POWER DISTRIBUTION SOLUTIONS

SEL-TPR6 PLUS

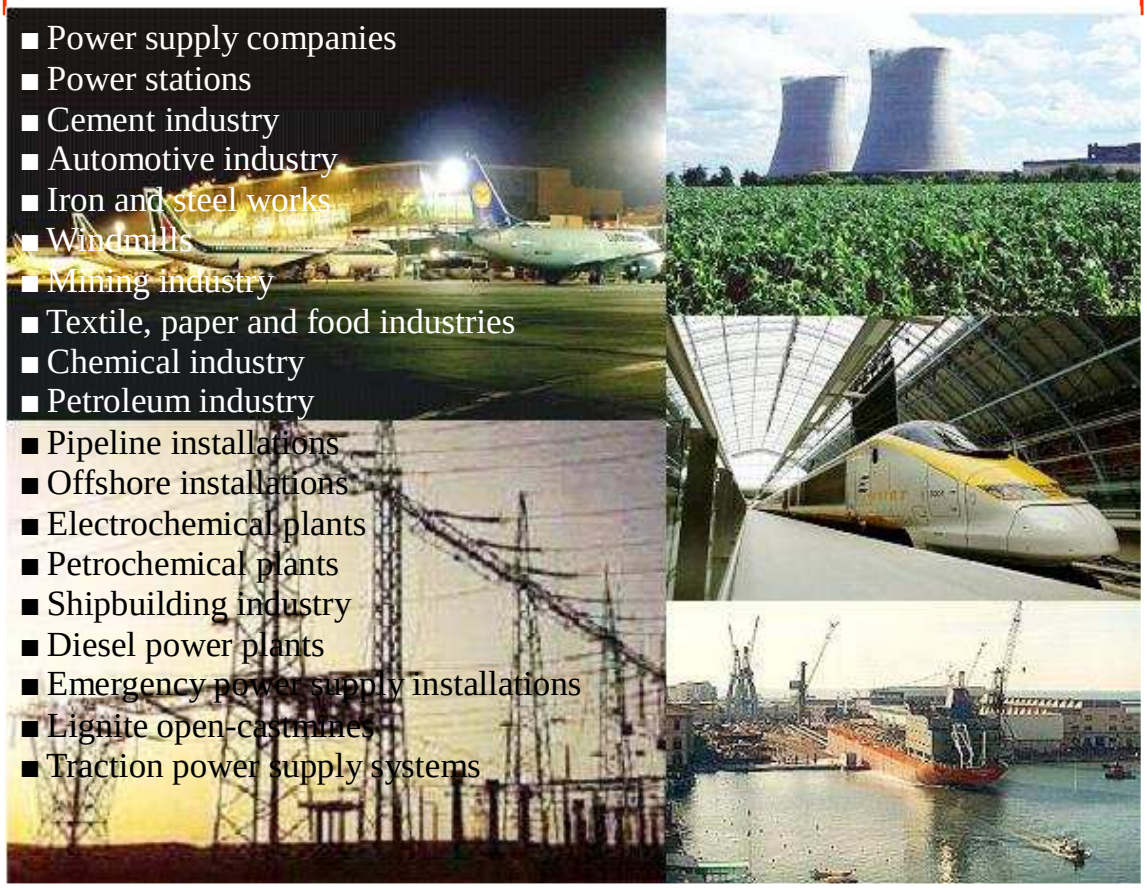
Medium voltage switchgear

Up to 2500A - 24kV

Up to 2000A - 36kV

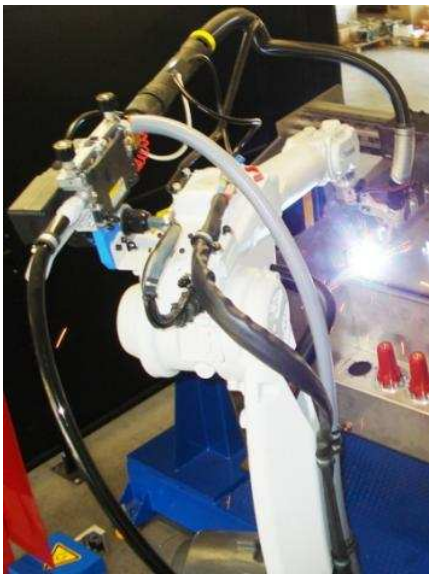
Quality

GAE “SEL-TPR6 PLUS” for primary distribution systems has been developed after many years of experience in the secon- dary distribution with GAE “SEL-TPR6” series.
Compared to GAE “SEL-TPR6”, GAE “SEL-TPR6 PLUS” is characterized by higher performances; its short-time withstand current is up to 31.5kA and rated current up to 2500A . GAE “SEL-TPR6 PLUS” is particularly suitable for power plants with high performances.



GAE “SEL-TPR6 PLUS” TESTED BY CESI ITALY - ACCORDING WITH THE IEC STANDARDS

Applications



In order to obtain higher quality GAE "SEL-TPR6 PLUS" manufacturing process is highly automized. Robotic welding station ensures reliable and tight welding without any variations and breaks in production, resulting in better quality. Metal sheet processing is done by computer con- trolled robots speeding and simplifying the production.

All the manufacturing process follows a quality procedure certified by TUV in accordance with ISO 9001:2008.
The production conforms with the specific quality manual which is updated regularly so that it reflects the most recent applicable quality control procedures.

Systematic tests
Each GAE "SEL-TPR6 PLUS" undergoes a thorough check before leaving the factory. The following routine tests are carried out in order
to guarantee the quality, reliability and safety of the product:

- Measurement of the resistance of the main circuits
- Opening and closing speed measurement on switch, earth, switch and circuit-breaker
- Operating torque measurement
- Filling pressure and tightness test
- Dielectric test
- Conformity with drawings and diagrams
- Electrical function test on auxiliary circuits

IEC Standards

GAE "SEL-TPR6 PLUS" is manufactured and tested in confor- mity with the latest issues of the following IEC standards.

IEC 62271-1 *Common specifications for high voltage switchgear and controlgear.*

Ambient temperature:
- Maximum value 55°C (*)
- Maximum value of 24 hours average: 35°C
- Minimum value –25°C

Altitude of installation:
- Up to 1000 m.
- Above 1000 m consult SEL.

IEC 62271-200 *A.C. Metal enclosed switchgear and controlgear for rated voltage above 1kV and up to 52kV*

Switchgear classification: PM class (metallic partitioning)

Loss of service continuity: LSC class not classifiable. (No loss of service continuity).

IEC 60265 - 1 *High voltage switches for rated voltage above 1kV and up to 52kV* Class M1/E3
- 1000 operating cycles close/open
- 100 make-break operating cycles at 100% mainly active load test duty 1 (rated current and 0.7 power factor)

IEC 62271 - 100 *High voltage alternating current circuit breakers*
Standard GAE "SEL-TPR6 PLUS" circuit-breakers have class
M1/E1.

Circuit-breaker class M1: circuit-breaker with normal mechanical endurance, type tested for 2000 mechanical operations.

Circuit-breaker class E1: circuit-breaker with basic electrical endurance not falling into class E2 (no extra tests are therefore required beyond the normal short-circuit type test).

On request class M1/E2 or class M2/E2 circuit-breaker are also available.

Circuit-breaker class M2: circuit-breaker with extended mechanical endurance, type tested for 10000 mechanical operations.

Circuit-breaker class E2: circuit-breaker with extended electrical endurance specifically type tested operating sequence (see tab.21 §6.112 of IEC 62271-100).

Rated operating sequence: O-t-CO-t'-CO where
t=3 min for circuit-breaker not intended for rapid auto-reclosing
t=0,3 s for rapid auto-reclosing circuit-breakers
t'=3 min

IEC 62271 - 102 *Alternating current disconnectors and earthing switches*

IEC 62271 - 105 *Alternating current switch - fuse combination*

IEC 60255 *Electrical protection relays*

Features

General

GAE "SEL-TPR6 PLUS" is a maintenance-free, factory-assembled and type-tested medium-voltage switchgear. It is three- pole metal-enclosed and SF_6-insulated. Vacuum circuit-breaker, switch-disconnector and disconnector modules are available.
The core of the switchgear consists of hermetically welded containers made of corrosion-resistant stainless steel, accommodating the primary devices (circuit-breaker and three-position switch). The switchgear is sealed for life. The switchgear modules are interconnected by solid-insulated busbars outside the gas compartments.
Gas work is not required, neither for installation at site nor for extension of the switchgear.
The operating mechanisms of the vacuum circuit-breaker, three-position switch-disconnector and three-position disconnector are located outside the gas compartment and are therefore accessible at any time.
Current and voltage transformers are usually located outside the gas compartment.
Cables are connected from the front. They are arranged at one level side-by-side and at a user-friendly mounting height.

