VACUTAP® VVS®

COMPACT ON-LOAD TAP-CHANGER FOR GRID APPLICATIONS.

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VACUTAP® VVS® – TAILORED FOR GRID APPLICATIONS.

The VACUTAP® VVS® vacuum on-load tap-changer was developed and optimized for operation in transformers up to approximately 60-70 MVA for 110 kV* power grids. Its compact design combines a diverter switch and tap selector in one functional unit.

The VACUTAP® VVS® is based on the well-proven VACUTAP® VV® and comprises a diverter switch and selector within the oil compartment. This compact design enables a spatially optimized configuration of the transformer and transformer cell.

Maintenance-free for nearly all grid applications

The vacuum-switching technology already proven in the VACUTAP® VV® ensures maximum reliability. The maintenance interval of 300,000 operations means maintenance-free performance for nearly all grid applications and therefore maximum availability of your transformers. This is made possible through features such as vacuum interrupters, which are developed in accordance with our strict requirements and have proven themselves in years of operation. No other manufacturer of tap changers has such a large number of vacuum on-load tap-changers in operation as Maschinenfabrik Reinhausen.

Benefits of vacuum technology

- Substantially reduced frequency of maintenance compared to conventional oil circuit engineering
- No arcing in the tap-changer oil
- No oil filter unit needed

*Voltage levels may vary by country
The on-load tap-changers of the VACUTAP® series combine decades of experience in vacuum-switching technology with the consistent further development of this technology. This results in on-load tap-changers with maximum reliability and availability.

**Internal integrated change-over selector**
- Optimized dimensions
- No influence on the DGA values of the transformer

**Enhanced change-over selector capacity,**
usually no potential connection measure needed

**Flange for bell-type tank installation**
standard to simplify assembly

**Space saving in the transformer tank due to very compact dimensions designed for standard grid applications**
**On-load tap-changer VVS® III 400 Y, VVS® III 400 D**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>VVS® III 400 Y</th>
<th>VVS® III 400 D</th>
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</thead>
<tbody>
<tr>
<td>Number of phases</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Max. rated through-current I₀ (A)</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Rated short-time current (kA)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Rated duration of short-circuits (s)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Rated peak withstand current (kA)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Max. rated step voltage U₀ (V)</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>Step capacity Pