



You are our partner

Become a Value Adding Reseller for our modular air-insulated medium-voltage switchgear concept.

Answers for energy.

SIEMENS



Preface



We would like to invite you to join us in a strategic partnership based on our SIMOPRIME concept. With you as our partner, we can work together to capture new markets and increase the profitability of our combined business.

This partnership application manual is intended to help you, as a Value Adding Reseller or local panel builder, to find the ideal solution for producing and selling SIMOPRIME switchgear. In putting together the manual, we have focused on a modular setup so that you can at all times determine the level of added value you desire.

We hope you enjoy reading this partnership application manual and are able to take inspiration from it for your upcoming projects.

We look forward to your exciting challenges!

A handwritten signature in black ink, appearing to read 'Jürgen Löschberger'. The signature is fluid and cursive, with a large initial 'J'.

Dr. Jürgen Löschberger
Head of Medium Voltage AIS Partnering



SIMOPRIME

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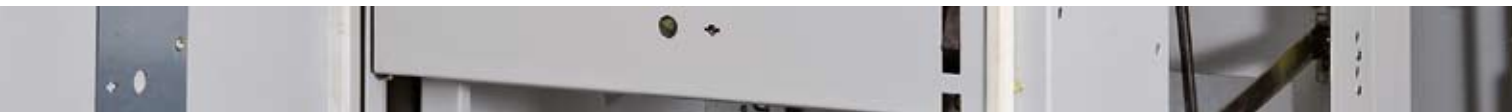
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Concept



The SIMOPRIME Partnership Concept was launched with a view to increasing the intensity and success of cooperations between Siemens and Value Adding Resellers (VARs) for the production of air-insulated medium-voltage switchgear.

SIMOPRIME is an air-insulated medium-voltage switchgear technology featuring a modular design. The concept can be tailored to meet Value Adding Reseller requirements, and includes a graded Value Adding system for SIMOPRIME. Consisting of three levels, the concept can be adapted to suit individual Value Adding Reseller needs. Our concept also offers support services in such matters as utilizing the configuration tool, advice at the production stage, marketing and technical support as well as Siemens branding.

Our aim is to make it easy for our partners to adapt the level of added value to their individual needs.

The partnering concept has its own SIMOPRIME label. This label stands for high potential, success and diversification.

Key reasons for becoming a Value Adding Reseller of SIMOPRIME air-insulated medium-voltage switchgear include:

- Reliable partnership
- Type-tested system and components
- High level of safety
- Excellent service



The SIMOPRIME partnership concept is divided up into three phases:

Phase I

Low-voltage wiring

This phase is aimed at partners purchasing the whole switchgear from us, except for the low-voltage compartment. Partners produce the low-voltage compartment and do the low-voltage wiring by themselves.

Phase II

Copper works and low-voltage wiring

This phase is aimed at partners intending to produce or add the low-voltage compartment and copper parts, and to procure current transformer and voltage transformer themselves. Aside from the switching device compartment (SDC), Siemens also supplies the switch panel components.

Phase III

Fully operational

In Phase III, partners are supplied with just the switching device compartment (SDC), including the vacuum circuit-breaker and earthing switch.

Additional offerings

In addition to supplying the product, we offer our partners a range of support services:

- Consulting and technical assistance
- Design drawings
- Blueprints & documentation
- Production training and support
- Test certificates
- Configuration via web-based tools
- Product updates
- Marketing support.

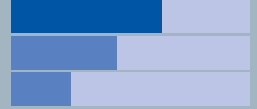
VAR value add part

Siemens value add part

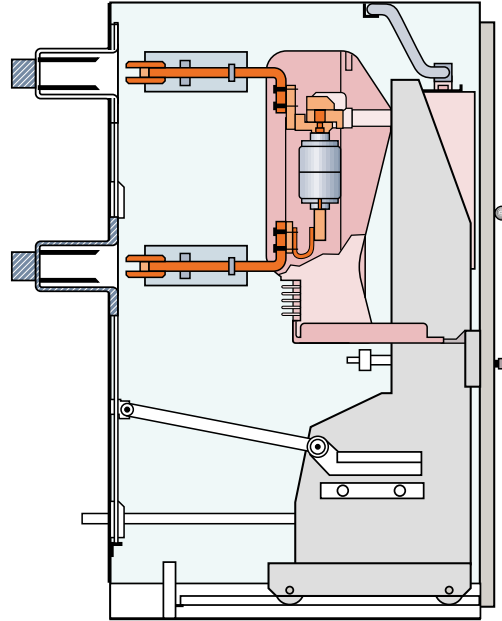
Phase III	Switching Device Compartment
Phase II	Panel without low voltage compartment, current transformer, voltage transformer and copper
Phase I	Panel without low-voltage compartment