Module Design

A switch module consists of the following functional components:

- Busbar compartment with 1-pole insulated, plugged-in and bolted busbars
- Switchgear vessel with vacuum circuit-breaker, three-position disconnector and/or three-position switch-disconnector
- Cable connection compartment
- Low voltage compartment
- Enclosure

The switchgear vessel made of stainless steel is hermetically welded and meets the requirements of a sealed pressure system. Modules are interconnected by the plug-in and bolted busbars. Cables are connected through enclosed cable plugs of the outside-cone system. All functional components of the primary part mentioned above are safe-to-touch. The internal arc classification is specified according to IEC 62271-200. The switchgear is provided for free-standing arrangement. The degree of protection is IP67 for live parts of the primary circuit, and IP3XD for the switchgear enclosure. The switchgear enclosure is powder-coated with highly resistant epoxy resin in the colour: Grey RAL7035 or hot dip galvanized.

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Switchgear Vessel

The switchgear vessel made of hermetically welded stainless steel accommodates the active, live parts of the switchgear:

- Vacuum interrupters
- Three-position switches
- Module bars
- Bushings with capacitive layers
- Voltage transformer disconnecting facility with bushings

The rated pressure of the SF_6 gas in the vessel is 1300 hPa (absolute) for units up to 2500A.
For units up to 2500A rated current, gas pressure is monitored by means a manometer or by density meter in front of module.

Switching Devices

2500A Circuit-Breaker

The vacuum interrupters are operated from the outside mechanism. The maintenance-free operating mechanism has the following equipment features:

- Motor operating, stored-energy spring mechanism, with auto-reclosing capacity
- ''Trip-free'' according to IEC
- Auxiliary switch contacts for control and signalling

Operation counter
Shunt closing release
'Spring charged' indication
Mechanical position indicator
Mechanical ON/OFF
Feeder locking device with interlocking to three-position disconnector and cable-compartment cover

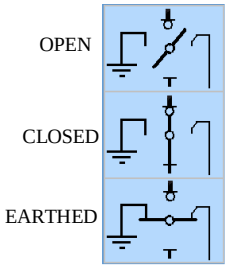
Endurance class of circuit-breaker: Up to E2 - M2 in accordance with IEC 62271-100.

Three-Position Disconnector

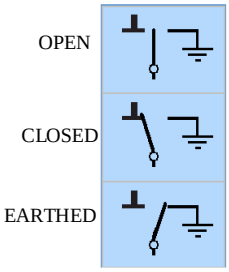
In circuit-breaker, disconnector and bus sectionalizer modules, the three-position disconnector fulfills the functions DISCONNECTING and, also in combination with the circuit-breaker, make-proof EARTHING.
The operating mechanism of the three-position disconnector has the following equipment features:

Manual operating mechanism for DISCONNECTING and EARTHING
Auxiliary switch contacts, disconnector: 2 changeover, 1 NO, 1 NC available
Auxiliary switch contacts, earthing switch: 1 changeover, 2 NO, 2 NC available
Mechanical position indicators for disconnector and earthing switch positions
Manual operation with mechanical interlock to circuit-breaker
Locking device
The TF unit is equipped with fuses combinated with three position switch
The FM unit is equipped with three position disconnector.

Endurance class of three-position disconnector: E2 (only for circuit-breaker modules by closing the circuit).



Switch disconnector



Disconnector

Cable connection

The cable connection compartment is only accessible from the front using tools.
The three phases are arranged side-by-side at the same height. The connection height is higher them 600 mm in circuit-breaker and disconnector modules.
In the different module versions it is possible to connect up to three cables per phase with shock-proof T-plugs according to the outside-cone system (DIN EN 50181, interface type C). Symmetrical current distribution must be ensured.
Using suitable T-plugs, with special test rod; cable testing can be performed directly at the cable termination.

Measuring transformers

Current transformers

Current transformers are usually ring-core type transformers. They have to be fitted on the bushings outside the vessel or on the cable line during installation, i.e. without dielectric stress. Toroidal transformers can be mounted around the bushings (outside the vessels).

Voltage transformers

VTs are usually inductive metal-enclosed type installed outside the gas compartment.

Busbars

The busbars are located outside the SF_6 compartment in a metal enclosure. They are plugged onto the switch- gear vessels from above and screwed tight.
The busbar itself is made of round-bar copper, the length of which depends on the module width. It is

insulated with silicone rubber, which is coated with a conductive layer on the outside and earthed. The bolted joints are insulated with cross adapters, also made of silicone rubber. These cross adapters are coated with a conductive layer both inside and outside. Therefore, no field distortion can appear at the high voltage joints.
Due to the earthed coating of the busbar system, the arrangement is independent of environmental influences such as condensation and pollution.

Switchgear Enclosure

The internal arc classified switchgear enclosure consists of the following assemblies:

- Three-part module front
- Floor cover in cable compartment
- Metallic partitions between the modules for the cable compartment
- Busbar cover
- Switchgear termination consisting of end walls fixed by screws

Operation

Switchgear operation takes place mechanically via control elements at the front of module.

LV compartment

Low voltage compartments are located at the front. The secondary devices (associated protection, measuring and control devices) are mounted in the low voltage compartment on a rear mounting plate or a DIN-rail system. Single devices can be integrated in the door of the low voltage compartment.
General bus wires are laid in a separate connection duct located at the top.
Customer-specific control cables can be routed to the low voltage compartment by means of a lateral duct to be fitted externally to the switchboard at customer care. External control cables are inserted on top of each respective low voltage cubicle.

Operational Reliability

Consistent hermetically welded enclosure of all live parts from the busbar down to the cable excludes any external influence on the primary part. In addition, the welded stainless-steel enclosures ensure that the loss of SF_6 gas is impossible. Time-tested components such as bushings, welded-in bellows and the vacuum switching technology are integrated in this innovative global concept.

Personal Safety

The internal enclosure of components, the internal arc resistant design and the complete interlocking concept all guarantee a maximum degree of personnel safety.

Climatic and Environmental Independence

Hermetically welded stainless-steel enclosures make GAE “SEL-TPR6 PLUS” insensitive to any environmental influences. The primary part is therefore consistently protected against external influences such as humidity, pollution, dust, aggressive gas, small animals, etc.
Any pollution effect depending on humidity through seals is excluded by this design.
The above mentioned reasons make the switchgear also suitable for application in extreme climates or under aggressive environmental conditions.
Furthermore, the dielectric strength of this technology switchboard is independent of the altitude site.

Features

Maintenance Free

GAE “SEL-TPR6 PLUS” is maintenance-free for life due to the
following features: No repair and maintenance cycles required,
Hermetically welded stainless-steel enclosure, with maintenance-free vacuum switching technology and maintenance-free three-position switches,
Maintenance-free operating mechanisms for circuit-breakers and three-position switches,
Consistent implementation of full switchgear insulation down to the module connection by means of cable plug-in systems,
No need to check the gas quantity and quality due to the welded stainless-steel enclosures.

