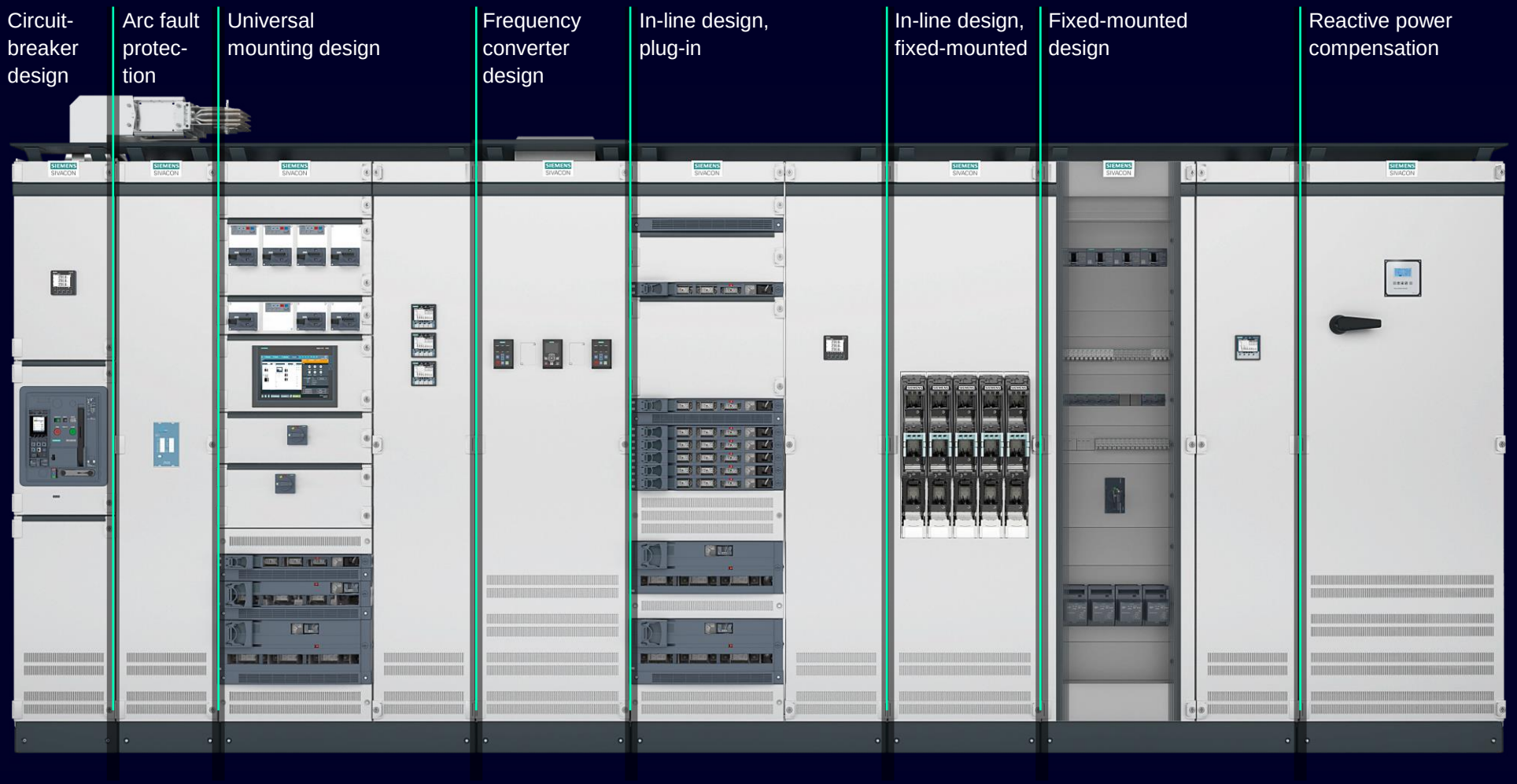
Many applications – one power distribution system
SIVACON S8plus low-voltage switchboard



