

GL309c SWITCHER

72.5 kV SF₆-free Live Tank Circuit Switchers down to -58°F

A SF₆-free Solution to Reduce Carbon Footprint

More and more electrical grid operators are taking action against climate change and are setting ambitious goals to cut their greenhouse gas emissions. As one of the major grid original equipment manufacturers, Grid Solutions, a GE Vernova business, is in the best position to support them in moving a step closer to reaching their carbon reduction targets by building the transmission infrastructure necessary to connect and transport renewable energy, while avoiding the addition of tons of CO₂ equivalent to their grid. Benefiting from more than 60 years of expertise in SF₆ and ten years in SF₆-free technology, we innovate in developing a range of SF₆-free products suitable for all climates, including temperatures down to -58°F.

GE Vernova's live tank circuit switchers are circuit breakers without short-line fault capabilities for outdoor installation. GL309c switchers belong to our SF₆-free live tank circuit-switcher portfolio for applications within networks at 72.5 kV rated voltages. They are designed for outdoor installation. They have the same dimensions as SF₆ solutions, which means that they can be installed in place of SF₆ circuit switchers. Their composite insulators allow higher dielectric withstand under pollution and provide higher safety for employees at substation. GL309c switchers feature the latest double-motion interrupting technology and our tri-pole or single-pole spring-operated F K mechanisms while benefiting from our latest development in SF₆ and SF₆-free circuit switchers. Moreover, the same monitoring solutions are provided as for SF₆ circuit switchers.

The Right Choice for Temperatures down to -58°F

Even under extreme conditions and climates or in highly active seismic areas, customers can rely on our live tank circuit switchers. GL309c live tank circuit switchers are designed for temperatures down to -58°F and up to 104°F.

Quality and Testing

Our live tank circuit switchers meet the latest versions of national and international standards, such as IEC 62271-100.

The entire development and production procedures are fully compliant with the latest ISO 9001, ISO 14001 and OHSAS 18001 quality standards.



GE VERNOVA



Decarbonization through innovation

- GL SF₆-free Live Tank circuit switchers are part of GRiDEA, our portfolio of solutions designed to accelerate the decarbonization of the grid
- SF₆-free products enable considerable reduction in carbon footprint over the complete life cycle compared to the equivalent SF₆ range

High Safety Level

- Pressure relief device prevents injuries and damage in case of over-pressure within the circuit breaker
- Support frame design ensures that the personnel cannot be injured by motion of parts
- Dedicated tools available to assemble and disassemble the circuit switcher parts in safe condition
- Higher safety, seismic and pollution performance due to composite insulators

Easy Installation and Light Maintenance

- Transportation and handling as easy as SF₆ circuit switchers
- Spring-operated mechanism preset at factory - no adjustments necessary during installation and commissioning
- Circuit switcher pre-filled at factory before shipping
- Fill-in and top-up procedures same as for SF₆ + CF₄ circuit-switcher
- Specific fill-in valve design to avoid mis-operations
- Two-stage transducer densimeters are within easy reach, on the front side of the circuit breaker, for periodic/ regular check

Specifications

SWITCHER TYPE	GL309C
Switching and insulating medium	CO ₂ -O ₂
Rated maximum voltage	72.5 kV
Rated power frequency	60 Hz
Rated continuous current	up to 3,000 A
Rated short-circuit breaking current	up to 40 kA
Rated closing, latching and short time carrying current	108 kA
Rated duration of short-circuit	3 s
Transformer Limited Fault (TLF) compliant	4-12 kA
First pole to clear factor	1.3 - 1.5
Opening time	27 - 33 ms
Breaking time	60 ms
Closing time	<100 ms
Average ambient temperature	-58 °F up to +104 °F
Design altitude*	3281 ft.a.s.l.

*Standard values according to IEEE; Higher design altitudes on request

Components

- Interrupter chamber with self-blast system and reliable double motion technology
- Higher safety, seismic and pollution performance due to composite insulators
- Reliable M2 type-tested spring-operated mechanism with position indicator clearly visible from outside
- Pressure relief system for passive protection of substation and personnel
- Field-proven, temperature-compensated density monitor with two-stage transducer and three-color dial
- Easy access to the filling connection
- Non-return (check) valve on each pole column
- Independent disassembly of the interrupter chamber without having to remove the entire pole column is possible
- Mechanism housing made completely of aluminum
- Hot-dip galvanized steel support frame design prevents corrosion issues and provides high safety for employees and high protection against environmental ingress (e.g. ice)

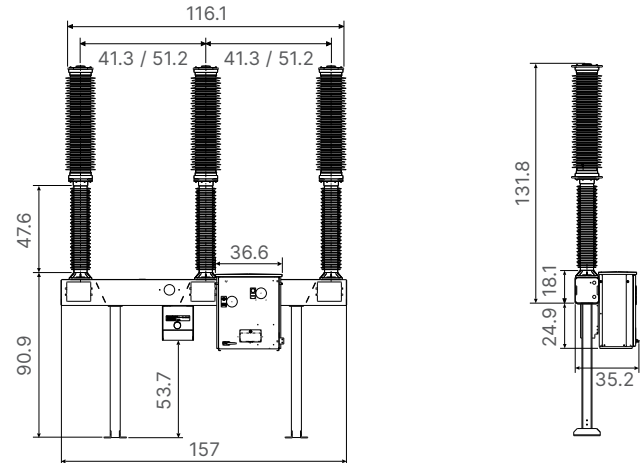
Technical Characteristics

- **Spring-operated mechanism / degree of protection:**
One FK 3-2 mechanism/ IP 55 or three FK3-1 mechanisms / IP55
- **Rated operating sequence:**
O-0.3s-CO-3min-CO resp. CO-15s-CO
- **Rated supply voltage:**
From 24 V up to 250 V dc/ac

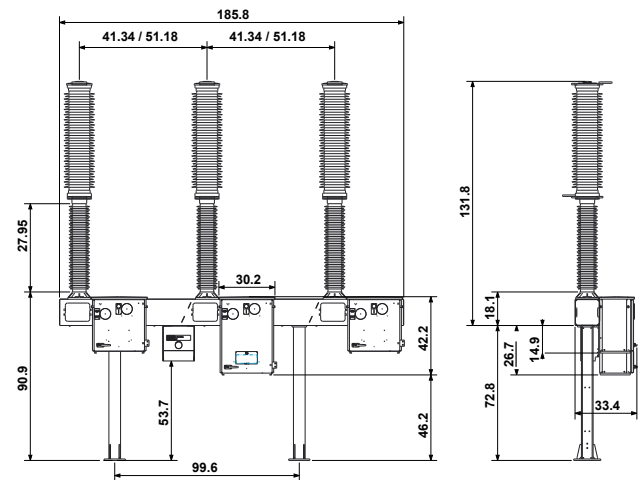
Product Options

- Monitoring system
- CSD100 controlled switching

Dimensions (in inches)



Gang-operated variant



IPO variant

* Other phase available on request

For more information, visit
gevernova.com/grid-solutions

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