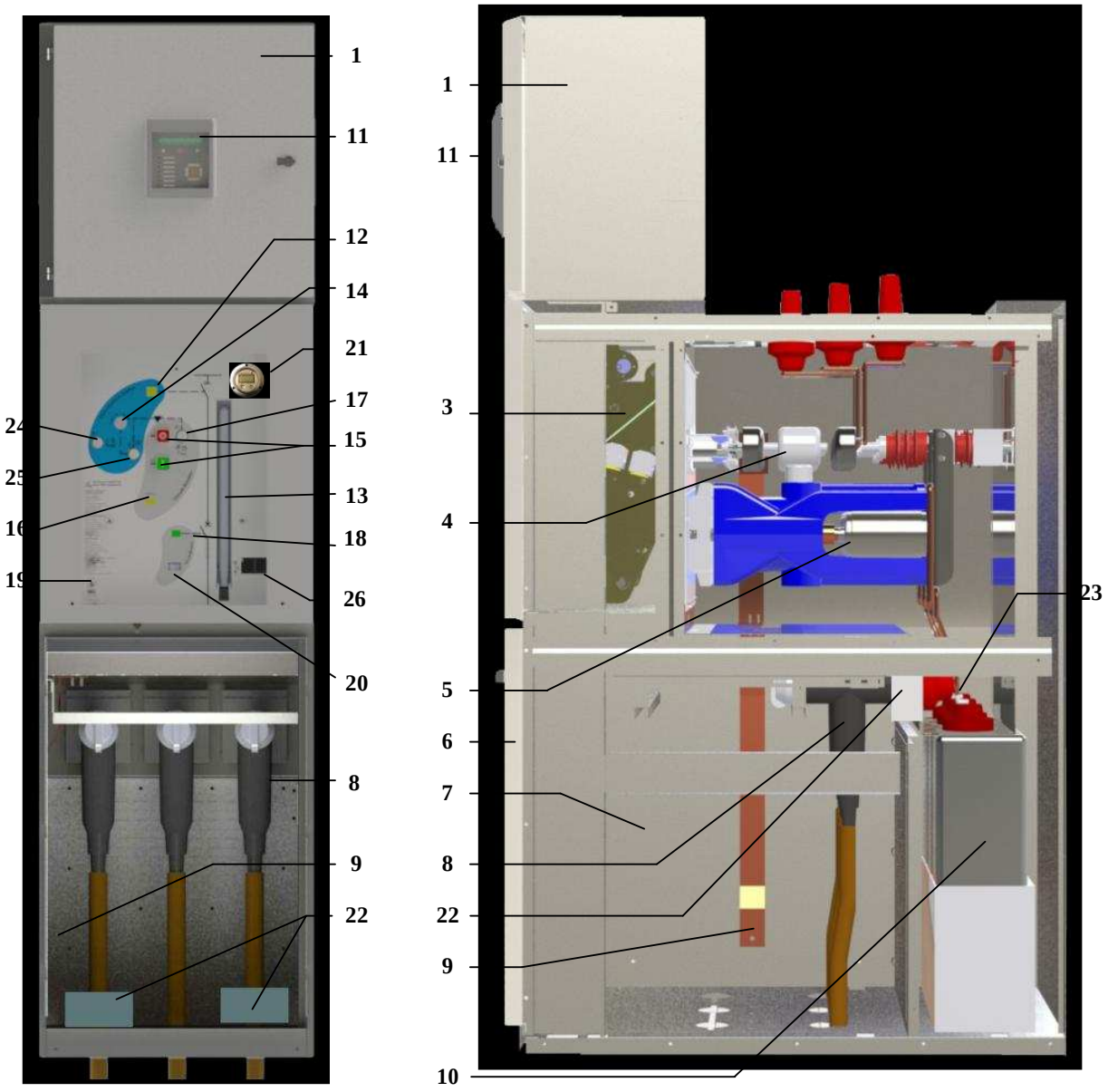
Ergonomic Design

The switchgear is appropriate for a user-friendly and functional industrial design. All switching devices are operated from the switchgear front. Control elements and indicators are located at an ergonomic height and are optimally integrated in the overall design.

Installation Friendly

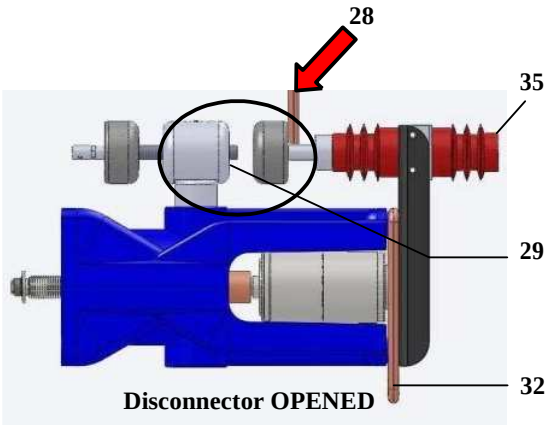
Switchgear installation and extension as well as module replacement is done without SF_6 gas
work. The switchgear can be installed without special tools and instruments.
Busbar interconnection from module to module is made through plugged-in and bolted busbar units.
For more information regarding installation and operation, please refer to GAE “SEL-TPR6 PLUS” operating and installa- tion instructions.

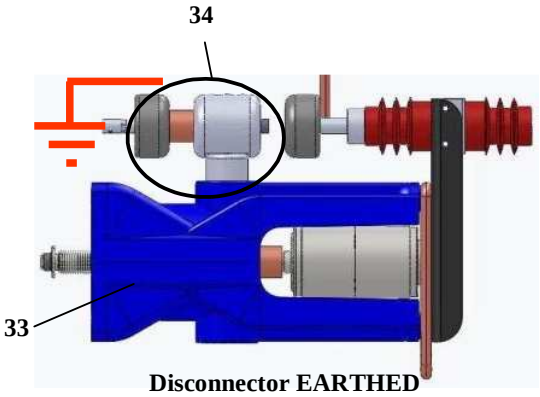
COMPONENTS single busbar module

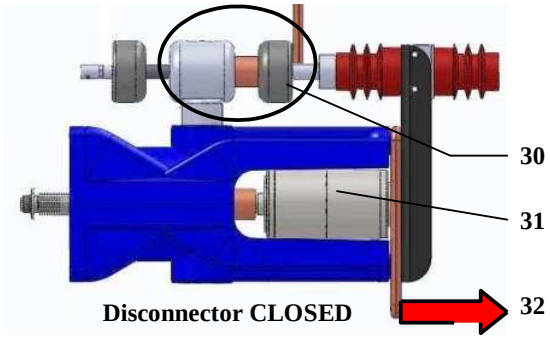


1	L.V. compartment
2	Bushing for busbar
3	Operating mechanism
4	Three position disconnector
5	Circuit breaker
6	Door for cable compartment
7	Cable compartment
8	Cable connection
9	Earth busbar
10	Voltage transformer (VT)
11	Protection relay
12	Position indicator for three position disconnector
13	Actuator for the springs charging of the circuit breaker
14	Manual op. and cl. disconnector and earthing switch
15	On - Off push button for circuit breaker
16	Mechanical spring charged indicator
17	Key lock (key free with C.B. opened)
18	Position indicator for circuit breaker
19	Nameplate
20	Operation counter
21	Gas level indicator
22	Current transformer (CT)
23	VT three position disconnector
24	Key lock (key free with earthing switch closed)
25	Key lock (key free with disconnector closed)
26	Voltage indicator

