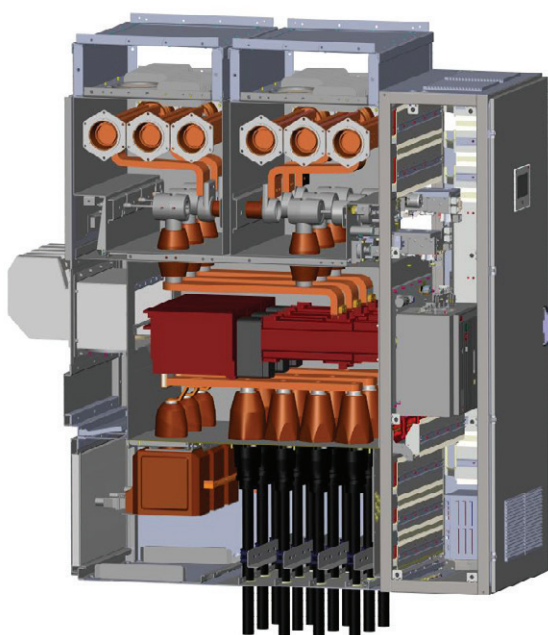


GAS-INSULATED MEDIUM VOLTAGE SWITCHGEAR

ZX2

Single busbar systems up to 5000 A for the US market



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.

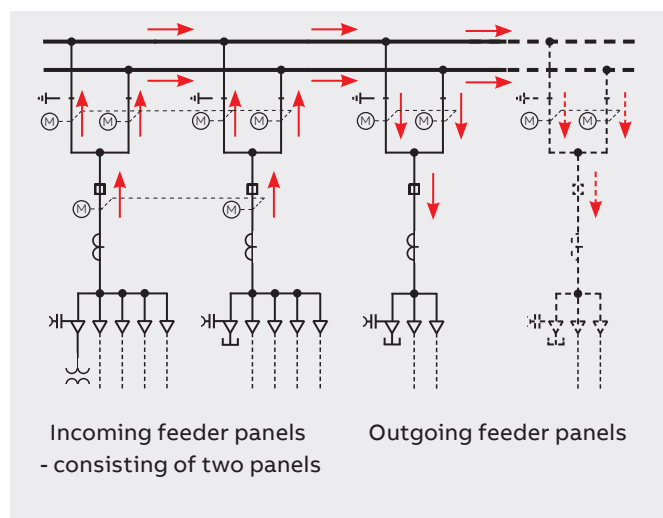
Functionality

Incoming feeder panels

The current flowing from the cable sockets is supplied to the parallel busbars via the circuit-breaker and via both disconnects - 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 disconnects 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.





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	104 °F / +40 °C
Site altitude	... 3281 ft

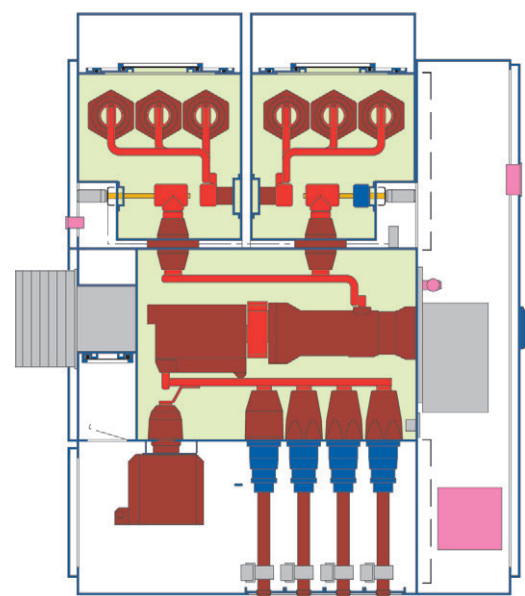
Cooling measures

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

Technical data and cooling measures for a rated current up to 4000 A at 50/60 Hz and 104 °F ambient temperature

Panel type	Rated normal current	Panel width	Cooling measures
Outgoing feeder panel	1200 A	23.62 in 31.50 in	none
Incoming / Outgoing feeder panel	2000 A	31.50 in	none
Incoming feeder panel	2500 A	33.07 in	Heat sink at the circuit-breaker compartment
Incoming feeder panel	4000 A	2 x 31.5 in	Heat sink at the circuit-breaker compartment
Sectionalizer / Riser panel	4000 A	4 x 31.5 in	Heat sink at the circuit-breaker compartment

