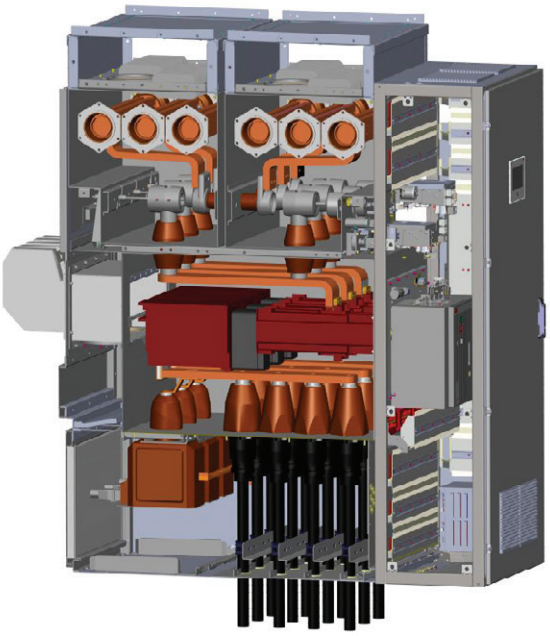
GAS-INSULATED MEDIUM VOLTAGE SWITCHGEAR

ZX2

Single busbar systems up to 5000 A

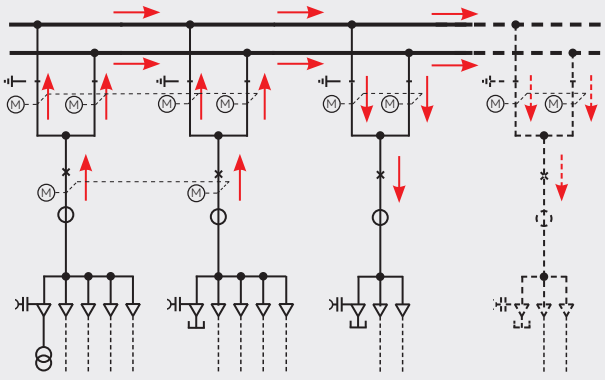


The permissible rated busbar current of the proven switchgear type ZX2 is increased by parallel connection of the two busbar systems. The two physical busbar systems are combined electrically into a single busbar system. The current carrying capacity of the busbar in this application is up to 5000 A under standard conditions.

Functionality

Incoming feeder panels
The current flowing from the cable sockets is supplied to the parallel busbars via the circuit-breaker and via both disconnectors - in this case operated in parallel. The total load is divided equally between the two busbars. For feed-in currents greater than 2500 A, two feed-in fields are required. The four disconnectors of both panels and their circuit-breakers are operated in parallel.

Outgoing feeder panels
The current from both parallel busbars flows through both circuit-breakers and across the circuit-breaker in the direction of the cable sockets.



Incoming feeder panels - consisting of two panels

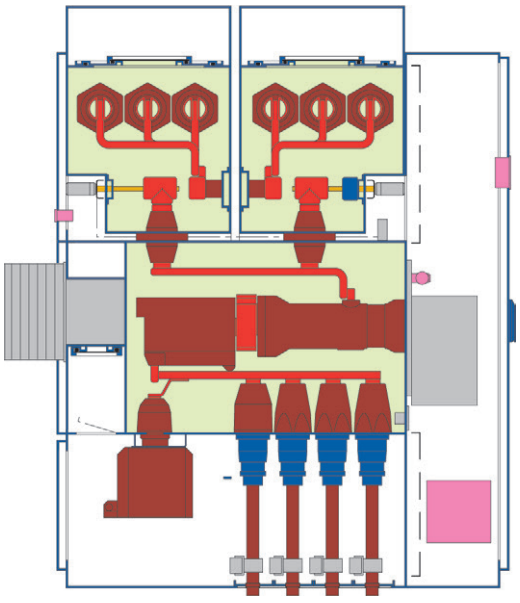
Outgoing feeder panels

General technical data	
Rated voltage	... 40.5 kV
Rated frequency	50/60 Hz
Rated short-time withstand current	... 40 kA
Rated normal current (Incoming feeder panel consisting of two panels)	... 5000 A
Rated normal current of busbar	... 5000 A
Ambient air temperature, maximum	+40 °C
Site altitude	... 1000 m

Cooling measures

The necessary cooling measures for a rated normal current up to 4000 A and 5000 A can be found in the following tables.

Incoming feeder panel with heat sink at the circuit-breaker compartment, panel width 840 mm



Technical data and cooling measures for a rated current up to 4000 A at 50/60 Hz and 40 °C ambient temperature