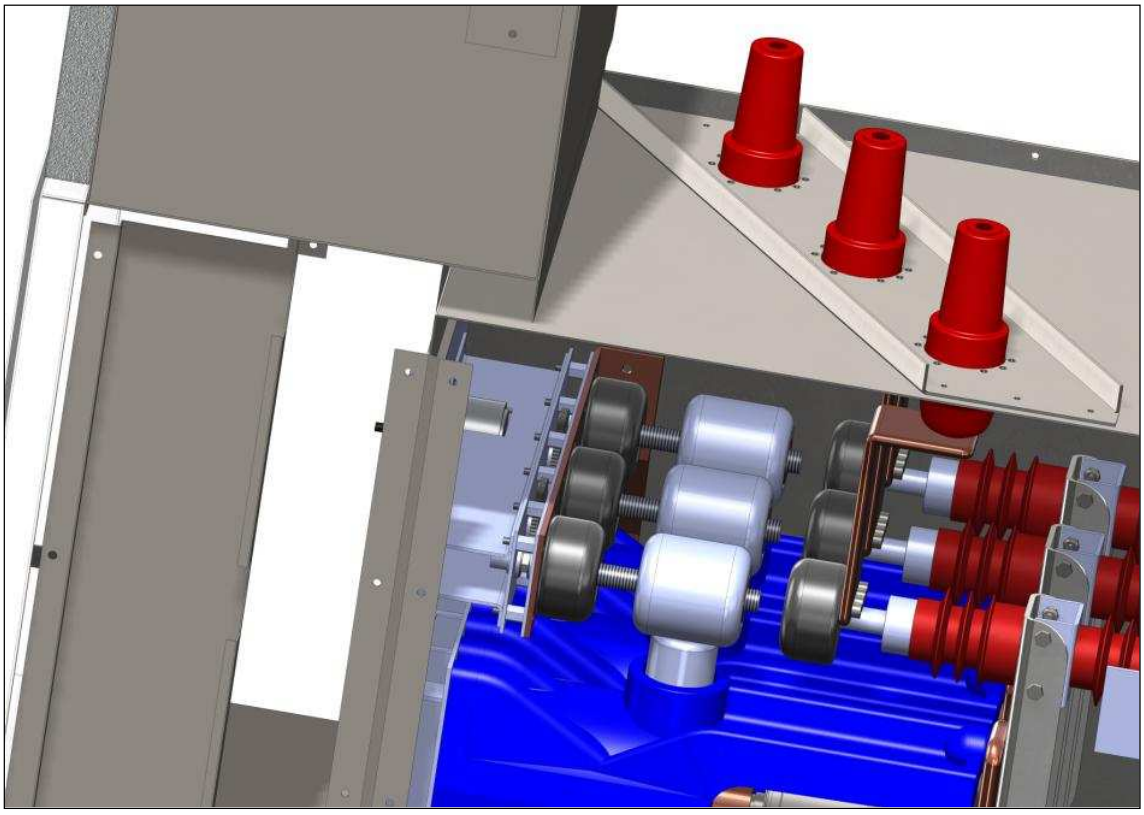
COMPONENTS single busbar module



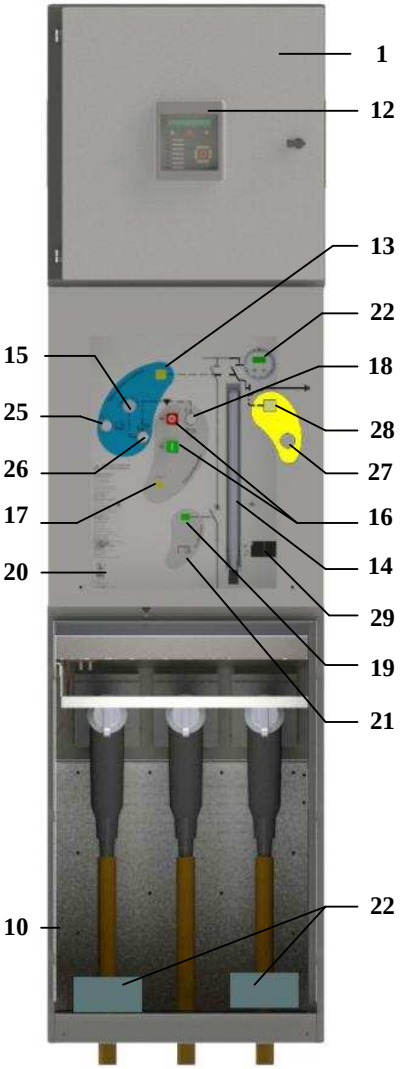


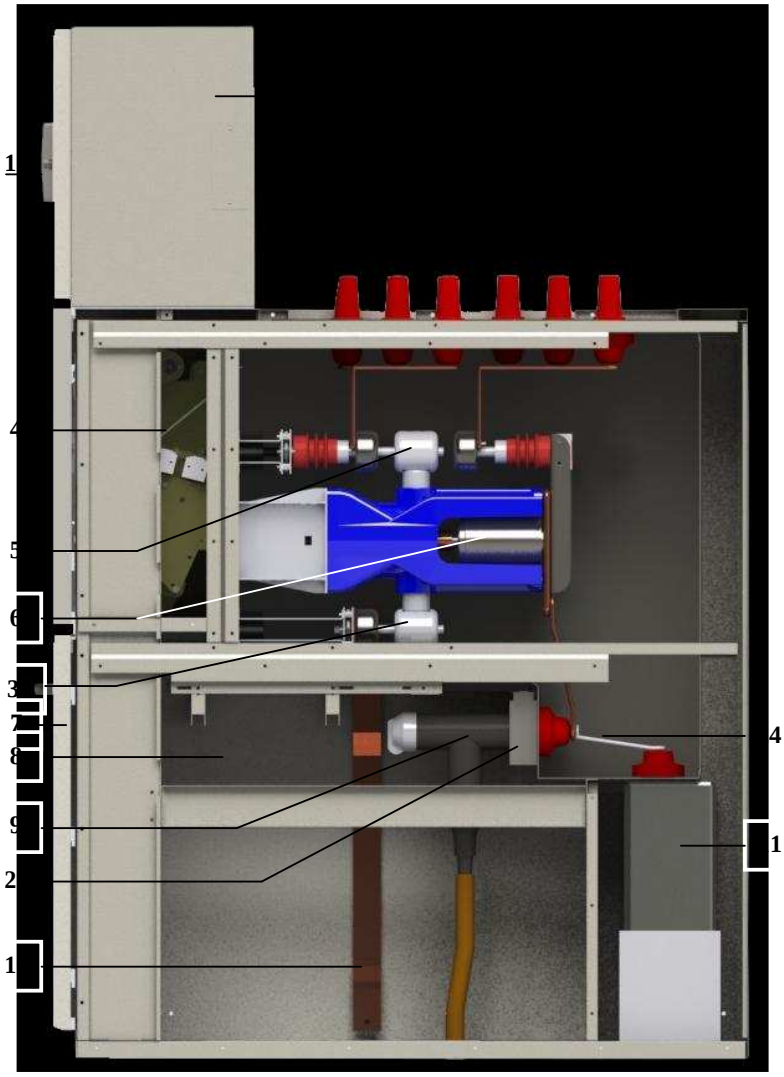


28	Line IN / OUT
29	Disconnector in open position
30	Disconnector in closed position
31	Vacuum interrupter
32	Line OUT / IN
33	Pole support
34	Disconnettor in earth position
35	Insulating support



COMPONENTS double busbar module

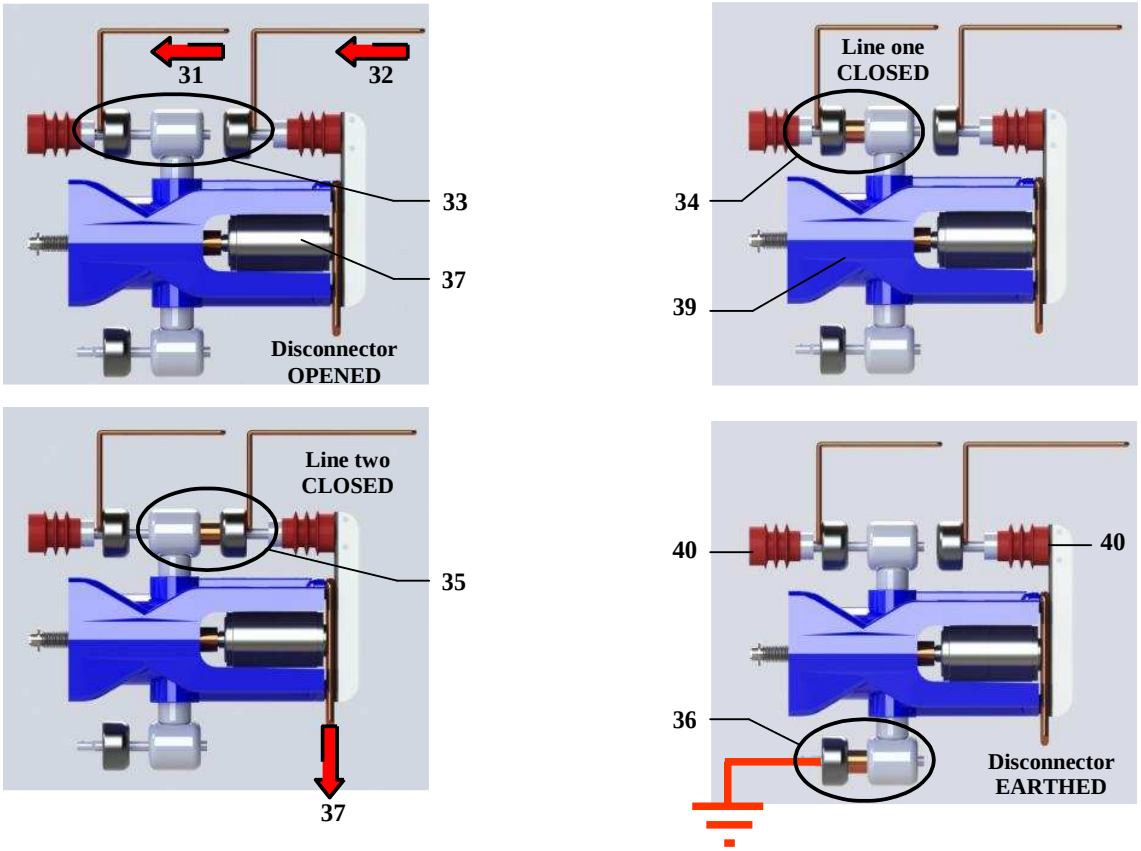




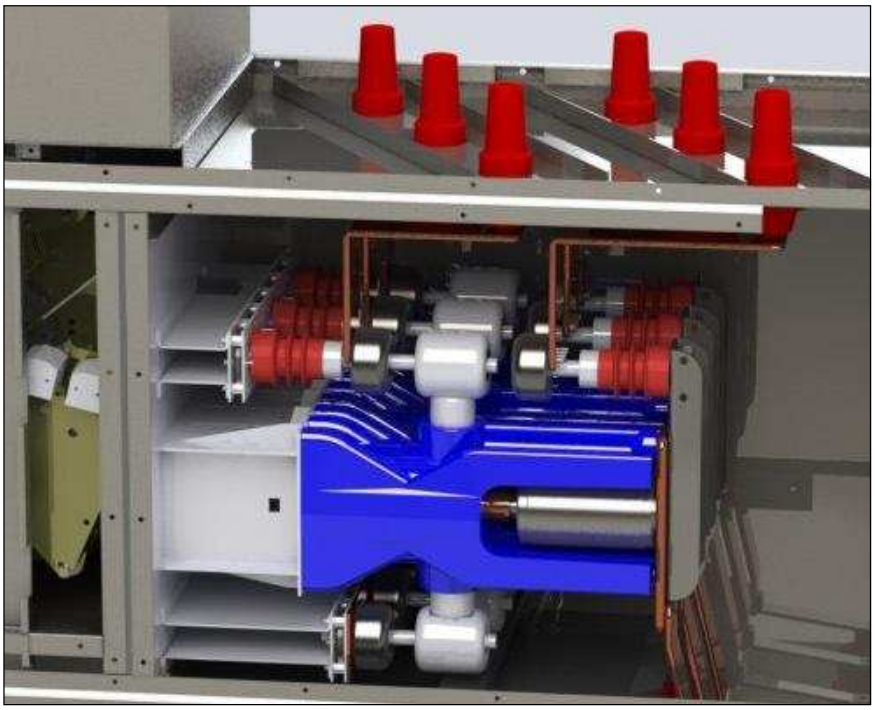
1	L.V. compartment
2	Bushing for busbar 1
3	Bushing for busbar 2
4	Operating mechanism compartment
5	Three position disconnector (1- 0 - 2)
6	Circuit breaker
7	Door for cable compartment
8	Cable compartment
9	Cable connection
10	Earth busbar
11	Voltage transformer (VT)
12	Protection relay
13	Position indicator for three position disconnector
14	Actuator for the springs charging of the circuit breaker
15	Manual op. and cl. disconnector

