Embedded Poles
Embedded Poles

- High dielectric strength without any further external measures
- Optimum protection of the vacuum interrupter from moisture, dust and external damage
- Suitable for different climatic conditions and altitudes of site
- High reliability and long life
Embedded Poles

Easy adaption to circuit-breaker

Maintenance-free

High quality standard

Manufacturing Execution System (MES) enabled

Efficient increase of the dielectric strength without usage of green-house gas
## Embedded Poles

For indoor application (standard)

<table>
<thead>
<tr>
<th>PT1</th>
<th>P3</th>
<th>P4</th>
<th>P4-S</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="807x233.png" alt="Image" /></td>
<td><img src="857x338.png" alt="Image" /></td>
<td><img src="113x235.png" alt="Image" /></td>
<td><img src="142x313.png" alt="Image" /></td>
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<tr>
<td>VGE4 / VG4 / VG4-S / VGE4-S</td>
<td>VGE4 / VG4 / VG4-S / VG6</td>
<td>VG5 / VG4 / VG4-S</td>
<td>VG5 / VG4</td>
</tr>
<tr>
<td>12 / 17,5 kV</td>
<td>12 / 17,5 kV</td>
<td>24 kV</td>
<td>...24 kV</td>
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</tbody>
</table>
| ...1250 A | ...1600 A | ...1250 A | |}
| ...31,5 kA | ...40 kA | ...25 kA | |}
| ...95 / 42 kV\(^1\) | ...95 / 42 kV\(^1\) | ...125 / 50 kV\(^1\) | ...125 / 50 kV\(^1\) |
| 50.000\(^2\) | 30.000\(^2\) | 30.000\(^2\) | 30.000\(^2\) |

\(^1\) Rated lightning impulse withstand voltage / rated power frequency withstand voltage
\(^2\) Mechanical operating cycles
## Embedded Poles

For indoor application (high current)

<table>
<thead>
<tr>
<th>Embedded Poles</th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>P2</strong></td>
<td><strong>PT2</strong></td>
<td><strong>P5</strong></td>
<td><strong>P6</strong></td>
<td><strong>P7</strong></td>
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<td><code>&lt;image&gt;</code></td>
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<tr>
<td>VGE4-S / VG6</td>
<td>VGE4-S / VG6</td>
<td>VG4-S / VG6</td>
<td>VG6 / VG8 / VG8-S</td>
<td>VG7</td>
</tr>
<tr>
<td>12 / 17,5 kV</td>
<td>12 / 17,5 kV</td>
<td>24 kV</td>
<td>12 / 17,5 kV</td>
<td>12 / 17,5 kV</td>
</tr>
<tr>
<td>...3150 A&lt;sup&gt;1&lt;/sup&gt;</td>
<td>...3150 A&lt;sup&gt;1&lt;/sup&gt;</td>
<td>...2500 A&lt;sup&gt;1&lt;/sup&gt;</td>
<td>...3150 A&lt;sup&gt;1&lt;/sup&gt;</td>
<td>...3150 A&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>...40 kA</td>
<td>...40 kA</td>
<td>...31,5 kA</td>
<td>...40 kA</td>
<td>...50 kA</td>
</tr>
<tr>
<td>...95 / 42 kV&lt;sup&gt;2&lt;/sup&gt;</td>
<td>...95 / 42 kV&lt;sup&gt;2&lt;/sup&gt;</td>
<td>...125 / 50 kV&lt;sup&gt;2&lt;/sup&gt;</td>
<td>...200 / 95 kV&lt;sup&gt;2&lt;/sup&gt;</td>
<td>...95 / 42 kV&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>50.000&lt;sup&gt;3&lt;/sup&gt;</td>
<td>50.000&lt;sup&gt;3&lt;/sup&gt;</td>
<td>30.000&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>30.000&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> 2500 A / 3150 A with heat sink
<sup>2</sup> Rated lightning impulse withstand voltage / rated power frequency withstand voltage
<sup>3</sup> Mechanical operating cycles
## Embedded Poles

For outdoor application

<table>
<thead>
<tr>
<th></th>
<th>OP0</th>
<th>OP1</th>
<th>OP2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>12 kV</td>
<td>15 / 27 kV</td>
<td>38 kV</td>
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<tr>
<td></td>
<td>…630 A</td>
<td>…1000 A&lt;sup&gt;1)&lt;/sup&gt;</td>
<td>…1200 A&lt;sup&gt;1)&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>…20 kA</td>
<td>…16 / 12 kA&lt;sup&gt;1)&lt;/sup&gt;</td>
<td>…16 kA&lt;sup&gt;1)&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1)</sup> With integrated current sensor for recloser application
Embedded Poles
Innovative Technology

Schematic diagram

Upper terminal
Vacuum interrupter
Stem
Lower terminal
Flexible connection
Insulated push-rod with contact force springs
Fixing point
Connection to drive
**Embedded Poles**

State-of-the-art manufacturing process

Latest manufacturing methods guarantee process stability and quality at reduced environmental stress

Consistent development of products and processes

Control and monitoring of all essential process parameters

Efficient increase of the dielectric strength without usage of greenhouse gas
Embedded Poles

Quality control

- Verification of dimensional conformity
- Measurement of voltage drop across the pole
- Mechanical function test
- Checking of contact spring force
- Examination by visual assessment
Embedded Poles

Applications as core components

The applications as core components include

- Power plants
- Transformer substations
- Chemical industry
- Steel industry
- Automobile industry
- Airport power supply
- Shipbuilding
- Power supply to buildings