Live tank circuit breakers ensure a high level of reliability every day. Even under extreme conditions and climates or in highly active seismic areas customers can count on live tank circuit breakers made by Grid Solutions.

The right choice for temperatures down to -55 °C

Live tank circuit breakers for outdoor installation are designed for temperatures down to -55 °C and feature the latest technologies in interrupter chambers and spring-operated mechanisms. For example, the latest double motion technology effectively reduces the opening energy by approximately 65%.

COMPONENTS

- Interrupter chamber with integral double motion technology and self-blast system
- Pressure relief system for passive protection of substation and personnel
- Field-proven, temperature-compensated density monitor with two-stage transducer and three-colour dial
- Easy access to the SF₆ filling connection (type DILO)
- SF₆ non-return (check) valve on each pole column
- Protected opening springs inside each pole column
- Hot-dip galvanised steel parts
- Mechanism housing made completely of aluminium
- Reliable spring-operated mechanism with position indicator clearly visible from outside

INSTALLATION AND MAINTENANCE

- Preset at factory before shipping - no adjustments necessary during installation and commissioning
- Pole units pre-filled with SF₆ at factory before shipping
- Independent disassembly of the interrupter chamber without having to remove the entire pole column
- Single-pole operated circuit breakers partially pre-assembled before delivery (base frame with mounted and wired mechanisms)

CUSTOMER BENEFITS

- Reliable even in the coldest regions:
  - -40 °C with pure SF₆
  - -55 °C with gas mixture
- Quick and easy installation and commissioning
- Long maintenance intervals

TESTING

Our live tank circuit breakers meet national and international requirement standards. This has been confirmed by comprehensive type tests according to the latest IEC, GOST and ANSI standards.

QUALITY

The entire development and production procedures for our live tank circuit breakers are fully compliant with the latest ISO 9001, ISO 14001 and OHSAS 18001 quality standards. This ensures the high quality of our products and services and is confirmed by regular audits.
CIRCUIT BREAKERS PRODUCT SOLUTIONS
GL 310, GL 311 and GL 312

**RATINGS**

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>100 kV</td>
<td>123 kV</td>
<td>145 kV</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50/60 Hz</td>
<td>50/60 Hz</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Rated normal current</td>
<td>up to 3150 A</td>
<td>up to 3150 A</td>
<td>up to 3150 A</td>
</tr>
<tr>
<td>Rated short-circuit breaking current</td>
<td>up to 40 kA</td>
<td>up to 40 kA</td>
<td>up to 40 kA</td>
</tr>
<tr>
<td>Rated short-circuit making current</td>
<td>104 kA</td>
<td>104 kA</td>
<td>104 kA</td>
</tr>
<tr>
<td>Rated duration of short-circuit</td>
<td>3 s</td>
<td>3 s</td>
<td>3 s</td>
</tr>
<tr>
<td>Opening time</td>
<td>28 ms</td>
<td>28 ms</td>
<td>28 ms</td>
</tr>
<tr>
<td>Break time</td>
<td>50 ms</td>
<td>50 ms</td>
<td>50 ms</td>
</tr>
<tr>
<td>Closing time</td>
<td>≤70 ms</td>
<td>≤70 ms</td>
<td>≤70 ms</td>
</tr>
<tr>
<td>Average ambient temperature *</td>
<td>-30 °C up to +40 °C</td>
<td>-30 °C up to +40 °C</td>
<td>-30 °C up to +40 °C</td>
</tr>
<tr>
<td>Design altitude *</td>
<td>1000 m.a.s.l.</td>
<td>1000 m.a.s.l.</td>
<td>1000 m.a.s.l.</td>
</tr>
</tbody>
</table>

* Standard values according to IEC; temperatures down to -55 °C up to +70 °C and / or higher design altitudes available on request

**TECHNICAL CHARACTERISTICS**

- Spring-operated mechanism / degree of protection: FK 3 / IP 55
- Rated operating sequence: 0-0.3s-CO-3 min-CO resp. CO-15s-CO
- Rated supply voltage: from 24 up to 250 V dc/ac

**PRODUCT OPTIONS**

- Composite insulators
- More phase centre distances available on request
- CBWatch2 monitoring system
- RPH3 controller (F3)

For more information please contact GE Grid Solutions

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