16	On - Off push button for circuit breaker
17	Mechanical spring charged indicator
18	Key lock (key free with C.B. opened)
19	Position indicator for circuit breaker
20	Nameplate
21	Operation counter
22	Gas level indicator
23	Current transformer (CT)
24	VT three position disconnector
25	Key lock (key free with earthing switch closed)
26	Key lock (key free with disconnector closed)
27	Manual op. and cl. Earthing switch
28	Position indicator for earthing switch
29	Voltage indicator
30	Earthing switch disconnector

COMPONENTS double busbar module



31	Line 1 IN / OUT	36	Earthing switch closed
32	Line 2 IN / OUT	37	Vacuum interrupter
33	Disconnector in open position	38	Line OUT / IN
34	Disconnector in line one closed	39	Pole support
35	Disconnector in line two closed	40	Insulating support



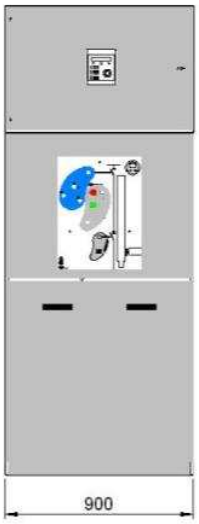
Technical data

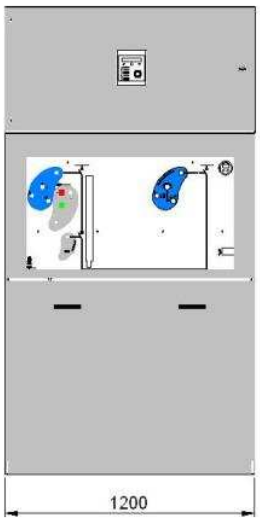
Main characteristics							
Mechanical and Electrical Characteristics	U.M.						
	kV	7,2	12	12 (1)	17,5	24	36
Altitude **IEC 62271-1**	m	<1000 (5)					
Ambient air temperature **IEC 62271-1**	°C	-25 ÷55 (2)					
Relative humidity	%	95					
Insulation Rated Voltage	kV	7,2	12	12	17,5	24	36
Rated Voltage	kV	7,2	12	12	17,5	24	36
Lightning impulse withstand voltage between phases and towards the ground	kV	60	75	95	95	125	170
Lightning impulse withstand voltage across the isolating distance	kV	70	85	110	110	145	195
Power frequency withstand voltage between the phases	kV	20	28	42	38	50	70
Power frequency withstand voltage across the isolating distance	kV	23	32	48	45	60	80
Rated Frequency	Hz	50-60					
Rated current	A	1250 - 2500					1250 - 2000
Rated short time withstand current I_k	kA	25 / 31.5 (7)					
Rated peak withstand current I_P (making capacity)	kA	2.5 x I_k (4)					
Rated duration of short circuit t_k	s	3 / 1 (7)					
Degree of protection on front face	IP	3X (3)					
Degree of protection on electrical MV circuits	IP	67					
Mechanical operation **Earthing switch IEC 62271-102**		1.000 operations / Class M1					
Electrical operation **Earthing switch IEC 62271-102**		making capacity 5 / Class E2 (6)					
Mechanical operation **Circuit breaker IEC 62271-100 CB module**		M1 (2000 operation) - M2 / 10,000 operations					
Electrical operation **Circuit breaker IEC 62271-100 CB module**		Class E2 (1)					
Making & Breaking on fuse switch **TF / FM module**	kA rms	25	25	25	25	25	20
Breaking at rated transfert current **($I_{tranfer}$) TF / FM module**	A	2100	1800	1800	1600	1400	840
Rated operating sequence **Circuit breaker IEC 62271-100**		O - 0,3s - CO - 15s - CO					
Internal arc withstand current (kA - 1s)	kA	25					

(1) For Asian market
(2) For temperature > of 40°C contact SEL for Admissible current value
(3) IP 4X on request
(4) For earthing switch by closing Circuit-breaker
(5) Only for air insulated unit if any
(6) By closing Circuit-breaker
(7) 25kA 3sec. - 31.5kA 1sec.

Modules and accessories

Encoding of modules





CODE COMPOSITION (example)

PREFIX	Module (1)	/	Busbar System (2)	kA (3)	A (4)	kV (5)	front width (6)
TPRP	CB	/	01	H	K	W	06

Module (1)	Description
CB	Circuit breaker module
BS	Busbar sectionalizer
CBS	Busbar sectionalizer with circuit breaker
DS	Disconnector
FM	Switch disconnector with fuses and VT
M	Measuring module
BC	Busbar coupler
TF	Transformer feeder with switch disconnecTor and fuses

Busbar system (2)		
Single busbar system	=	**1**
Double busbar system	=	**2**

kA (3)		
25	=	**H**
31.5	=	**T**

A (4)		
1250	=	**K**
1600	=	**L**
2000	=	**M**
2500	=	**R**

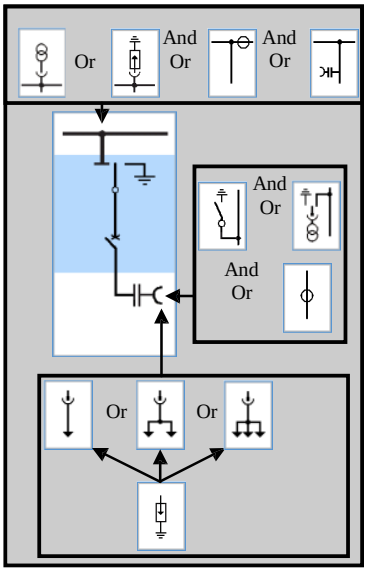
kV (5)		
12	=	**V**
24	=	**W**
36	=	**N**

Front width mm (6)		
600	=	**06**
900	=	**09**
1200	=	**12**

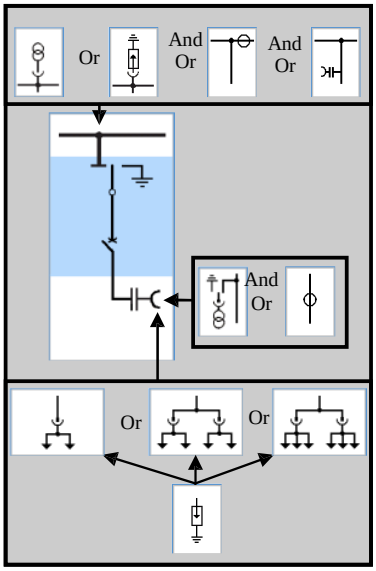
Modules and accessories

CB
CIRCUIT BREAKER MODULE

SINGLE BUSBAR

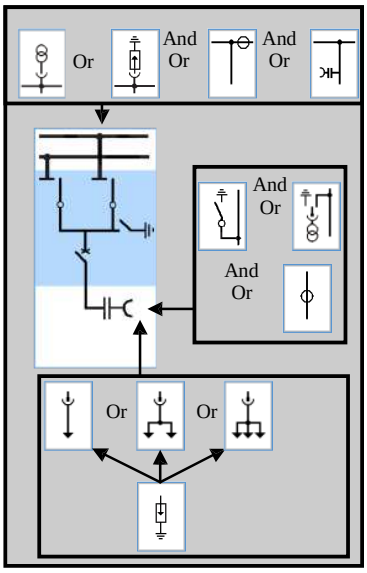


1250A

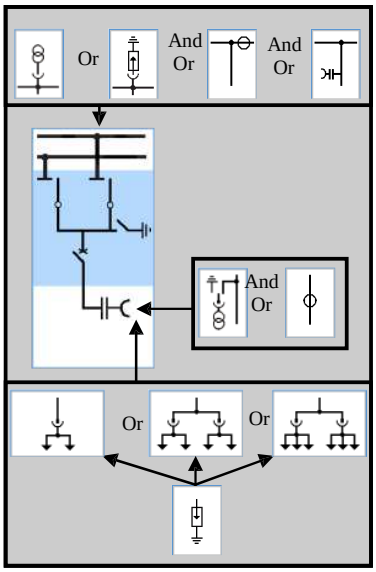


2500A

DOUBLE BUSBAR



1250A



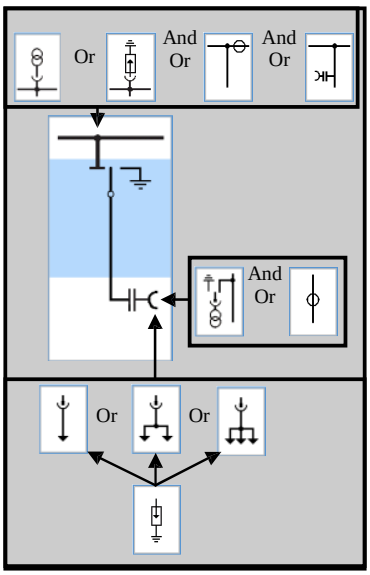
2500A

LEGEND

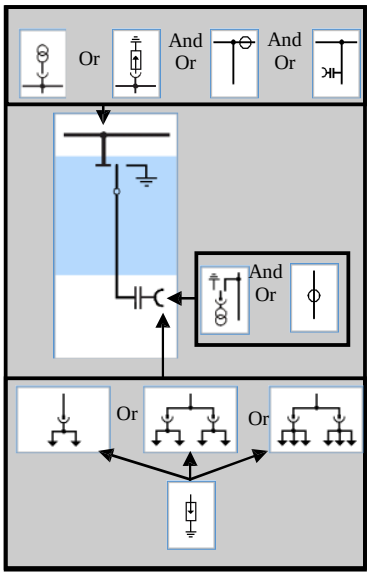
- Voltage indicator
- Voltage indicator
- Voltage indicator
- Plug-in voltage transformer
- Disconnectable and Plug-in voltage transformer
- Current transformer (CT)
- Current transformer (CT)
- Current transformer (CT)
- Surge arrester
- Surge arrester
- Three position dis-connector
- Three position switch disconnector
- Circuit breaker
- Busbar earthing switch
- Cable connection with outside-cone plugs
- Cable connection with outside-cone plugs
- Cable connection with outside-cone plugs