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

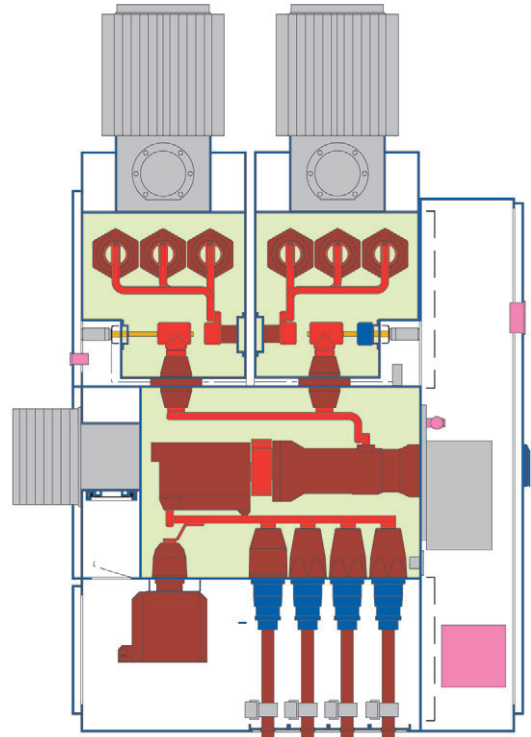


1 With heat sink at the circuit-breaker compartment: 87 in
 2 Dimension with absorber, with tall heat sinks on the busbar compartments: 113 in,
 Voltage transformers on the busbar compartments unconsidered

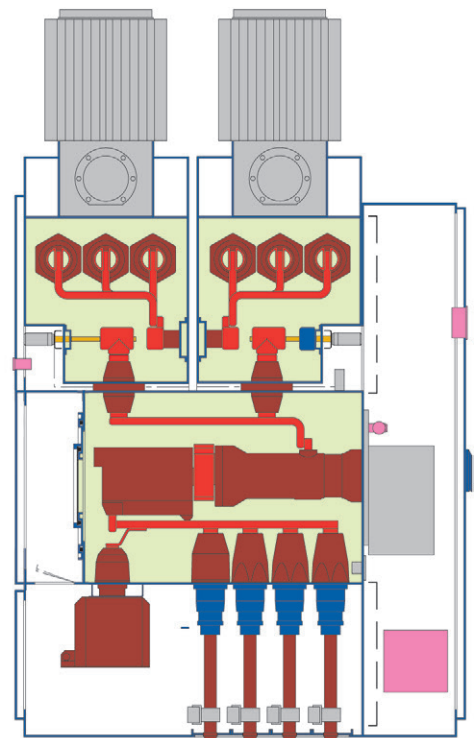
Technical data and cooling measures for a rated current up to 5000 A at 50/60 Hz and 104 °F ambient temperature

Panel type	Rated normal current	Panel width	Cooling measures
Outgoing feeder panel	1250 A	23.62 in 31.50 in	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	31.5 in	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	33.07 in	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 33.07 in	Heat sinks at the circuit-breaker compartment and tall heat sinks on the busbar compartments

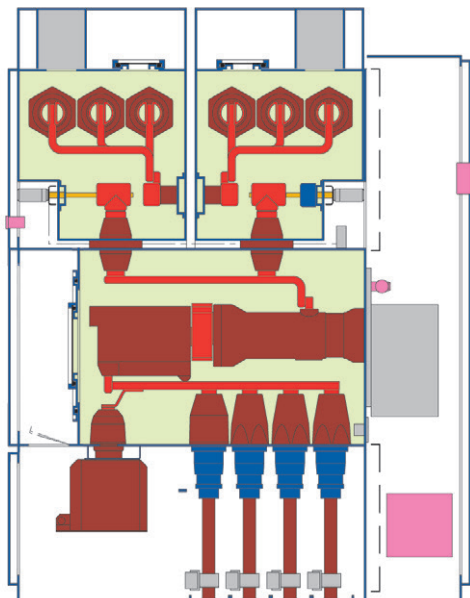
Incoming feeder panel for a rated current of 5000 A with heat sinks at the circuit-breaker and busbar compartments, panel width 33.07 in (two panels are required)



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.