Value Adding Reseller (VAR) – Your package

The Siemens package



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Portfolio



SIMOPRIME modular air-insulated medium-voltage switchgear, combined with the SION vacuum circuit-breaker, offers you the ideal partnership opportunity. The vacuum circuit-breaker comes either as part of a truck, or on a withdrawable unit.

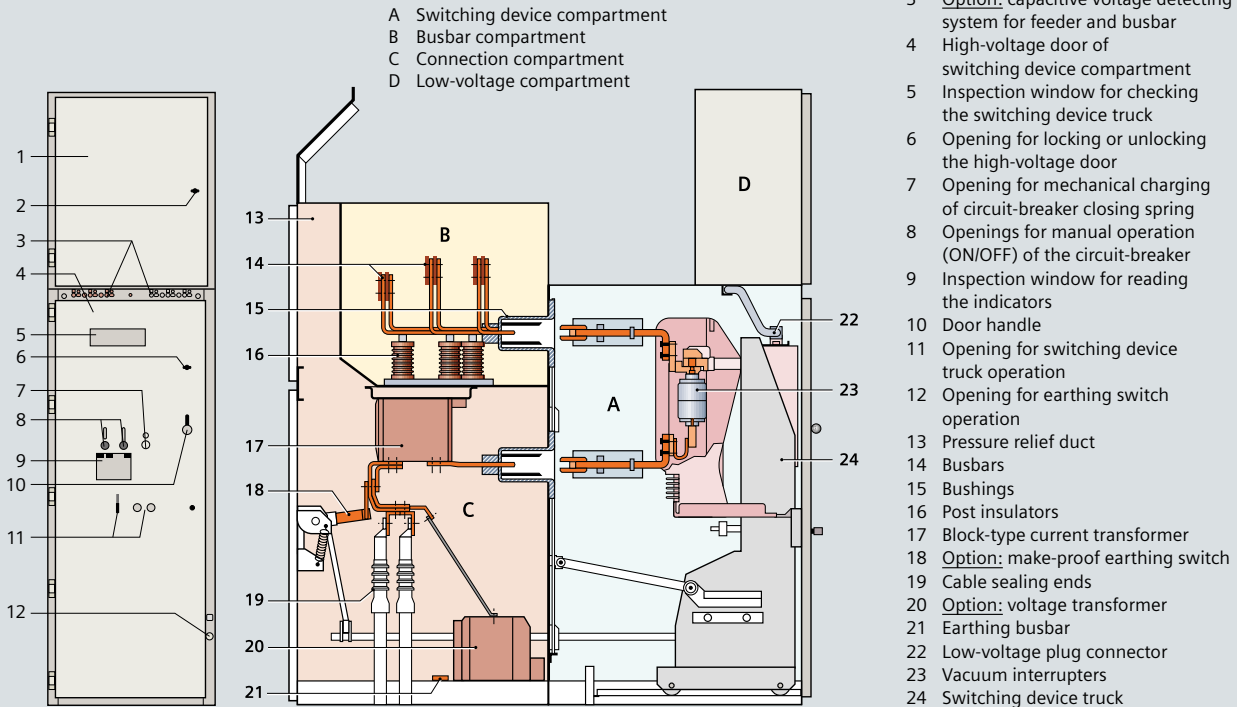
Choose SIMOPRIME, and you get a perfect combination of technology, reliability, quality, delivery and service. These qualities are what we at Siemens stand for, and what you are ultimately looking for. Get peace of mind: the ultimate aim in everyone's life.