Modules and accessories

DS
DISCONNECTOR MODULE



1250A



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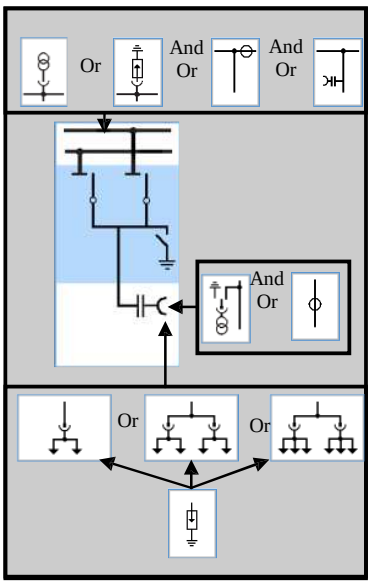
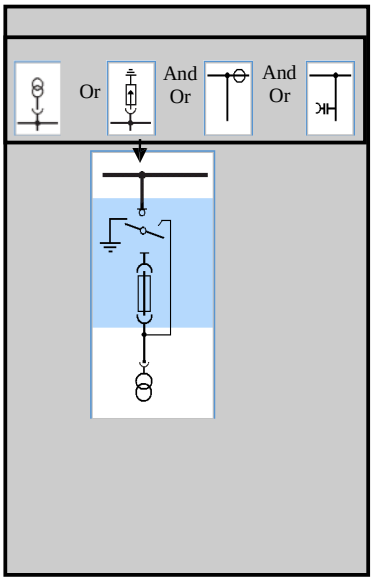


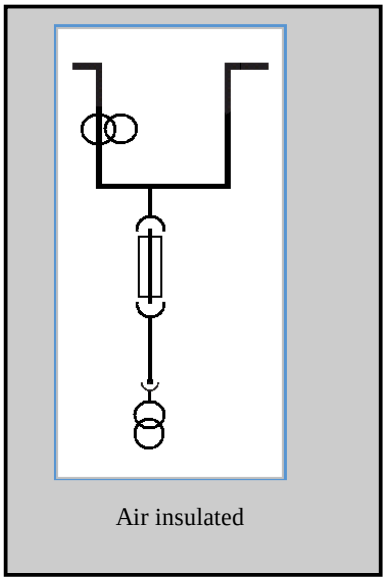
2500A

Measuring Module

FM

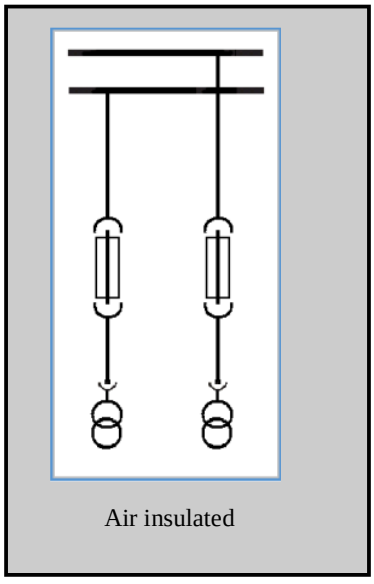


M



Air insulated

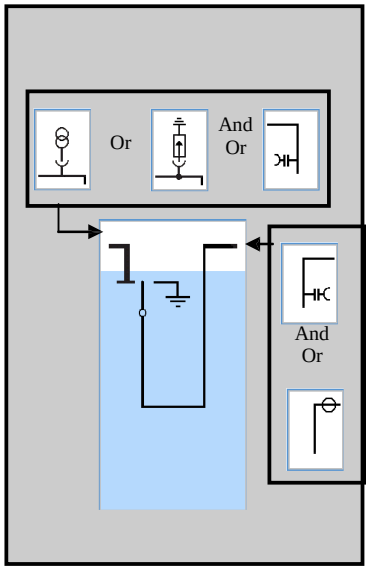
M



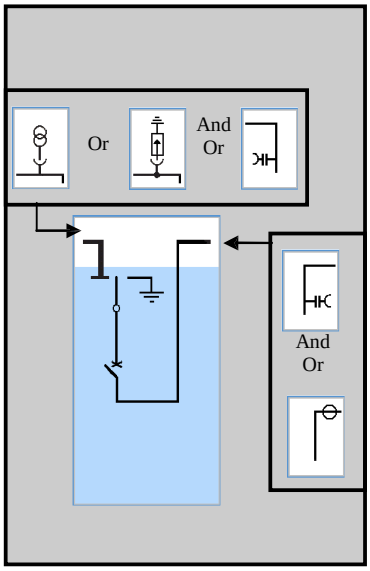
Air insulated

Modules and accessories

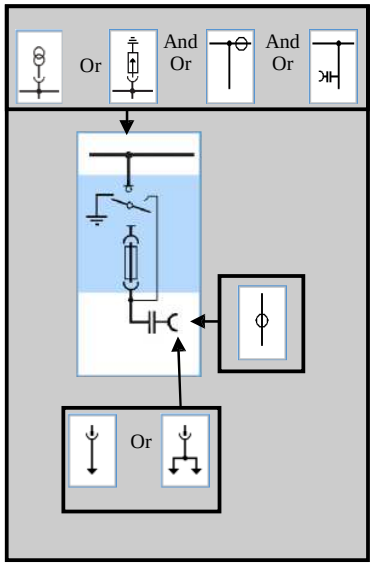
BS
Bus bar sectionalizer



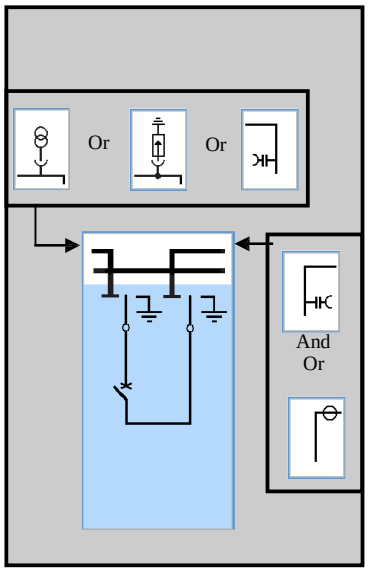
CBS
Bus bar sectionalizer with Circuit breaker



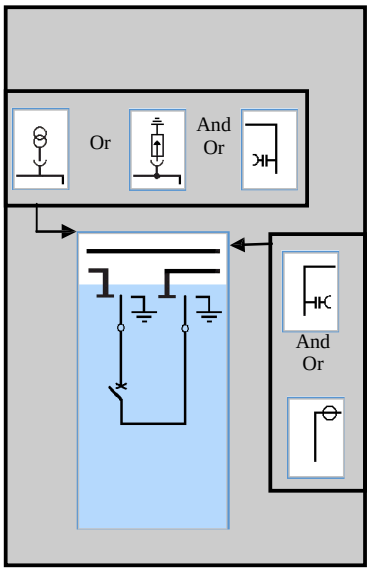
TF Transformer feeder with fuses switch



CBS
Bus bar sectionalizer with Circuit breaker

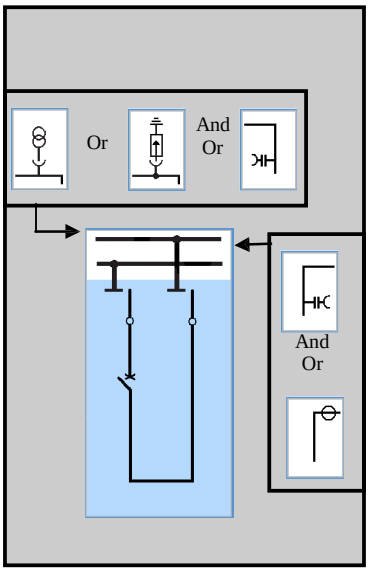


1250/2500A



1250/2500A

BC
Busbar coupler



1250/2500A

Accessories

Single and double Busbar system

Screened cross- and end-adapter

Screened busbar for SF6 insulated switchgears with metal housing.

System voltage up to 36 kV, rated current up to 2500A.