Motor Control Center

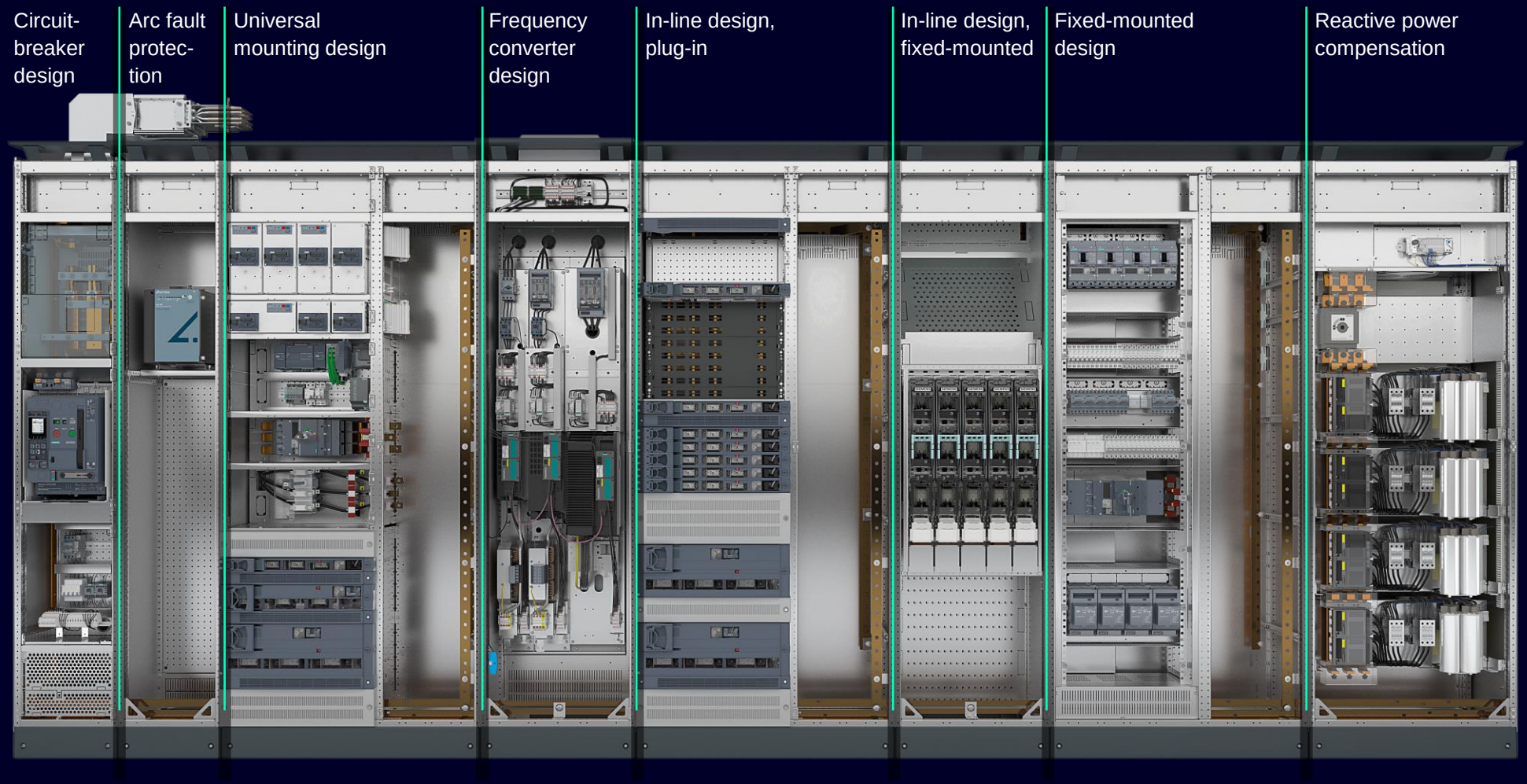
SIEMENS

System overview
Cubicle design, external



SIEMENS

System overview
Cubicle design, internal



System overview

	Circuit-breaker design	Arc fault protection design	Universal mounting design	Frequency converter design	In-line design, plug-in	In-line design, fixed-mounted	Fixed-mounted design	Reactive power compensation
Mounting design	• Fixed-mounted • Withdrawable design	• Fixed-mounted	• Withdrawable design • Fixed-mounted design with compartment doors • Plug-in design	• Fixed-mounted	• Plug-in design	• Fixed-mounted	• Fixed-mounted design with front covers	• Fixed-mounted
Functions	• Incoming feeder • Outgoing feeder • Transversal coupler	• Extended arc fault protection	• Cable feeders • Motor feeders (MCC)	• Control of pumps, fans, compressors	• Cable feeders	• Cable feeders	• Cable feeders	• Central reactive power compensation
Rated values	• up to 6,300 A	• Short-circuit withst. strength up to 100 kA at 690 V	• up to 630 A • up to 250 kW	• up to 132 kW	• up to 630 A	• up to 630 A	• up to 630 A	• up to 500 kVAr unchoked/choked
Type of connection	front or rear	–	front or rear	front	front	front	front	front
Cubicle width (mm)	400 | 600 | 800 | 1,000 | 1,400	400	600 | 1,000 | 1,200	600, 800, 1,000	1,000 | 1,200	600 | 800 | 1,000	1,000 | 1,200	800
Internal separation	Form 1, 2b, 3a, 4b, 4b type 7 (BS)	4b	Form 2b, 3b, 4a, 4b, 4b type 6 (BS), 4b type 7 (BS)	Form 1, 2b	Form 3b, 4b	Form 1, 2b	Form 1, 2b, 4a, 4b	Form 1, 2b
Busbar position	top, rear-top, rear-bottom	top, rear	top, rear	none, top, rear	top, rear	rear	top, rear	none, top, rear

SIEMENS

Cubicle design
Smart combination of cost-efficient design and high quality

- **Personnel safety**
  thanks to patented door locking system
- **Arrangement of busbar positions**
  to suit the application
- **High level of flexibility**
  thanks to variable busbar systems
- **Robust version**
  with high surface quality

Enclosure

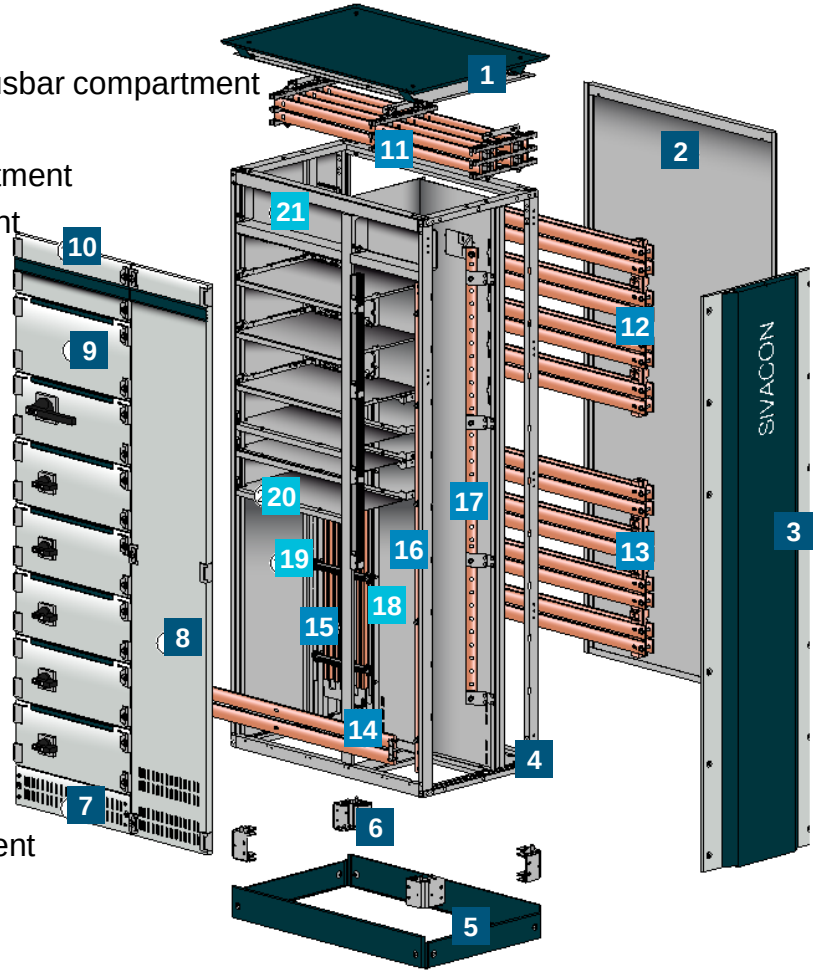
1 Roof plate (IPX1)
2 Rear wall
3 Design side wall
4 Frame
5 Base cover
6 Base
7 Base compartment cover, ventilated
8 Cubicle door, ventilated
9 Compartment door
10 Head compartment door

Internal separation

18 Device compartment / busbar compartment
19 Cubicle to cubicle
20 Compartment to compartment
21 Cross-wiring compartment

Busbars

11 Main busbar (L1 ... L3, N) – top
12 Main busbar (L1 ... L3, N) – rear-top
13 Main busbar (L1 ... L3, N) – rear-bottom
14 Main busbar (PE) – bottom
15 Distribution busbar (L1 ... L3, N) – device compartment
16 Distribution busbar (PE) – cable compartment
17 Distribution busbar (N) – cable compartment



SIEMENS

Cubicle design
Smart combination of cost-efficient design and high quality

Technical data

Frame

Door opening angle	125°, 180° with stand-alone installation
Frame height (without base)	2,000, 2,200 mm
Base height (optional)	100, 200 mm
Degree or protection acc. to IEC 60529	IP30, IP31, IP40, IP41, IP43, IP54

Main busbars

Rated current	up to 7,010 A
Rated peak withstand current (I_{pk})	up to 330 kA
Rated short-time withstand current (I_{cw})	up to 150 kA

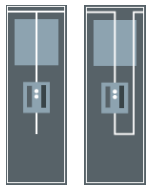
SIEMENS

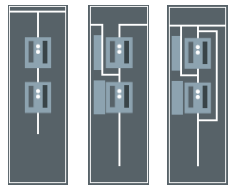
Circuit-breaker design
Safe, efficient, and compact

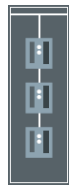
Safe, efficient, and compact – wherever more current is needed

- Cost-effective design for applications with higher power requirements
- Safety provided through connected, test, and disconnected positions with the door closed
- Optimum cubicle width for every circuit-breaker size
- Ideal dimensions for cable connection, in every size
- Design verified connection to SIVACON 8PS busbar trunking systems

One circuit breaker per cubicle (FCB1)	Two circuit breakers per cubicle (FCB2)	Three circuit breakers per cubicle (FCB3)
Fixed-mounted, withdrawable design	Withdrawable design	Fixed-mounted, withdrawable design
Incoming feeder, outgoing feeder, transversal or longitudinal coupler	Incoming feeder, outgoing feeder, longitudinal coupler, bypass	Incoming feeder, outgoing feeder







SIEMENS

Circuit-breaker design
Safe, efficient, and compact

Technical data	One circuit breaker per cubicle (FCB1)	Two circuit breaker per cubicle (FCB2)	Three circuit breaker per cubicle (FCB3)
Mounting design	Fixed-mounted, withdrawable design	Withdrawable design	Fixed-mounted, withdrawable design
Functions	Incoming feeder, outgoing feeder, transversal or longitudinal coupler	Incoming feeder, outgoing feeder, longitudinal coupler, bypass	Incoming feeder, outgoing feeder
Rated current of the circuit breaker I_n	3WA air circuit breakers (ACB) from 630 A to 6,300 A, 3 and 4-pole 3VA molded-case circuit breakers (MCCB), from 630 to 1,000 A	3WA air circuit breakers (ACB) from 630 A to 2,500 A (3,200 A bypass), 3 and 4-pole, size 1 and 2	3WA air circuit breakers (ACB) from 630 A to 1,600 A, 3 and 4-pole size 1
Type of connection	Cable/busbar connection at the front or rear	Cable/busbar connection at the front	Cable connection at the rear
Connection position	top or bottom, depending on the position of the cable or busbar connection compartment		
Cubicle width (mm)	400 up to In = 2,000 A 600 up to In = 3,200 A 1,000 up to In = 6,300 A	600, 800, 1,000	600
Internal separation	Form 1, 2b, 3a, 4b, 4 type 7 (BS)	Form 1, 2b, 3a, 3b, 4b	Form 1, 3a, 3b
Busbar position	top, rear-top, rear-bottom	rear-top, rear-bottom	top

