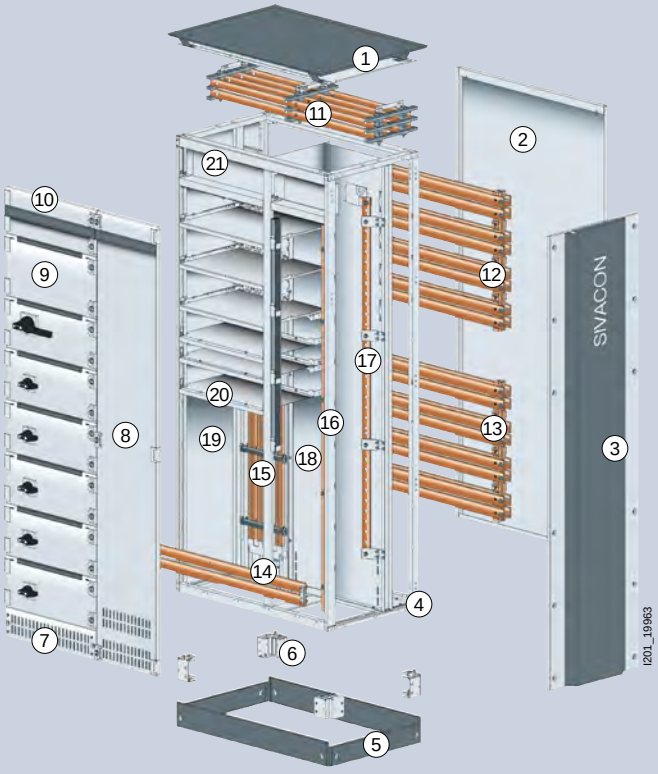
System overview

SIVACON S8 power distribution boards and motor control centers



Enclosure

1. Roof plate
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

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

Internal partitions

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

The SIVACON S8 low-voltage switchboard is a design-verified, low-voltage switchgear and controlgear assembly according to IEC 61439-1/2.

Furthermore, the verified testing under arcing conditions in compliance with the requirements of IEC/TR 61641 ensures the optimum safety of personnel. SIVACON S8 also integrates arc-fault protection systems in accordance with IEC/TS6107 and thus offers a high level of safety.

SIVACON S8 can be used as a type-tested power distribution board and motor control center up to 7000 A.

The optional, likewise design-verified, efficient and redundantly-designed ventilation system additionally contributes to ensuring safe and reliable operation.