SIMOPRIME

- Provides peace of mind
- Saves lives
- Increases productivity
- Saves money

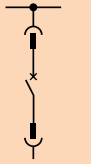

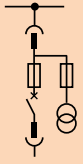
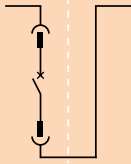
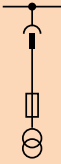






























SIMOPRIME truck type panel design (example)



Product features:

- Factory-assembled type-tested switch-gear in accordance with IEC 62271-200
- Type testing of circuit-breaker and testing of earthing switch inside the panel
- All switching operations, including emergency manual operations and rack-in/rack-out of switching device with high-voltage door closed
- Ultimate service continuity (LSC2B)
- Partition class PM, thanks to earthed metallic shutters and partitions
- Internal arc-tested design IAC AFLR up to 40 kA; 0.1/1.0 sec.
- Use of maintenance-free vacuum circuit-breaker from Siemens
- Design based on global best-practice sharing of methods and experiences relating to standard, globally available components
- Pressure relief upwards
- Panel powder-coated with epoxy resin
- Shutter-operating mechanisms separately for busbar compartments and connection compartments
- Metallic ducts on the side for laying control cables
- Electrical and mechanical interlocking between high-voltage door and vacuum circuit-breaker unit ensures interlock-based access
- Switching device compartment accommodates components for implementing various panel versions:
 - vacuum circuit-breaker
 - contactor-fuse combination
 - disconnecter link
 - metering transformers

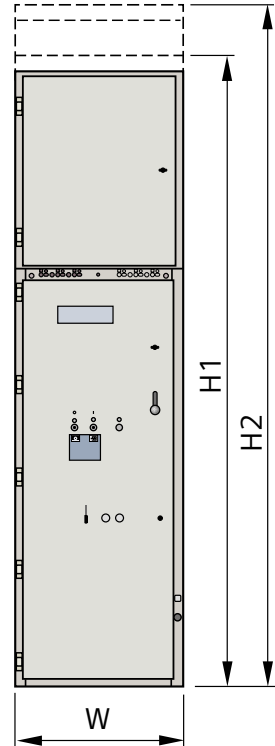
Typicals	Circuit-breaker panel	Disconnecting panel	Vacuum contactor panel	Bus sectionalizer		Metering panel
						
Removable unit (truck/withdrawable)	Vacuum circuit-breaker	Disconnecter link	Vacuum contactor with control transformer	Vacuum circuit-breaker	Link/removable unit	Voltage transformer
Current transformer						
Current transformer in run of busbar						
Voltage transformer						
Voltage transformer fuses, removable (on truck)						
Voltage transformer on the busbar						
Make proof earthing switch						
Make proof earthing switch on the busbar						
Capacitive voltage detection system (outgoing/busbar)						

SIMOPRIME air-insulated primary distribution switchgear is the best solution for standard applications and is provided by a global player in the industry. The technology is the result of best-practice sharing of methods and experiences nurtured by Siemens for more than a century across the globe.

As our partner, you can benefit from this wealth of experience along with access to the full range of up to 40 kA switchgear:

Range of products	SIMOPRIME 7.2 kV, 12 kV			SIMOPRIME 15 kV, 17.5 kV	
	435 mm	600 mm	800 mm	600 mm	800 mm
40 kA Version	–	–	■	–	■
75 kV BIL/95 kV BIL	–	■/■	■/■	–/■	–/■
Vacuum circuit-breaker on a truck	–	■	■	■	■
Vacuum circuit-breaker on a withdrawable part	–	■	■	■	■
Vacuum contractor - single/double fuse combination	■	■	–	–	–
Switching device compartment as module	■	■	■	■	■
Make-proof earthing switch as module	–	■	■	■	■

Dimensions	Panel type	Rating	mm
Width W	Circuit-breaker panel	up to 31.5 kA < 1,250 A	600
	Disconnecting panel	up to 31.5 kA 1,250 A, ... 3,600 A	800
	Bus sectionalizer/VCB panel	40 kA	800
	Contactor panel	up to 31.5 kA 40 kA or GOST version	435 600
	Bus sectionalizer/ bus riser panel	up to 31.5 kA ≤ 2,500 A up to 31.5 kA 3,150 A, ... 3,600 A 40 kA	600 800 800
	Metering panel	up to 31.5 kA 40 kA	600 800
Height H1	With standard low-voltage compartment and IAC 0.1 s		2,253
H2	With standard low-voltage compartment and IAC 1.0 s	up to 31.5 kA 40 kA	2,425 2,460
H3	Backside		1,780
Depth D	Standard		1,860