SIEMENS

Circuit-breaker design
Designed for efficiency

- **Compact version**
  400 mm wide cubicle with 3WA air circuit breaker up to 2,000 A
- **Cost-efficient installation**
  600 mm wide cubicle for up to three circuit breakers
- **Energy-efficient cooling**
  Forced cooling (optional) to reduce derating of the circuit breaker, without compromising cubicle properties such as the degree of protection or form of internal separation

SIEMENS

Circuit-breaker design
Flexible for individual requirements

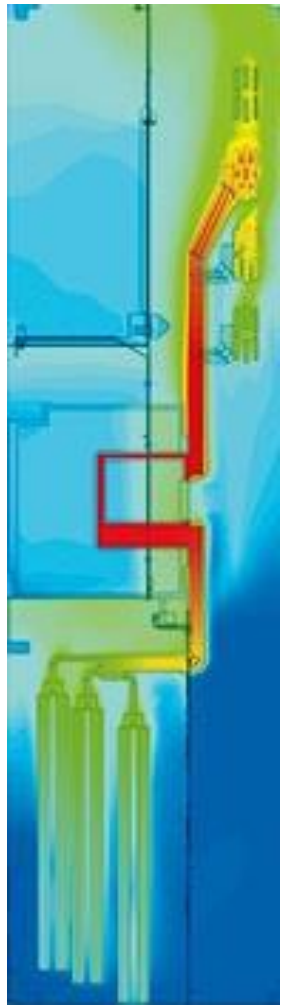
- **Separate functional compartments**
  Separate functional compartments.
- **Optimal connection design**
  Optimal connection conditions in cable or busbar connection compartment for every size of circuit breaker.
- **Ideal space conditions**
  Switching and protection devices for control and monitoring are perfectly accommodated in the auxiliary device compartment.
- **Tested safety**
  Design verified connection with cable or SIVACON 8PS busbar trunking systems.

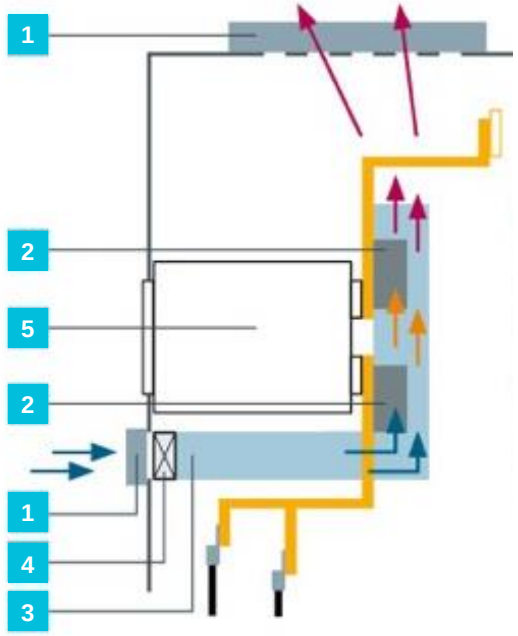
SIEMENS

Circuit-breaker design
Higher ratings through energy-efficient cooling

Patented forced cooling technology for cubicles in circuit-breaker design and in universal mounting design
(Motor Control Centers, MCC)

- Higher ratings through energy-efficient cooling
- Safe and long service life for sensitive electronic equipment
- Full redundancy improves safety and functionality
- Design verified in accordance with IEC 61439

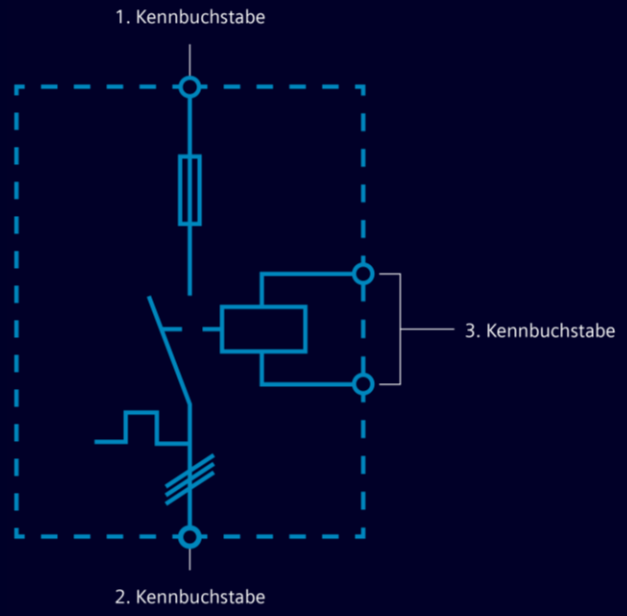




1 Filter (only for IP54)
2 Heat sink
3 Air duct
4 Fan
5 Circuit breaker

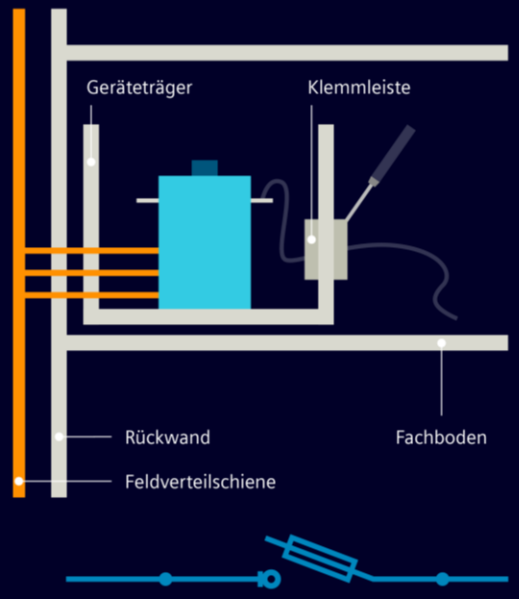
SIEMENS

Universal mounting design
Safe, flexible and cost-efficient



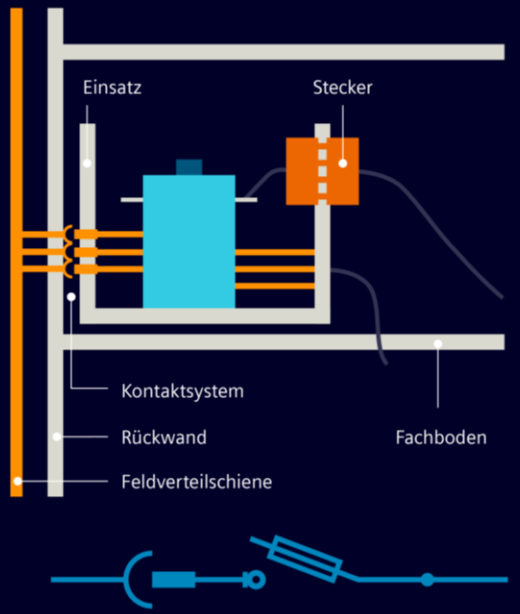
Fixed-mounted design – modular and cost-efficient

Festeinbau (FFF)



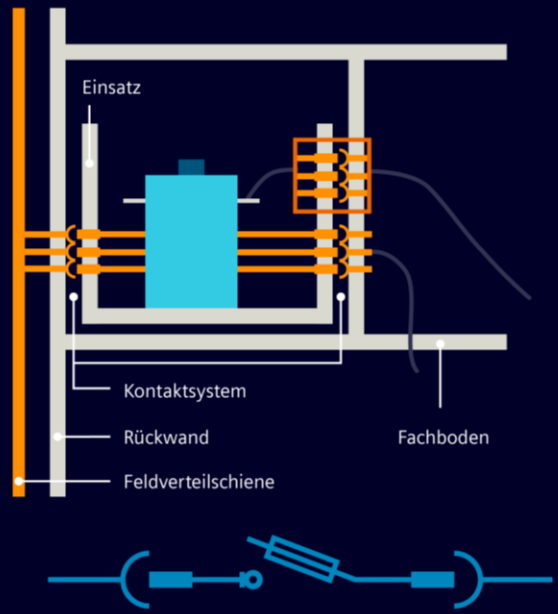
Plug-in design – flexible modifications

Stecktechnik (WFD)



Withdrawable design – ergonomic and compact

Einschubtechnik (WWW)



Kennbuchstaben:
F für feste Verbindungen ***D*** für lösbare Verbindungen ***W*** für geführte Verbindungen