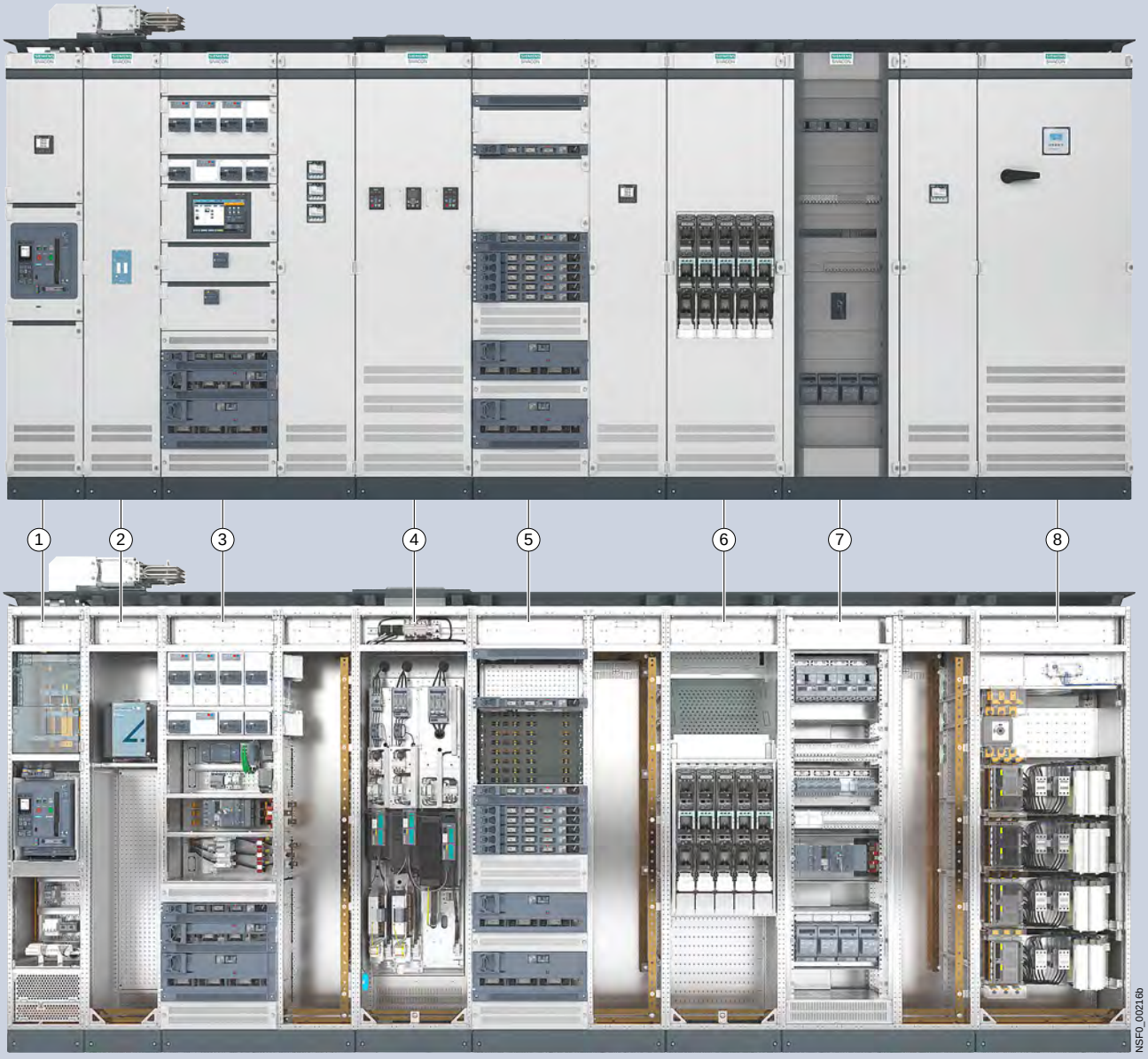
Thanks to the complete building information modeling data (BIM) of SIVACON S8, the entire lifecycle of the switchboard in an infrastructure is supported from the planning stage to operation and service.

Highlights

- Design verification in accordance with IEC 61439-2 and testing in the event of arcing due to an internal fault in accordance with IEC/TR 61641
- Extended protection against internal arcing with active protection system
- Redundantly designed, efficient ventilation system
- Universal design-verified connection to SIVACON 8PS busbar trunking systems
- Innovative, modular system
- Space-optimized use with compact withdrawable design
- Optimum application thanks to high-performance SIMOCODE pro and SIMOCODE M-CP motor management system

Design

Mounting designs



1. Circuit breaker design with 3WA air circuit breaker up to 6300A or 3VA molded case circuit breaker up to 1000A
2. Protection against internal arcing, the extended active protection against internal arcing
3. Universal mounting design section for motor and cable feeders up to 630 A in withdrawable design with combination options with fixed-mounted design (modular door) and plug-in design
4. Frequency converter cubicle up to 132 kW
5. In-line design, plugged-in, for outgoing cables up to 630 A
6. In-line design, fixed-mounted in vertical version for cable feeders up to 630 A
7. In-line design section, in vertical version for cable feeders up to 630 A
8. Reactive power compensation section up to 500 kvar

SIVACON S8 low-voltage switchboard with standardized and typified components

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Design

Universal mounting design and withdrawable design

Universal mounting design

In many applications it is necessary for space reasons to integrate various mounting designs in one and the same section. The universal mounting design from SIVACON S8 offers high efficiency, safety and high variability through the combination of

- withdrawable,
- fixed-mounted with compartment doors and
- plug-in version.