The cross or end adapter can be coupled by the coupling pieces to raise the current per phase.

With the screened busbar end an extensible termination of the switchgear field is realisable.

Further high-voltage tests at the switchgear are possible.

Surge Arresters

Surge arresters with silicone rubber connector housing.

Incoming over voltage waves and voltage increase by reflection are limited.

Minimum total length is achieved by direct link of the surge arrester onto cross- or end adapter.

extremely short installation depth

quick and easy assembly

integrated stress control system

capacitive measuring point

Accessories	Module					
	Circuit breaker	Disconnector	Busbar coupling	Transformer feeder	Measuring module	Voltage measuring with switch disc.
Current Transformers	O	O	O	O	O	-
Voltage Transformers	O	O	O	O	O	-
Motor drive mechanism for disconnector	O	O	O	-	-	-
Motor drive mechanism for Circuit breaker	O	-	O	-	-	-
Motor drive mechanism for switch disconnector	-	-	-	O	-	O
Shunt opening release	X	-	X	O	-	O
2° Shunt opening release	O	-	O	-	-	-
Shunt closing release	O	-	O	O	-	O
Undervoltage release	O	-	O	-	-	-
Voltage indicator	X	X	X	X	O	X
Auxiliary contacts on circuit breaker	X	-	X	-	-	-
Auxiliary contact on disconnector / switch disconnector	X	O	X	O	-	O
Auxiliary contact on earthing switch	O	O	O	O	-	O
Key lock	O	O	O	O	-	O
Padlock holder	O	O	O	O	-	O
Fuses holder	-	-	-	X	O	X
Fuses	-	-	-	O	O	O

O = Optional X = Standard - = Not applicable

Busbar system

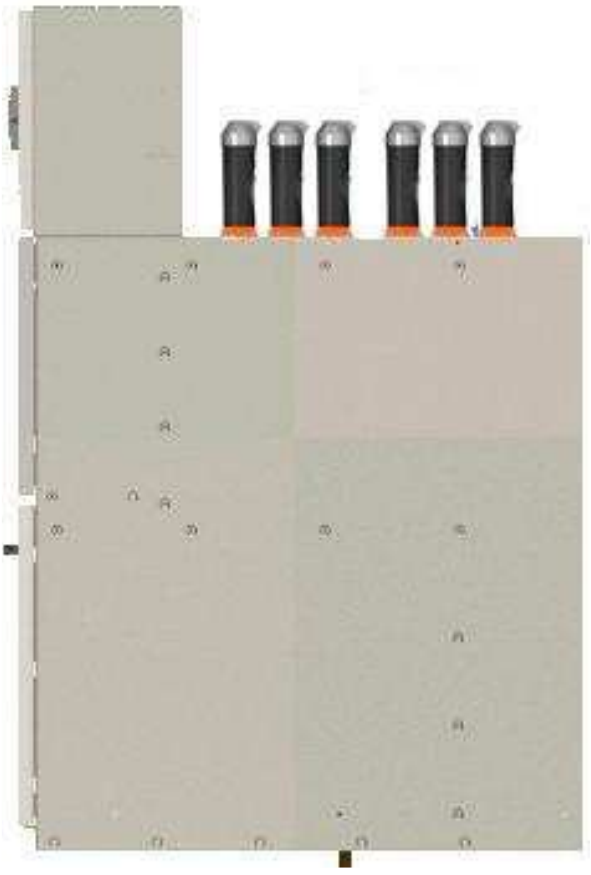
Single busbar system

Accessories

Current transformers
Voltage transformers
Surge arresters
Cable with straight plug or T plug
Full insulated bars

Features

1 pole plug in and bolted design
Consisting of round bar copper, insulated by means of silicon rubber
Field control by means of electrically conductive layers on the silicone rubber insulation (both inside and outside)
Touchable as the external layesrs are earthed with the switchgear vessel
Unsensitive to pollution and condensation
Safe to touch due to metal cover
Switchgear extension or panel replacement is possible without SF6 gas work.



Double busbar system

Current transformers

CT Mounting location
At the busbar
At the panel connection
Around the cable

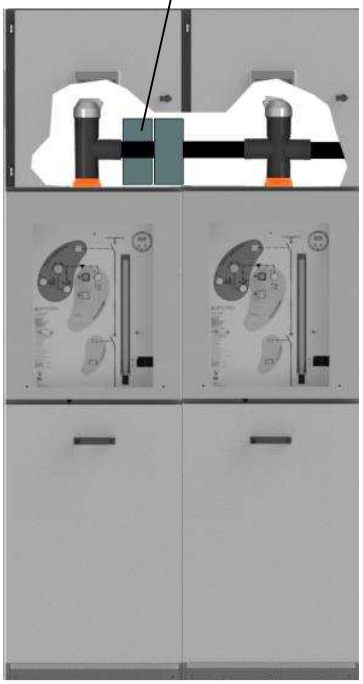
Current Transformer

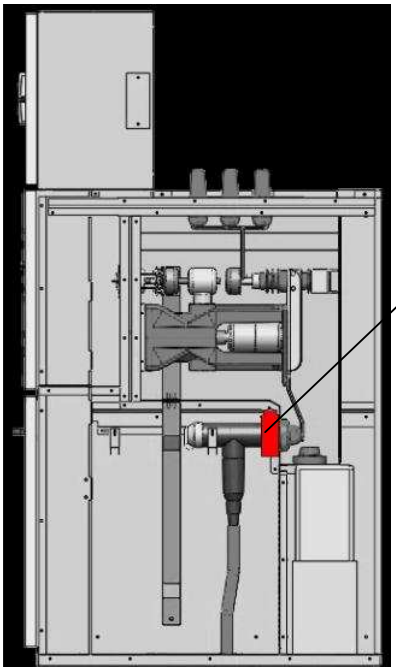
Features

- According to IEC 60 044-1 and VDE 0414 Part 1
- Designed as ring-core current transformers, single-pole
- Free of dielectrically stressed cast-resin parts (due to design)
- Insulation class E
- Inductive type
- Certifiable
- Climate-independent
- Secondary connection by means of a terminal strip inside the panel

Installation

- Arranged outside the primary enclosure (switchgear vessel)





Rated short-duration power-frequency withstand voltage (winding test)	3 kV
Rated frequency	50/60 Hz
Rated continuous thermal current	max. 1.2 x
Rated thermal short-time current,max. 3 s	max. 31.5 kA
Rated currentDinamic (primary)	Unlimited 40 A to 2500 A
Rated current dynamic secondary	1 A and 5 A

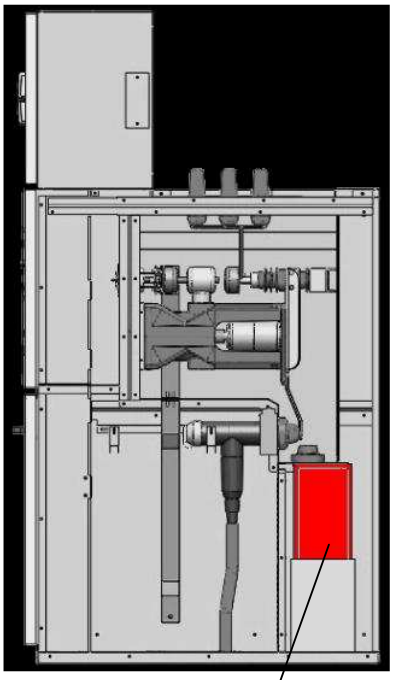
Core data according to rated primary current:		max. 3 cores
Measuring core	Rating	2.5 VA to 10 VA
	Class	0.2 to 1
Overcurrent factor		FS 10
Protection core	Rating	2.5 VA to 30 VA
	Class	5 P or 10 P

Voltage transformers

Voltage Transformer

Features

According to IEC 60 044-2
Designed as single-pole voltage transformers, plug-in type
Metal-enclosed, safe-to-touch
Connection system with plug-in contact
Inductive type
Certifiable
Climate-independent
Secondary connection by means of plugs inside the panel
Cast-resin insulated
Arranged outside the primary enclosure (switchgear vessel)



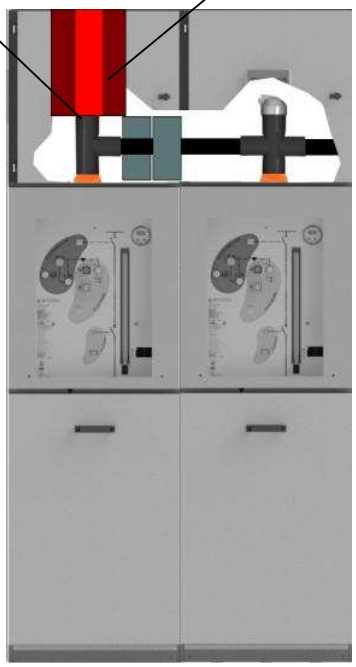
Data sheet (*)