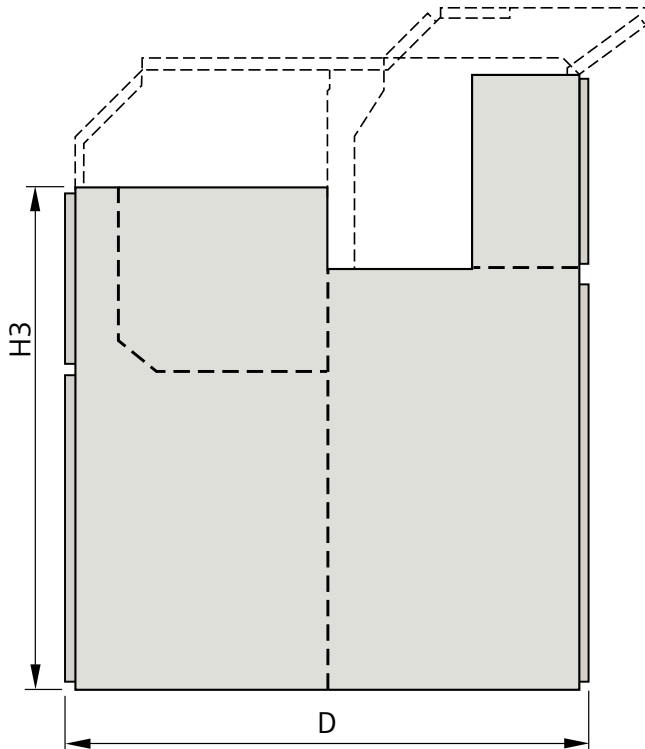


Table with ratings (switchgear up to 7.2 kV to 17.5 kV)					
Rated voltage	kV	7.2	12	15	17.5
Rated frequency	Hz	50/60			
Rated short-duration power-frequency withstand voltage *)	kV	20	28	35	38
Rated lightning impulse withstand voltage	kV	60	75	95	95
Rated short-time withstand current, 3 s	kA	up to 40			
Rated peak withstand current at 50/60 Hz	kA	up to 100/104			
Rated short-circuit breaking current	kA	up to 40			
Rated short-circuit making current at 50/60 Hz	kA	up to 100/104			
Rated normal current of busbar	A	up to 3,600			
Rated normal current of feeders	A	up to 3,600			
*) Higher values acc. to GOST standards (7.2 kV and 12 kV)					

Switching Device Compartment (SDC) with withdrawable Switching Device



SION on truck



SION vacuum circuit-breaker and 3TL6 CFC contactor-fuse combination

Siemens switching devices control all switching operations in medium-voltage distribution systems and are suitable for installation in all common air-insulated medium voltage switchgear types.

SION vacuum circuit-breakers can be used in the operation of overhead power lines, cables, transformers, generators, capacitors, filter circuits, motors, reactors and more.

3TL6 CFC contactor-fuse combination can be used for frequent and numerous operations of motors, filter circuits, capacitors, reactors, transformers and more.

The high quality of SIEMENS switching devices has been proven in numerous successful electrical and mechanical tests, as summarized below:

- Type tests in accordance with IEC 62271-100 for circuit-breaker classes E2, M2, C2
- Type tests in accordance with IEC 60470 for contactor-fuse combinations
- Type tests for relevant parts of the switchgear in accordance with IEC 62271-200
- Type tests on heating, dielectric and breaking capacity on withdrawable part – for SIMOPRIME
- Vertical burning test in accordance with UL94 for class V0



Vacuum Circuit Breaker (VCB)



3TL6 CFC – contactor-fuse combination

Low-voltage compartment without wiring

Accommodates equipment for protection, control, measuring and metering. Separated from the high-voltage part of the panel, safe to touch. Low-voltage compartment can be removed, bus wires and control cables can be plugged in. Unequipped low-voltage compartment can be supplied by Siemens on request in two versions on different heights (2253 mm/2460 mm).



Protection relays

SIPROTEC protection relays have successfully established themselves as the standard for digital protection technology for all applications. This product family is synonymous with power protection and control devices of outstanding quality and high performance.