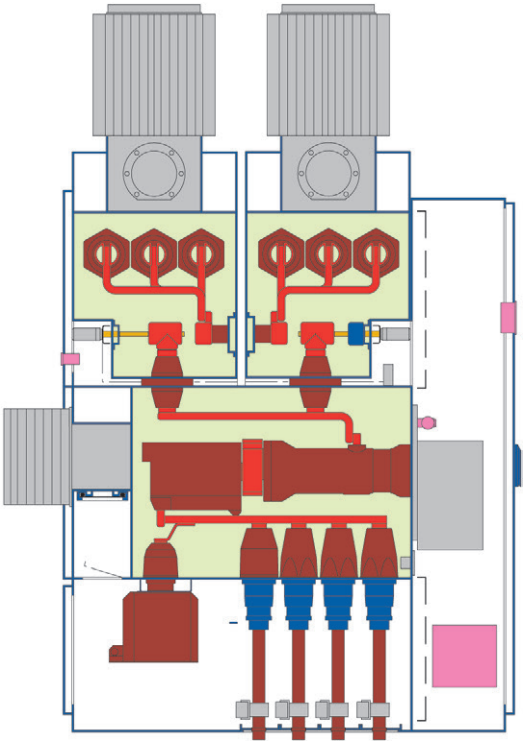
Panel type	Rated normal current	Panel width	Cooling measures
Outgoing feeder panel	1250 A 1250 A 2 x 630 A	600 mm 800 mm 2 x 400 mm	none
Incoming / Outgoing feeder panel	2000 A	800 mm	none
Incoming feeder panel	2500 A	840 mm	Heat sink at the circuit-breaker compartment
Incoming feeder panel	4000 A	2 x 800 mm	none
Sectionalizer / Riser panel	4000 A	4 x 800 mm	Heat sink at the circuit-breaker compartment

1 With heat sink at the circuit-breaker compartment: 2210 mm
2 Dimension with absorber, with tall heat sinks on the busbar compartments: 2870 mm, Voltage transformers on the busbar compartments unconsidered

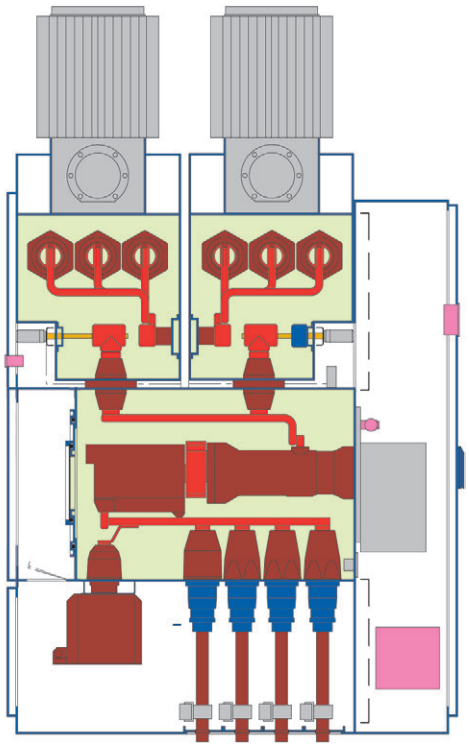
Technical data and cooling measures for a rated current up to 5000 A at 50/60 Hz and 40 ° C ambient temperature

Panel type	Rated normal current	Panel width	Cooling measures
Outgoing feeder panel	1250 A 1250 A 2 x 630 A	600 mm 800 mm 2 x 400 mm	Depending on the rated frequency, low (at 50 Hz) or tall (at 60 Hz) heat sinks on the busbar compartments
Incoming / Outgoing feeder panel	2000 A	800 mm	Depending on the rated frequency, low (at 50 Hz) or tall (at 60 Hz) heat sinks on the busbar compartments
Incoming feeder panel	2500 A	840 mm	Heat sinks at the circuit-breaker compartment and - depending on the rated frequency - low (at 50 Hz) or tall (at 60 Hz) heat sinks on the busbar compartments
Incoming feeder panel	5000 A	2 x 840 mm	Heat sinks at the circuit-breaker compartment and tall heat sinks on the busbar compartments

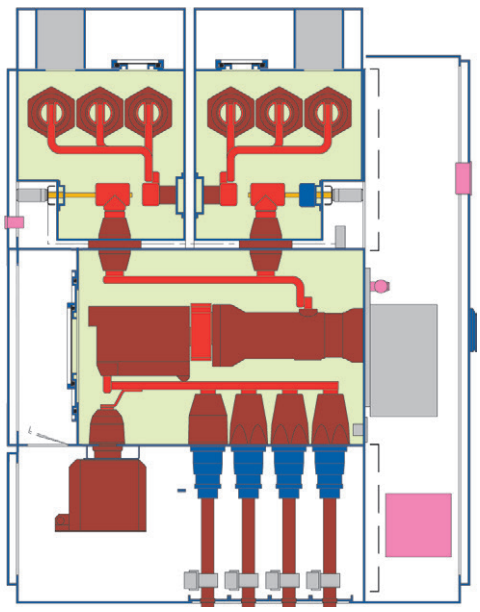
Incoming feeder panel for a rated current of 5000 A with heat sinks at the circuit-breaker and bus-bar compartments, panel width 840 mm (two panels are required)



Example of a panel (rated normal current 2000 A) with tall heat sinks on the busbar compartments for a rated frequency of 60 Hz



Example of a panel (rated normal current 2000 A) with low heat sinks on the busbar compartments for a rated frequency of 50 Hz



When planning, observe the following boundary conditions and properties of the panels

- Control and interlocking is done exclusively with the protection and control unit REF or REX.
- The motorized operation of the three-position disconnect of a panel always takes place in the same direction.
- An emergency “OFF” operation takes place directly on the circuit-breaker.
- A mechanical “ON” operation of the circuit-breaker or a mechanical operation of the three-position disconnect is not possible (a manual emergency operation of the three-position disconnect is possible after a lock release).

Observe the following issues regarding parallel panels

- Both panels have their own current detection, protection and control.
- The faster protection system triggers both circuit-breakers.
- An electrical on-site operation takes place at the display (one of the two parallel panels is equipped with a display panel).
- An emergency “OFF” operation takes place directly on one of the two circuit-breakers.

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