SIEMENS

Universal mounting design
Safe, flexible and cost-efficient

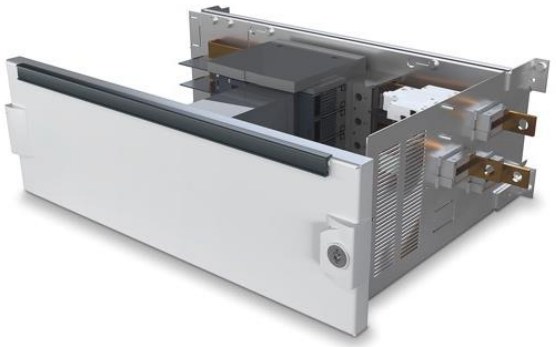
Technical data

Mounting design	Withdrawable design, fixed-mounted design with compartment doors, plug-in design
Functions	Cable feeders up to 630 A Motor feeders up to 250 kW (at 400 V)
Type of connection	front, rear
Cubicle width (mm)	600, 1,000, 1,200
Internal separation	Form 2b, 3b, 4a, 4b, 4 type 6, 4 type 7 (BS)

SIEMENS

Universal mounting design
Fixed-mounted – modular and cost-efficient

- Circuit breaker or switch disconnector with fuses mounted on modular device holders
- Cable connection directly on the device, or on special connection terminals in the cable connection compartment for higher requirements
- For individual expansion, the system offers freely assignable device holders



SIEMENS

Universal mounting design
Plug-in design – flexible modifications

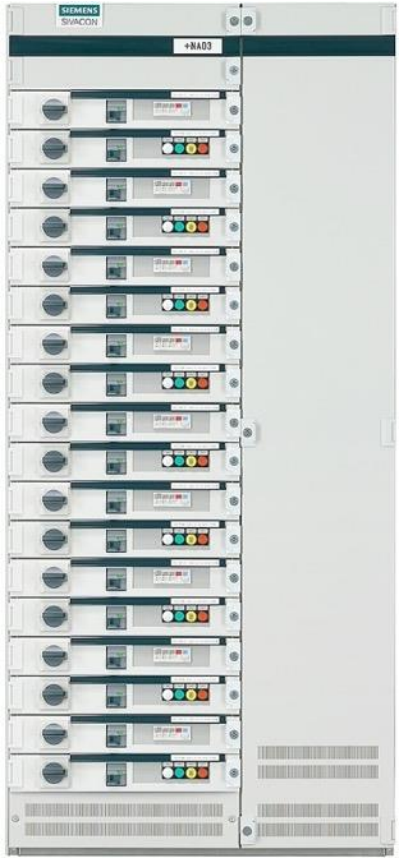
- Switch disconnectors with 3NJ63 or SASILplus (JEAN MÜLLER) fuses can be installed in the bottom 600 mm of the device compartment.
- Plug-in contact on supply/line side to replace or retrofit the switch disconnector without de-energizing the cubicle.

SIEMENS

Universal mounting design
Withdrawable design – ergonomic and compact

- Withdrawable units are easy to modify or retrofit without de-energizing the cubicle
- Optimum adaptation to required performance, optimized system size, and very high packing density by choosing between small withdrawable units and standard withdrawable units
  - Standard withdrawable units from 100 mm height
  - Small withdrawable units of size ¼ (up to four withdrawable units per compartment) and ½ (up to two withdrawable units per compartment)
  - Small withdrawable units for space-saving design

up to 48 small withdrawable units



up to 18 standard withdrawable units

SIEMENS

Universal mounting design
Safe, flexible and cost-efficient

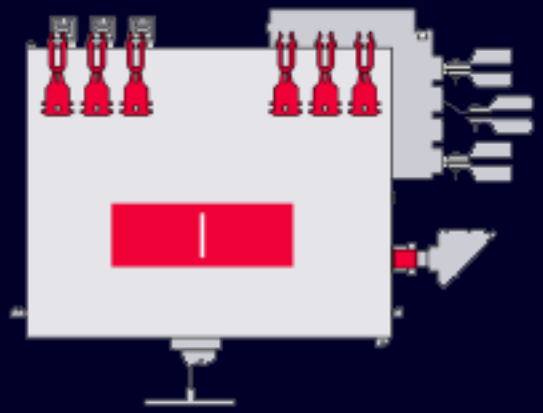
Ideal if there is little space available

- High level of flexibility and efficiency by having combinable functional assemblies in one cubicle
- Space-optimized modular design
- Personnel safety even in the event of a fault, thanks to closed front doors in all withdrawable unit positions (connected, test, disconnected positions)
- Ideal dimensions for cable connection, in every size
- Long service life thanks to patented low-wear contact system

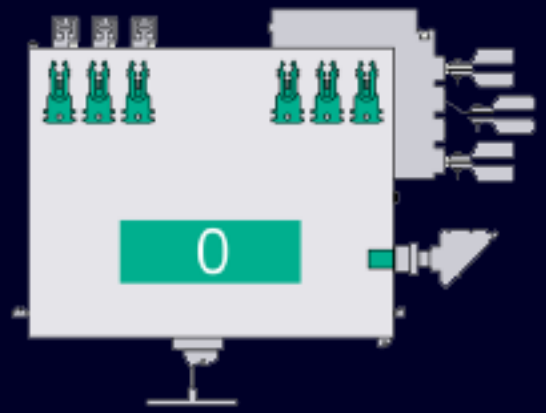
SIEMENS

Universal mounting design
Withdrawable design – safe operation of the withdrawable units

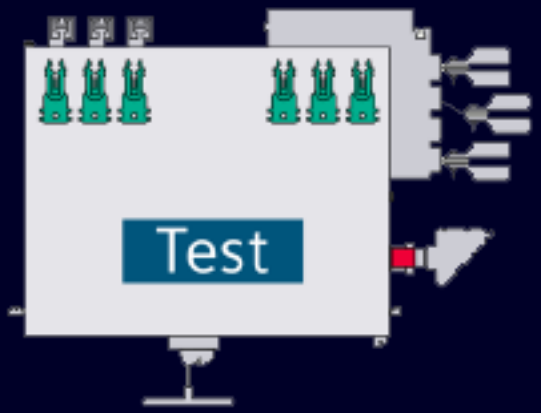
Connected position
In the **connected position**, both the power and the control contacts are closed



Disconnected position
Withdrawable units in **disconnected position** have maximum isolating distances on the incoming, outgoing, and control sides



Test position
The **test position** allows for no-load testing of the withdrawable units



SIEMENS

SIMOCODE pro motor management **– the flexible and modular motor management system for motors with constant speeds**

Multifunctional, electronic, full motor protection

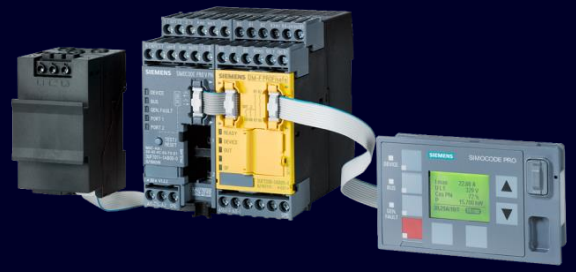
Safety functions for safe system operation

Communication via PROFIBUS DP, PROFINET I/O and OPC UA, Modbus RTU, and Ethernet/IP

Detailed operational, service, and diagnostic data

Flexible functions for motor control

Protection against pumps running dry in accordance with ATEX criteria



SIEMENS

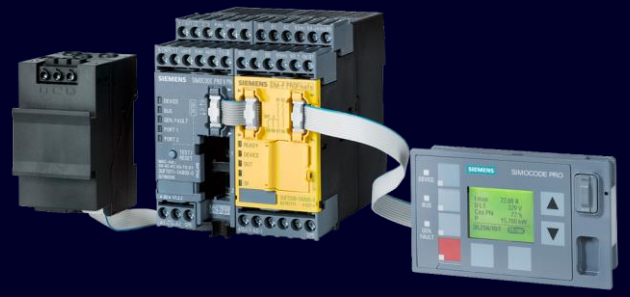
SIMOCODE pro motor management – **the right version for all applications**

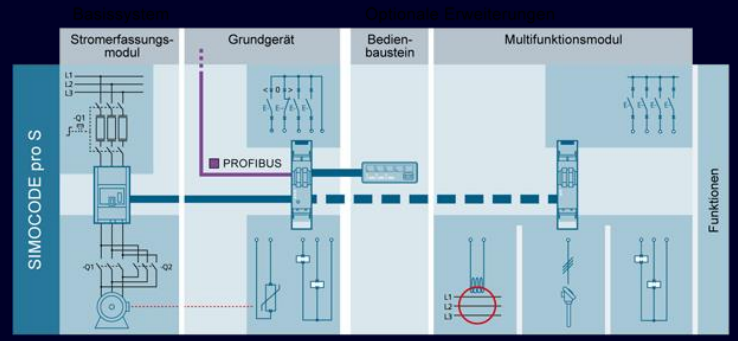
General Performance is the low-price, multifunctional entry level into motor management, with communication via:

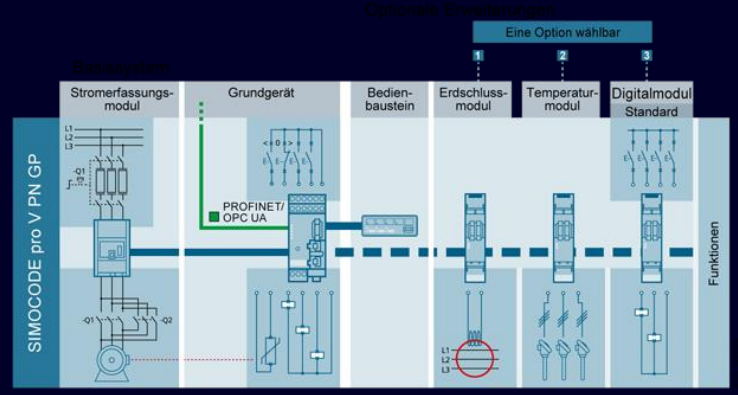
- PROFIBUS DP
- PROFINET IO

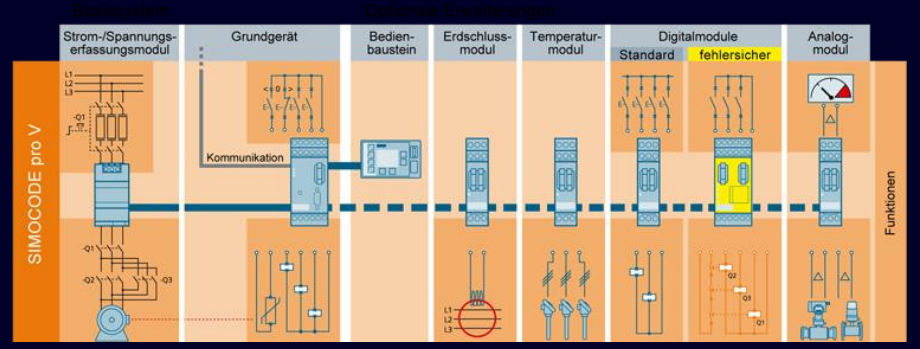
High Performance is the most powerful motor management system on the market, with communication via:

- PROFIBUS DP
- PROFINET IO
- Ethernet/IP
- Modbus RTU



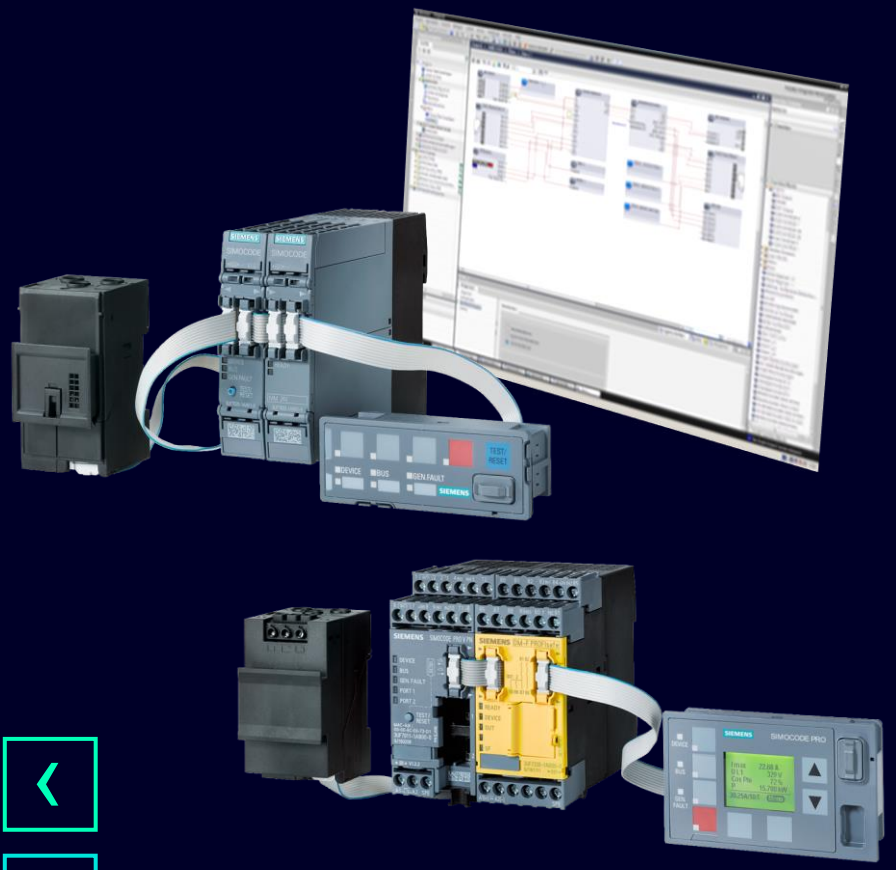






SIEMENS

SIMOCODE pro motor management –
Looks after your motor. And keeps an eye on the process.



Feature/function	Benefit
Multifunctional, electronic **full motor protection**, independent of the automation system	**Complete motor protection** with a single system, independently of higher-level control systems
Safely powers motors **down**	**Matching integration** also for safety-related requirements
Integrated **control functions**	**Reduced wiring effort** and fewer components for motor control
Detailed **operational, service, and diagnostic data**	**Meaningful information** on the production process at any time
Open communication via PROFIBUS , PROFINET, Modbus and Ethernet/IP	**Flexible use** with controllers and distributed control systems of all kinds
Open, multivendor communication via OPC UA	Direct data sharing, e.g. with HMI panels / SCADA systems, and integration into clouds (e.g. MindSphere)

SIEMENS

SIMOCODE pro

Smart connection between automation level and motor

Automation

Operation and monitoring | Engineering | Maintenance | Power management

Ethernet

PROFINET IO

PROFIBUS DP

- Process control
- Management

- Maintenance
- Power management

Switchboard

SIMOCODE pro V

SIMOCODE pro S

Application

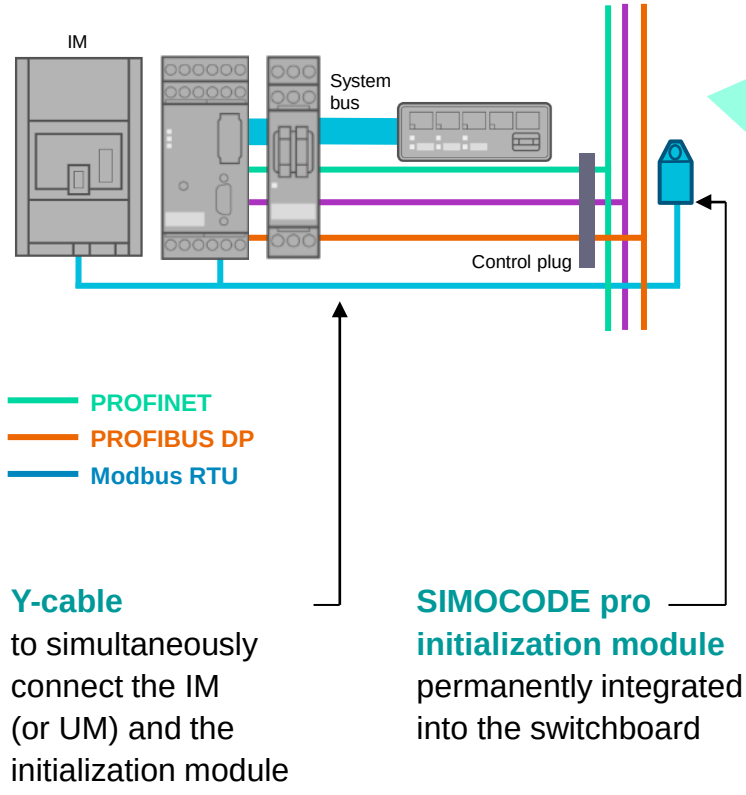
SIEMENS

SIMOCODE pro – initialization module

Replacing an MCC motor feeder with minimum system downtime

- Device parameters and addresses are automatically saved in the initialization module in the Motor Control Center, and loaded (initialized) from there
- No special knowledge is required to swap an MCC motor feeder for SIMOCODE pro
- Manual addressing and parameterization are no longer necessary, which simplifies operation of the switchboard

pro S/pro V base unit with expansion



Y-cable
to simultaneously connect the IM (or UM) and the initialization module

SIMOCODE pro initialization module
permanently integrated into the switchboard

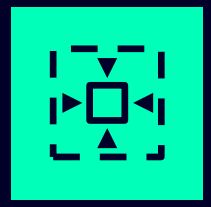
SIEMENS

SIMOCODE pro
CAPEX relevance – project execution

Benefits of communications connection

Ethernet networking of SIMOCODE pro and other smart devices dramatically reduces installation costs