Earthing switches

Earthing switches are used to protect staff working with tools and equipment, so they have to be very reliable and safe to operate. These switch types have proven their reliability in numerous tests, even under extreme environmental conditions.



Instrument transformers

Instrument transformers are items of electrical equipment that convert primary electrical values (current or voltage) into proportional and in-phase values suitable for the devices to which they are connected, e.g. measuring instruments, meters, protection relays etc.



Documentation

Our extensive catalog of documentation is divided into a Technical and a Manufacturing part and is also available electronically via CD.

Technical Documentation covers all installation, switching and configuration data, including test instructions and reports.

Manufacturing Documentation guides you through all phases of mechanical assembly of the system.



The documentation in detail:

Technical Documentation

- Test certificates Wording
- Test instructions for routine tests
- Dimension drawings
- Assembly drawings
- Part lists and part drawings
- Factory standards of Siemens

Manufacturing Documentation

- Manufacturing instructions (process sheets)
- Drawings (where applicable) or information relating to tools, fixtures and jigs designed and manufactured by Siemens
- Assembly and operating instructions



Training



Training

Our training center in Gebze, Turkey offers a wide range of production training sessions for your employees that can be individually adapted to your demands.

Our many years of experience in the production of medium-voltage switchgear and related training enables you to:

- Increase the knowledge of your employees
- Certify your employees by offering them certified training sessions
- Obtain full training documentation with additional material for your daily use
- Produce competent employees who can effectively and efficiently perform the task required to meet your business requirements
- Incorporate new products or equipment/processes

Phases	Training module	Duration	General management	Sales	Engineering	Workshop
Phase I	General Information about SIMOPRIME type switchgear and SION vacuum circuit-breaker	1 d	optional	obligatory	obligatory	-
	Training for configuration by using a proven engineering tool	1 d	-	obligatory	obligatory	-
	Phase I: low-voltage production and assembly	2.5 d	-	-	-	obligatory
Phase II	General information current transformer, voltage transformer and bus bars	0.5 – 1 d	-	optional	optional	-
	Phase II: assembly of current transformers, voltage transformers and copper parts	2.5 d	-	-	-	obligatory
Phase III	General information about earthing switches, body assembly, bushings, shutter mechanism	0.5 – 1 d	-	optional	obligatory	-
	Phase III: assembly of earthing switches, body assembly, bushings and shutter mechanism	2.5 d	-	-	-	obligatory



General information about SIMOPRIME type switchgear and SION vacuum circuit-breaker

This course is a general information course covering SIMOPRIME switchgear and SION vacuum circuit-breaker. The participants are certified after attendance. Trainees will be oriented about Siemens campus and production line.

Duration: 1 day

Requirements/background knowledge:

Experience and fundamental technical knowledge of medium-voltage technology.

Training for configuration by using a proven engineering tool

This course provides general information on the proven engineering tool. Participants learn how to configure SIMOPRIME panels. The tool supports intuitive and error-proof engineering, as technical interlockings avoid inconsistencies. It can be used for primary parts engineering during the quotation and order stages. Comprehensive documentation can be generated fully automatically, including technical data lists, parts lists and switchgear graphics.

Duration: 1 day

Requirement/background knowledge:

Basic technical knowledge of medium-voltage technology; familiarity with Microsoft Office/Internet; experience in the execution of medium-voltage projects.

Phase I:

Low-voltage production and assembly

Participants are provided with technical information relating to low-voltage compartments. Includes study of production drawings and lists, pre-production and assembly of low-voltage compartment. Other assembly workstations and quality assurance departments are visited for orientation as well as preparation for the next phases. After successful completion of the training, the participants receive a certificate which approves their participation for the above activities.



Duration: 2.5 days

Requirements/background knowledge:

Basic technical knowledge of medium-voltage technology, mechanical background for metal sheet processing; production experience and know-how.

General information about current transformers, voltage transformers and busbars

Participants are provided with technical information relating to copper parts, current transformers and voltage transformers; includes study of production drawings and lists.

Duration: 1 day

Requirements/background knowledge:

Basic technical knowledge of medium-voltage technology.