Withdrawable

The flexible withdrawable unit design is suitable for different applications, e.g. as a motor control center. The following features are offered to improve personnel and machine safety:

- Uniform operation for all withdrawable unit sizes
- Integrated operating error protection for all withdrawable units
- Unambiguous indication of withdrawable unit positions
- Separate actuation for main control switch and withdrawable unit position
- Test and disconnected position with door closed, without cancelation of degree of protection
- Withdrawable unit coding prevents swapping of withdrawable units of same size
- Lockable disconnected position
- Swiveling instrument panel on standard withdrawable units for making settings during operation
- Small withdrawable units for motor and cable feeders up to 63 A

Withdrawable unit versions

Small withdrawable units:

- Size 1/4 and 1/2
- up to 48 withdrawable units per section

Flexible withdrawable design with standard and small withdrawable units for high packing densities

Standard withdrawable units:

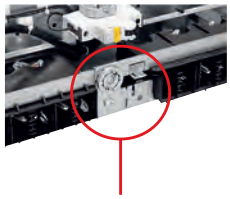
- Height 100 to 700 mm
- up to 18 withdrawable units per section

Standard withdrawable unit

Withdrawable unit coding and initialization modules

The mechanical withdrawable unit coding prevents swapping of withdrawable units of the same size. Alternatively, motor starters can be fitted with SIMOCODE pro initialization modules that considerably simplify commissioning and replacement.

Withdrawable unit coding in the compartment



Withdrawable unit coding on the unit

SIMOCODE per initialization module

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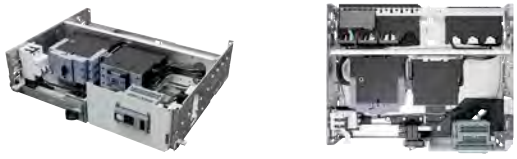
Space-optimized withdrawable design with motor management system
Rogowski coils for current monitoring, which are integrated into the contact system of standard withdrawable units, in combination with the SIMOCODE M-CP motor management system, enable a more compact design of the withdrawable units by eliminating the classic current/voltage measuring module.



Standard withdrawable unit with SIMOCODE M-CP and Rogowski coil module

SIMARIS control

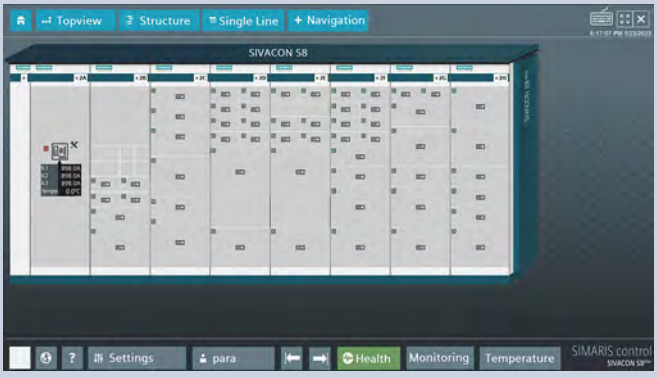
When visualized with SIMARIS control, all communication-capable switching devices can be operated and monitored uniformly by means of the SIVACON S8 low-voltage switchboard.

In addition, the data can be integrated into higher-level automation or energy management systems. Cloud-based analysis systems such as Insights Hub open up new opportunities of enhanced switchboard availability and high transparency of power flows. As a digital twin of the switchboard, SIMARIS control provides an ideal solution for local or remote visualization and control of the installed communication-capable switching devices.

SIMARIS control integrates various bus systems. A standardized data model for motor control centers enables uniform visualization of the data, Which means that all the information delivered by the communication-capable switching, protection and measuring devices used in SIVACON S8 is displayed in SIMARIS control clearly and in a structured, needs-oriented format.

Highlights
- An integrated system with easier and faster identification of events thanks to in-app alerts and email notifications
- Greater flexibility in on-site operation with local control and monitoring functions
- Increased system availability thanks to the Health Index function for accurate system health monitoring
- Easy maintenance with digital documentation and maintenance logbook
- Saves costs and space that would otherwise be required for various monitoring devices in the switchboard by displaying power flows and electrical measured values
- Easy integration with a cloud-based system
- Parallel independent operation with a higher-level control system (DC/E-SCADA)

SIMARIS control is part of the curated and modular Siemens Xcelerator portfolio.



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