- Line structure with integrated ports is easier to install
- Plug-and-play saves > 50% time



Benefits of space-saving

Structures using SIMOCODE pro offer major opportunities to save:

- Weight-saving for each withdrawable unit
- Space and weight-saving for each cubicle

SIEMENS

SIMOCODE pro

OPEX relevance – asset operation

Benefits of mobile data availability

Diagnostic and operating data, combined with a digital twin, reduce engineering effort

- Asset data is kept secure via OPC UA in the Cloud

Benefits of Big Data

Scalable and secure data maximizes asset lifecycle and system availability

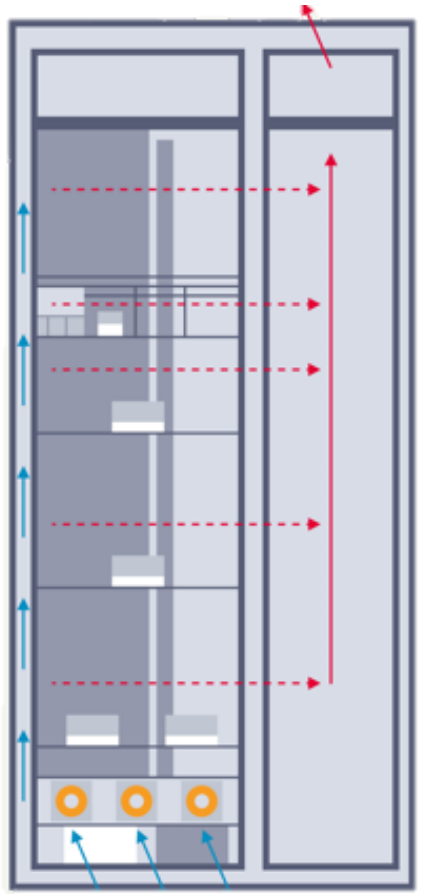
- Environment
  - Motor temperature
  - Ambient temperature
- Operational data
  - Current and voltage
  - Performance
- Maintenance
  - Operating hours
  - Number of motor starts

SIEMENS

Universal mounting design
Higher ratings through energy-efficient cooling

Patented forced cooling technology for cubicles in circuit-breaker design and in universal mounting design (Motor Control Centers, MCC)

- Higher ratings through energy-efficient cooling
- Safe and long service life for sensitive electronic equipment
- Full redundancy improves safety and functionality
- Design verified in accordance with IEC 61439



SIEMENS

Frequency converter design
Specifically for the demands of industry

Ideal for cost-efficient and safe power supplies to continuous or highly dynamic pumps, fans, and compressors

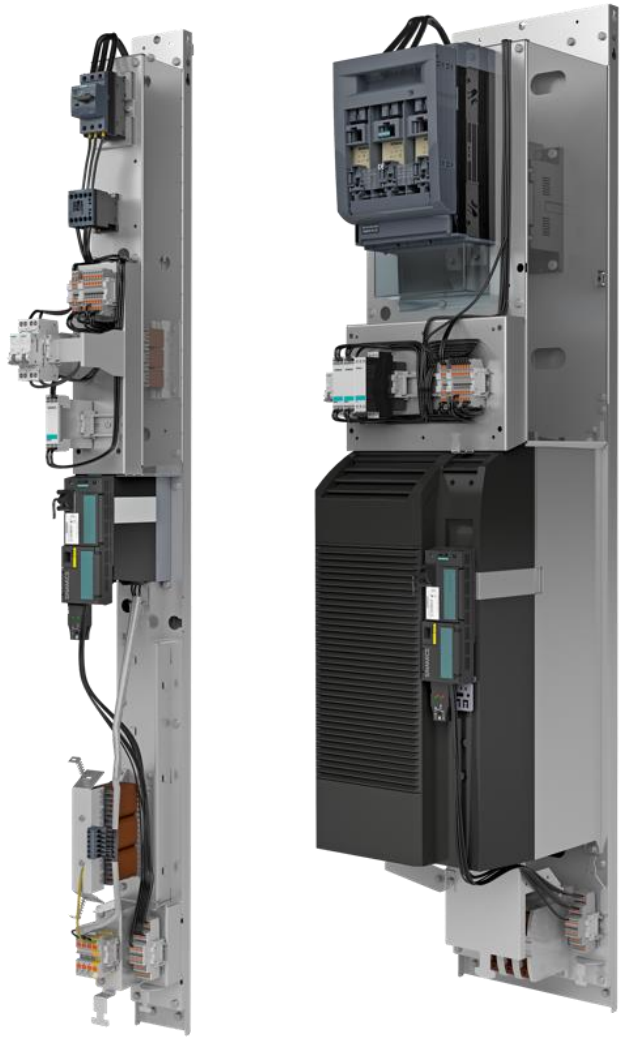
- More cost-efficient thanks to flexible solution with standardized modules for your application
- Improved safety thanks to design verification as per IEC 61439 and testing in accordance with IEC/TR 61641
- Space-saving compared to conventional design
- Low-wear contact system

SIEMENS

Frequency converter design
Specifically for the demands of industry

Technical data

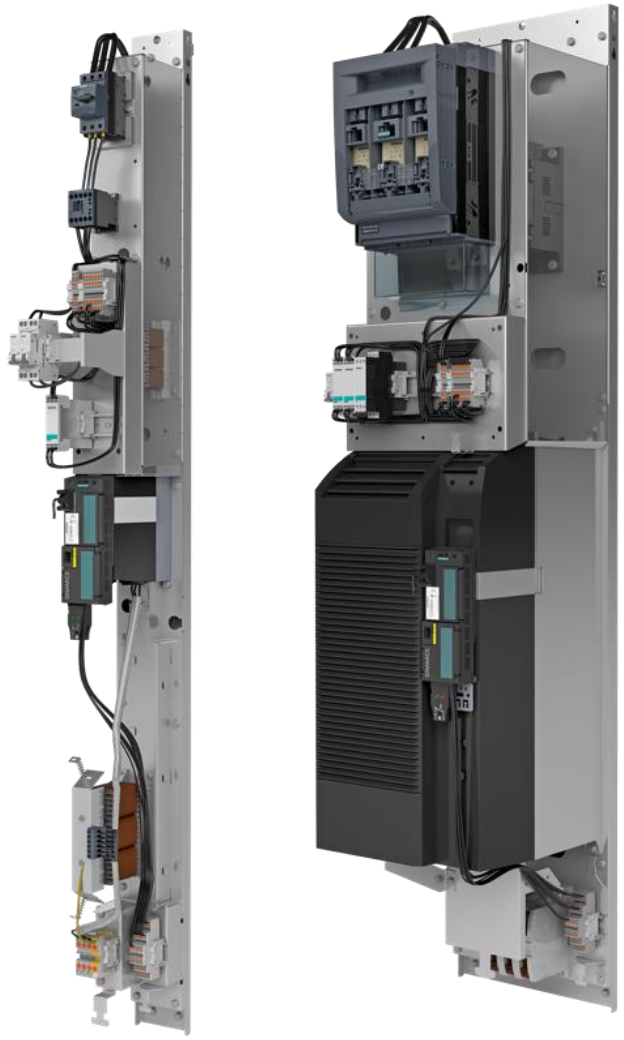
Mounting design	Fixed mounting of modules with SINAMICS frequency converters of the G120 series
Functions	Control of continuously operating or highly dynamic pumps, fans, and compressors
Rated values of the module	from 0.55 kW to 132 kW
Type of connection	front
Cubicle width (mm)	600, 800, 1,000
Internal separation	Form 1, 2b