**Phase II:
Assembly of current transformers, voltage transformers and copper parts**

Participants are provided with technical information relating to copper parts, the assembly of current transformers (CTs) and voltage transformers (VTs). Includes study of production drawings and lists, pre-production and assembly of copper parts, CTs and VTs.

The trainees will also participate in related quality assurance activities. The participants receive a certificate which approves their participation for the above activities, just as after phase I.

Duration: 2.5 days

Requirements/background knowledge:

See phase I.

General information about earthing switches, body assembly, bushings and shutter mechanisms

Participants are provided with technical information relating to earthing switches, body assembly, bushings, shutter mechanisms and mechanical parts; includes study of production drawings and lists.

Duration: 1 day

Requirements/background knowledge:

Basic technical knowledge of medium-voltage technology.

**Phase III:
Hands-on production and assembly**

Participants are provided with technical information relating to earthing switches, body assembly, bushings, shutter mechanism and mechanical parts. Includes study of production drawings and lists, pre-production and assembly of above components.

The trainees will also participate in related quality assurance activities. The participants receive a certificate which approves their participation for the above activities, just as after phase I and II.

Duration: 2.5 days

Requirements/background knowledge:

Basic technical knowledge of medium-voltage technology and reading of mechanical drawings; production experience and know-how.

For each training unit, participants receive a folder containing training materials. The documents have a modular structure, and are also available electronically.

Participants receive a certificate of attendance from our training center after each training session.

We monitor the quality of our training sessions on a regular basis by means of feedback forms.

Based on your knowledge and experience the training concept will be customized to your needs.

Additional options:

- Power engineering and switchgear applications guide for medium-voltage networks
- Selection guide for medium-voltage components
- Protection relay (SIPROTEC relays, CFC concept)
- CT and VT selection guide, ferroresonance phenomenon and damping resistor calculation
- Assembly and installation course (supervisor course)





Configuration tool



Configuration tool

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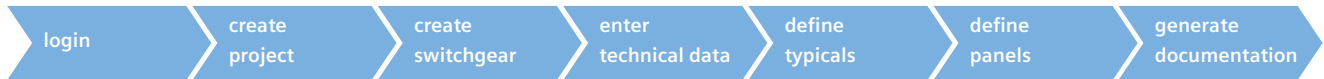
Training

Tool

Support

The partnership version of the Siemens best-practice tool for switchgear engineering is suitable for intuitive and error-proof primary part engineering of medium-voltage air-insulated switchgear. Technical interlockings avoid failures. The tool can be used during the quotation and order stages. The related documentation can be generated fully automatically, and manual modifications are only necessary with nonstandard designs.

The process is split into seven individual steps: login, create project, create switchgear, enter technical data, define typical, define panels and generate documentation. We offer a training session that covers general information about the configuration and engineering tool. This session gives participants a greater understanding of how to configure SIMOPRIME panels and provides hands-on training.





After login, the first step is to create a new project or open an existing project. Then a new switchgear can be defined as offer or order which belongs to this project. Alternatively, existing switchgear can be copied.

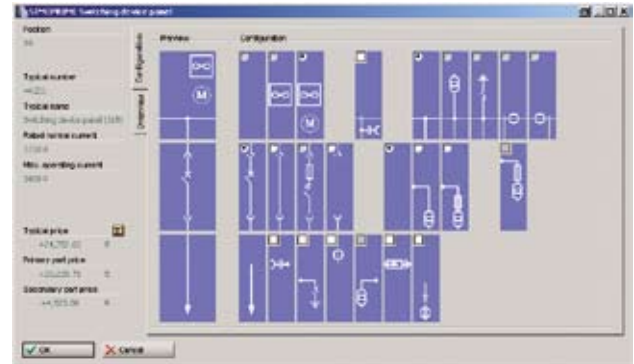
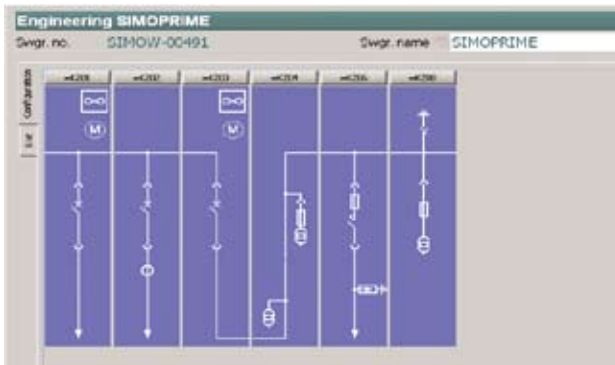
In the “Technical data” engineering section, the technical data of the switchgear is selected, e.g. rated voltage. The parameters are linked together logically, in order to take account of interdependencies and to avoid inconsistencies.