Rated primary voltage	2√3 to 36√3 kV
Rated secondary voltage	100/ √3 V
	110/ √3 V
	120/ √3 V
	190/ √3 V
	100/3V
	110/3V
	120/3V
	190/3V
Insulation level	Max. 36 /170 / 195 kV
Rated voltage factor	1.9$U_{n/}$ 8h
Rated frequency	50...60Hz
Accuracy class	0.2 - 0.5 - 1
Rated output burden	5 to 75 VA

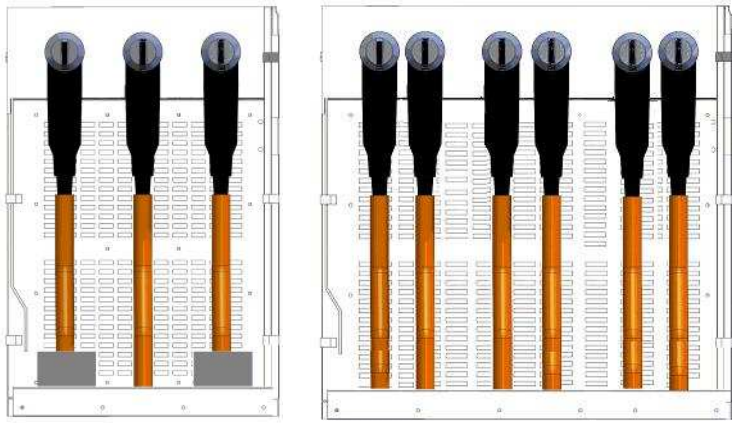
(*) For different characteristics contact us

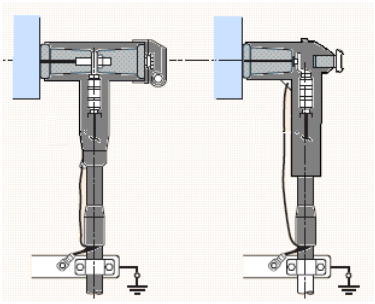
VT Mounting location
At the busbar
At the panel connection

Voltage transformer adapter for connection of voltage transformers on to end- or cross adapter.



Cable connection





Connection with 1 cable / phase

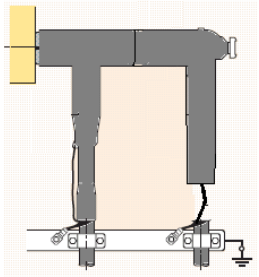
Features

Bushings with outside cone
With bolted contact (M16) as interface type .C. according to EN 50 180 / EN 50 181

• **Option:**
Access to the cable connection compartment only if the feeder has been isolated and earthed

For thermoplastic-insulated cables
For cable T-plugs or cable elbow plugs with bolted contact
For connection cross-sections up to 630mm (standard)
Cable routing downwards, cable connection from the front

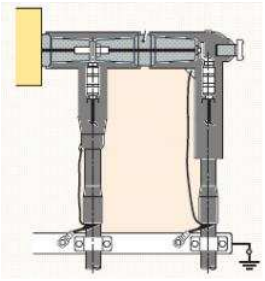
• For rated normal currents up to 2500 A
• Cable plugs, cable sealing ends and cable clamps are not included in the scope of supplì



Connection with
1 cable / phase
+ surge arresters

Surge arresters

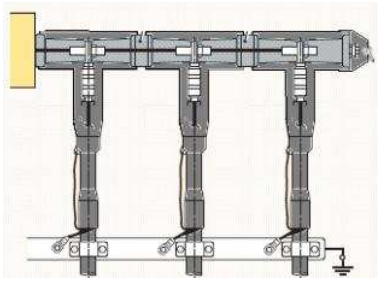
Can be plugged into the cable T-plug
Surge arresters are recommended if, at the same time
The cable system is directly connected to the overhead line,
The protective range of the arrester at the terminal tower of the overhead line does not cover the switchgear



Connection with 2 cable / phase

Surge limiters

Can be plugged into the cable T-plug
Surge limiters are recommended if motors with starting currents < 600 A are connected



Connection with 3 cable / phase

Protection relay



All the relays used are well-known brands with high level of safety and reliability.
The protection relay is installed in the LV compartment located on the top of the switchgear.

Gas Level indicator

GLI/LCD connected to a pressure or density switch allow to have local indication like a manometer but at request.
Only when the indication is required by pressing density check push button you get proper info on LCD display.
This indication is generated by internal electronic circuitry and disappear 3s after pressing.
It has typically 2 level indications for low and alarm gas level situation.

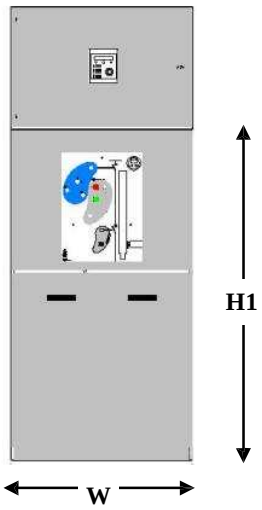
Easy to mount on a metal panel is insensitive to dust, temperature variations, shock and vibrations.
This heavy duty features allow to be used in industrial polluted environments without suffering typical problem of traditional manometer.
The indication is clear because you don't have to read an analogical indication but you get at once the gas threshold level.
It can be easily connected to any pressure or density switch because it requires only a dry NO contact to work and the accuracy is the same of linked switch.

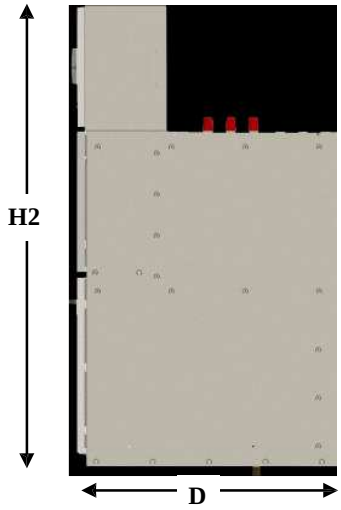
Phase comparator

Verification of correct terminal-phase connections
• Verification of correct terminal-phase connections possible by means of a phase comparison test unit
(can be ordered separately)

• Safe-to-touch handling of the phase comparison test unit by inserting it into the capacitive taps (socket pairs) of the switchgear

Dimensional data



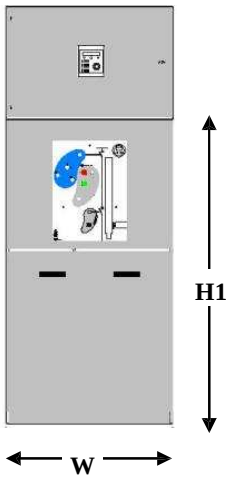


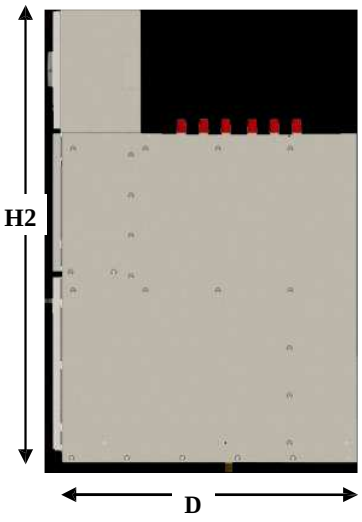
Single busbar

Due to continuous development of our products the dimensions of the switchgear should be considered approximate.
Sel reserves the right to modify the dimensions at any time.

The dimensions should be considered binding only after the creation of executive drawings of each project.

	1250A				2000A				2500A			
Module (1)	**W**	**H1**	**H2**	**D**	**W**	**H1**	**H2**	**D**	**W**	**H1**	**H2**	**D**
CB	600	1635	2250	1225	600/900	1635	2250	1225	900	1635	2250	1225
BS	900	1635	2250	1225	900	1635	2250	1225	1200	1635	2250	1225
CBS	900	1635	2250	1225	1200	1635	2250	1225	1200	1635	2250	1225
DS	600	1635	2250	1225	600	1635	2250	1225	900	1635	2250	1225
FM	600	1635	2250	1225	600	1635	2250	1225	600	1635	2250	1225
M	1200	1635	2250	1225	1200	1635	2250	1225	1200	1635	2250	1225
BC	-	-	-	-	-	-	-	-	-	-	-	-
TF	600	1635	2250	1225	600	1635	2250	1225	600	1635	2250	1225





Double busbar

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	1250A				2000A				2500A			
Module (1)	**W**	**H1**	**H2**	**D**	**W**	**H1**	**H2**	**D**	**W**	**H1**	**H2**	**D**
CB	600	1635	2250	1840	600/900	1635	2250	1840	900	1635	2250	1840
BS	900	1635	2250	1840	900	1635	2250	1840	1200	1635	2250	1840
CBS	900	1635	2250	1840	1200	1635	2250	1840	1200	1635	2250	1840
DS	600	1635	2250	1840	600	1635	2250	1840	900	1635	2250	1840
FM	600	1635	2250	1840	600	1635	2250	1840	600	1635	2250	1840
M	1200	1635	2250	1840	1200	1635	2250	1840	1200	1635	2250	1840
BC	900	1635	2250	1840	1200	1635	2250	1840	1200	1635	2250	1840
TF	600	1635	2250	1840	600	1635	2250	1840	600	1635	2250	1840

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