SIEMENS

Frequency converter design
Compact and modular

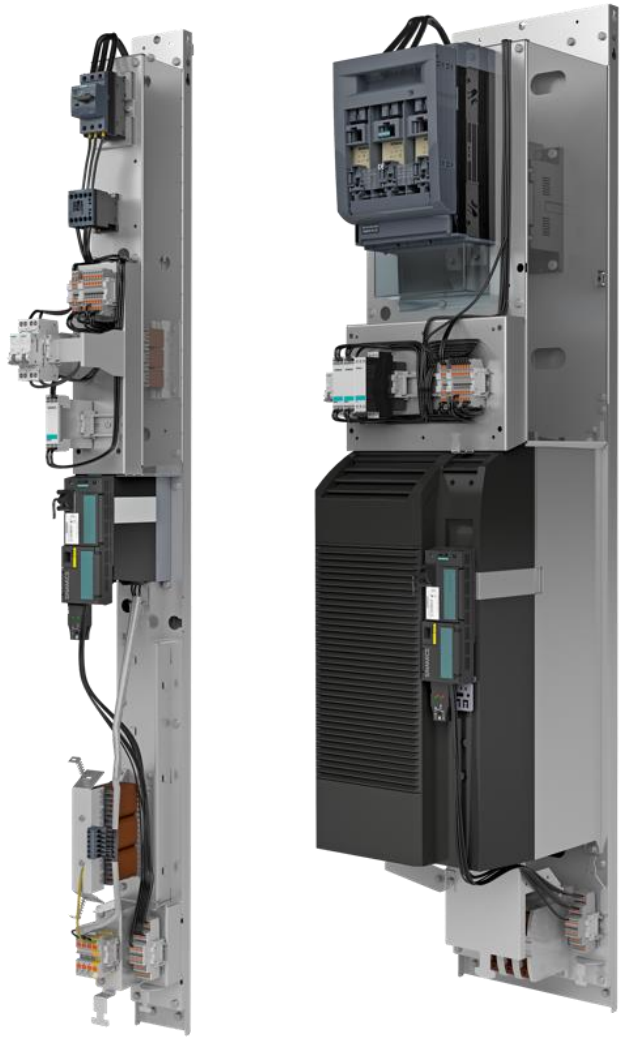
- Supplied as part of the SIVACON S8^{plus} system via the common busbar or as an autonomous frequency converter cubicle.
- Up to nine frequency converter modules with a standardized structure
- Fused and non-fused versions may be combined in a single cubicle
- Six design verified frequency converter modules, from 0.55 kW to 132 kW



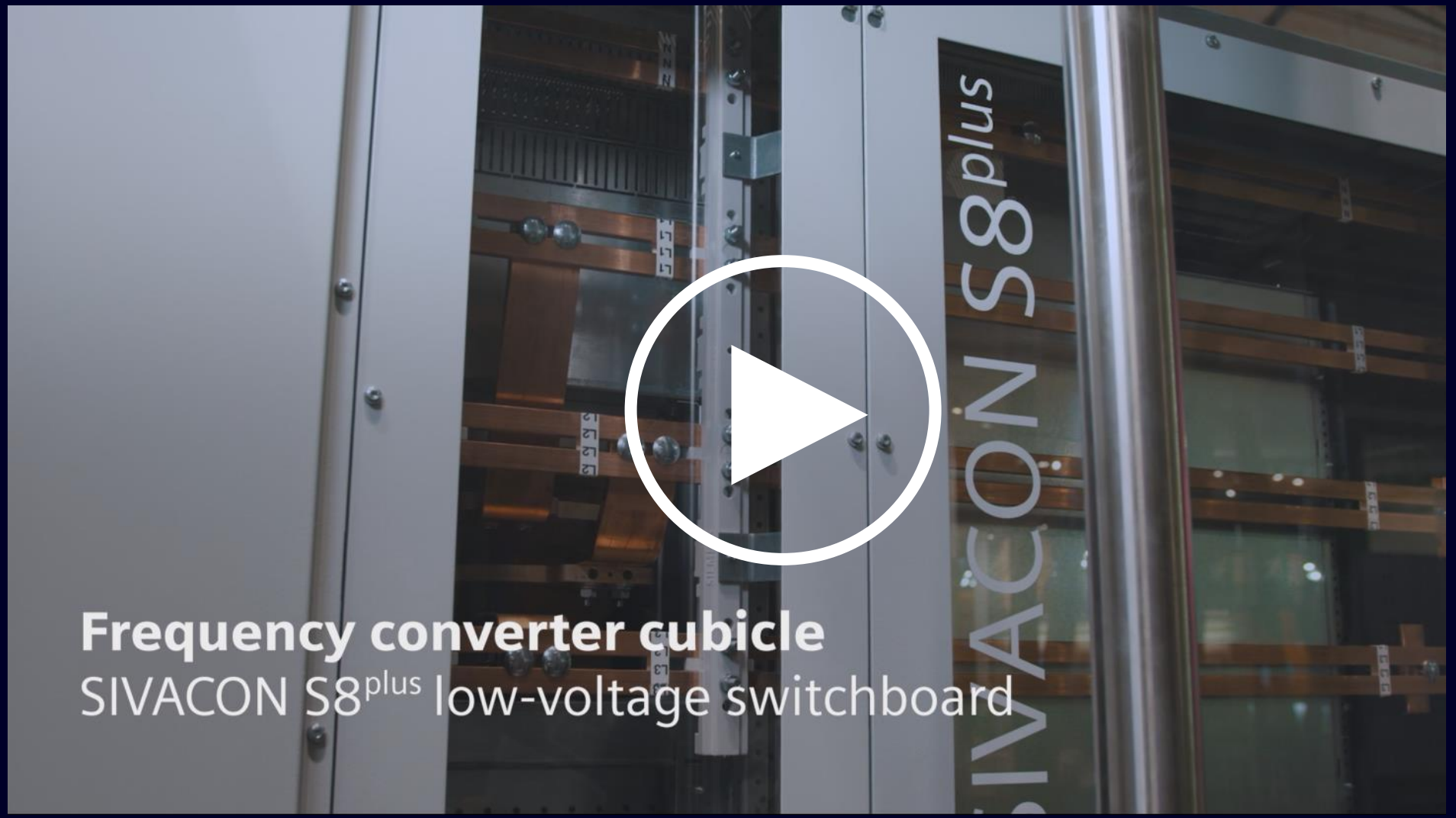
SIEMENS

Frequency converter design
Ready for the demands of the digital age

- At the heart of every module: SINAMICS G120 series frequency converter
- Integration in SIVACON S8^{plus} communication strategy via bus systems such as Modbus, PROFIBUS, or PROFINET
- Data transmission to the SIMARIS control switchboard diagnostic station
- Drive parameterization, operation, and observation on site or by remote access via SIMARIS control



SIEMENS


Frequency converter cubicle
SIVACON S8plus low-voltage switchboard
SIVACON S8plus

SIEMENS

In-line design, plug-in
High packing density and possible exchange

High packing density and possible replacement – without de-energizing the cubicle entirely

- High level of switchboard availability thanks to modification or replacement under operating conditions
- Simple and cost-efficient mounting thanks to plug-in contact on the supply/line side
- High packing density with up to 35 feeders per cubicle
- Flexible expansion options

SIEMENS

In-line design, plug-in
High packing density and possible exchange

Technical data

Mounting design	Plug-in design
Functions	Cable feeders up to 630 A
Type of connection	front
Cubicle width (mm)	1,000, 1,200
Internal separation	Form 3b, 4b

SIEMENS

In-line design, plug-in
Variable with plug-in design

- Switch disconnectors with 3NJ63 fuses or switch disconnectors with SASILplus (JEAN MÜLLER) fuses for cable feeders up to 630 A
- High packing density with up to 35 feeders per cubicle
- Cable in a compartment either 400 or 600 mm wide on the right side of the cubicle
- Plug-in contact on supply/line side to replace or retrofit the switch disconnector without de-energizing the cubicle.