Configuration tool



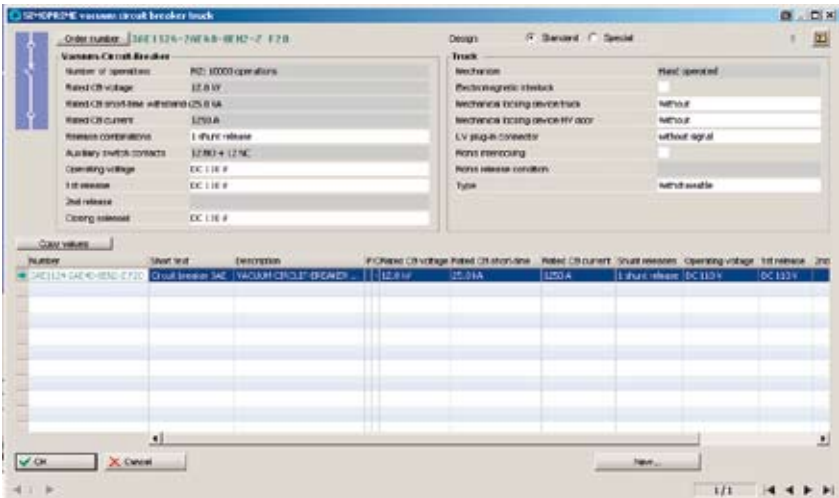
In the “typicals” engineering section the necessary panel types (e.g. circuit-breaker panel, metering panel) are configured.



Next, the components of the typicals are specified. This section displays the components of individual typicals, e.g. circuit-breakers, current transformers and voltage transformers.



Then the components for the selected typicals are specified in detail, e.g. the vacuum circuit-breaker. The basic data is taken from the “technical data” section for the entire switchgear. Only data specific to the component needs to be entered. Standard and special devices can be selected.



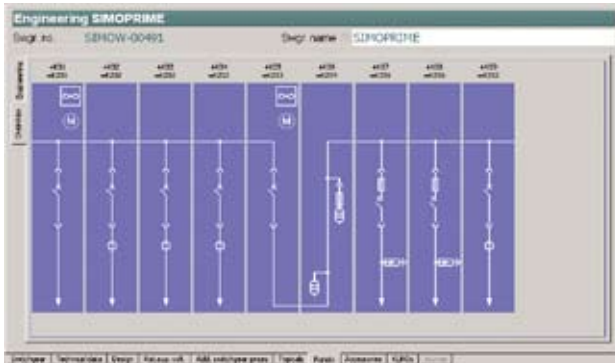
Configuration tool

define
typicals

define
panels

generate
documentation

Once all required panel types have been defined, the order of the panels is configured in the “panels” screen. The individual panels are numbered automatically.



define
typicals

define
panels

generate
documentation

Once the switchgear has been fully configured, the required documentation can be generated automatically.

- Technical specification
- Technical data list
- Parts list
- Single line diagram
- Front view documentation
- Plan view documentation





Support



We will provide technical assistance for production supervision at your production site, as well as additional support in line with your needs.

Contact our Partnering Support Team by email:
pst.tr@siemens.com

We also support our Value Adding Resellers with a global support service:

- Priority technical support for Value Adding Resellers
- continuously evolving training program for our products (see Training chapter)
- Marketing materials



Link:

www.siemens.com/energy/medium-voltage-partnering



Additional support:

- Internet homepage with all current documentation, including brochures, catalogs, flyers, presentations etc.
- Protected Extranet within the Internet where our partners can log in to gain access to our configuration tool and additional information such as test certificates, documents and marketing support (depending on your contract).
- Email newsletters provide you with the latest information about our products, systems and tools. These email newsletters will be sent to you on a regular basis.

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Power Distribution Division
Printed in Germany
006100/21860 12.08 1.0

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specified in the contract.

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