SIEMENS

In-line design, plug-in
Safe and flexible

- Distribution busbar system at the rear of the cubicle
- Test finger safety (IP20B) to live parts
- Tap-off openings arranged in a 50 mm modular grid

SIEMENS

In-line design, plug-in
Compact with high functionality

- Cable connected directly at the device
- Plug-in in-line system operated directly at the device
- Up to three current transformers can be installed in the in-line system within the device contours
- Auxiliary switches and measuring devices can also be integrated
- Device compartments are available for individual equipping

SIEMENS

In-line design, fixed-mounted
Cost-efficient and compact

Cost-efficient choice if replacement of components under operating conditions is not required

- Space-saving thanks to compact design for up to 18 feeders per cubicle
- Consistently cost-efficient installation
- Optional installation of device holders for free arrangement of components, or ALPHA fast mounting kits for modular installation devices
- Optional door cutout for operation with closed front

SIEMENS

In-line design, fixed-mounted
Cost-efficient and compact

Technical data

Mounting design	Fixed-mounted design
Functions	Cable feeders up to 630 A
Type of connection	front
Cubicle width (mm)	600, 800, 1,000
Internal separation	Form 1, 2b

SIEMENS

In-line design, fixed-mounted
Compact and safe

- Vertically installed 3NJ4 fuse switch disconnectors for cable feeders up to 630 A
- Room for several switch disconnectors of size 00 to 3
- Auxiliary devices can be installed on a mounting plate in the cubicle
- ALPHA small distribution board can be fitted as an alternative

SIEMENS

In-line design, fixed-mounted
Cost-efficient and adaptable

- Distribution busbar system with various cross-sections located horizontally in the rear part of the cubicle
- PE, PEN, or neutral conductor bars installed separately from phase conductors in the cable compartment, either at the top or bottom of the cubicle depending on the connection

SIEMENS

In-line design, fixed-mounted
Flexible design

- Switch disconnectors fixed-mounted on horizontal distribution busbar system
- Cable connected directly at the device
- Cables can be routed from top or bottom
- Cubicle-height door, optionally fitted with a cutout to operate switching devices when the door is closed
- Operation directly at the device
- Switch disconnector can be fitted with up to three current transformers for feeder-based measurement

SIEMENS

Fixed-mounted design with front covers
Safe, space-saving, and flexible

Easy operation through the cover

- Cost-efficient arrangement of devices as single or multiple feeders
- Device holders of graduated depth
- More safety thanks to design verified standard modules
- High level of flexibility through the combination of high-rating outgoing feeders and modular installation devices

SIEMENS

Fixed-mounted design with front covers
Safe, space-saving, and flexible

Technical data

Mounting design	Fixed-mounted design with front covers
Functions	Cable feeders up to 630 A
Type of connection	front
Cubicle width (mm)	1,000, 1,200
Internal separation	Form 1, 2b, 4a, 4b

SIEMENS

Fixed-mounted design with front covers
Safe and cost-efficient

- Modular, individual functional assemblies can be combined flexibly
- Additive modules to subdivide functional compartments as required (up to Form 4b)
- Cable in a compartment either 400 or 600 mm wide on the right side of the cubicle
- Front covers allow a uniform front level, with optional glass door

SIEMENS

Fixed-mounted design with front covers
Flexible and space-saving

- Vertical distribution busbars arranged rear-left in the cubicle
- Designed as profile busbar or flat copper for tap-offs in the smallest of grids
- Cables, wires, or busbars can be connected with no need for drilling or punching

SIEMENS

Fixed-mounted design with front covers
Multifunctional modules

- The circuit breakers, fuse switch disconnectors, or modular installation devices are installed on modular device holders of graduated depth.
- Cable connection at the device – or, in cases of higher requirements, at special connection terminals.
- Easy operation through the cover – directly at the device

SIEMENS

Reactive power compensation
Cost-efficient overall system

Cubicles for central reactive power compensation make your power distribution more cost-efficient and more energy-efficient

- Especially cost-efficient thanks to lower energy costs
- Efficient network dimensioning thanks to low reactive power
- Design verified integration, either directly in the switchboard or as a separate cubicle

SIEMENS

Reactive power compensation
Cost-efficient overall system

Technical data

Mounting design	Fixed-mounted design
Functions	Central reactive power compensation
Capacitor power	Up to 500 kVAr unchoked/choked
Degree of choking	without, 5.67%, 7%, 14%
Type of connection	front
Cubicle width (mm)	800
Internal separation	Form 1, 2b

SIEMENS

Reactive power compensation
Cost-efficient overall system

- Reactive power compensation with unchoked or choked capacitor assemblies depending on consumer load structure
- Controller assembly has electronic reactive power controller for door installation
- Target cos phi set from 0.8 ind. to 0.8 cap.
- Network parameters such as U, I, f, cos phi, P, S, Q, and harmonics displayed

SIEMENS

Reactive power compensation
Flexible design

- Full height of device compartment for installation of controller, capacitor, or group switch assemblies
- Device compartment has cubicle-height door with ventilation openings
- Cubicle may be set up separately
- Cubicle can be directly incorporated into the substation following design verification
- No need for additional fuse protection or cable connections between switchboard and reactive power compensation

SIEMENS

Technical data

Standards and approvals

Standards and specifications	Power switchgear and controlgear assembly (design verification)	IEC 61439-2, DIN EN 61439-2, VDE 0660-600-2
	Testing under conditions of internal fault (arc faults)	IEC/TR 61641 DIN EN 61439-2 Supplement 1, VDE 0660-600-2 Supplement 1
	Integration and testing of active arc fault protection systems	IEC/TS 63107
	Induced vibrations	IEC 60068-3-3, IEC 60068-2-6, IEC 60068-2-57, IEC 60980 KTA 2201.4 Uniform Building Code (UBC), Edition 1997 Vol. 2, Ch. 19, Div. IV
	Protection against electric shock	EN 50274 (VDE 0660-514)
Approvals and certifications	Europe Russia, Belarus, Kazakhstan, China	CE Marking and EC Declaration of Conformity EAC (Eurasian Conformity) CCC
	Det Norske Veritas American Bureau of Shipping	DNV GL Type Approval Certificate
	Shell Conformity	»DEP Shell«

SIEMENS

Technical data

Technical data

Rated operational voltage (Ue)	Main circuit	up to 690 V (rated frequency f_n 50 Hz)
Clearances and creepage distances	Rated impulse withstand voltage (U_{imp})	up to 12 kV
	Rated insulation voltage (U_i)	1,000 V
	Pollution degree	3
Main busbars, horizontal	Rated current	up to 7,010 A
	Rated peak withstand current (Ipk)	up to 330 kA
	Rated short-time withstand current	up to 150 kA, 1s
	Busbar position	top, rear- top, rear-bottom
Rated currents of devices	Circuit breaker	up to 6,300 A
	Cable feeders	up to 630 A
	Motor feeders	up to 250 kW (at 400 V)
Internal separation	IEC 61439-2	form 1 up to form 4
	BS EN 61439-2	up to form 4 type 7
IP degree of protection	In accordance with IEC 60529	ventilated up to IP43, non-ventilated IP54, forced ventilated IP54
Mechanical strength	IEC 62262	up to IK10

SIEMENS

Technical data

Technical data		
Dimensions	Height (without base)	2,000, 2,200 mm
	Height of base (optional)	100, 200 mm
	Cubicle width	200, 350, 400, 600, 800, 850, 1,000, 1,200, 1,400 mm
	Depth	single front 500, 600, 800 mm double front 1,000, 1,200 mm
Installation conditions	Indoor installation, ambient temperature in the 24-h mean	+35 ºC (5 °C up to +40 °C)

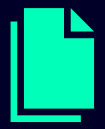
SIEMENS

Expert support

SIVACON S8^{plus} low-voltage switchboard on the **Internet**
http://www.siemens.com/sivacon-S8plus

TIP Consultant Support for planning and design of electric power distribution systems
www.siemens.de/tip-cs
Your local SIVACON S8^{plus} contacts http://www.siemens.com/sivaconS8plus-contact

Convenient planning using **SIMARIS tools** http://www.siemens.com/simaris
Efficiency from planning to maintenance – with **BIM data** www.siemens.com/bim-eplanning



Extensive range of **tender documentation**
www.siemens.com/specifications/S8

Technical documentation on the Internet
www.siemens.com/lowvoltage/product-support/S8

Courses for a sound basis
www.siemens.com/poweracademy

SIEMENS

Disclaimer

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

SIEMENS

Contact

Published by Siemens AG

Smart Infrastructure
Electrification and Automation
Mozartstrasse 31C
91052 Erlangen
Germany

www.siemens.com/sivacon-S8plus

For the U.S. published by
Siemens Industry Inc.

100 Technology Drive
Alpharetta, GA 30005
United States

SIEMENS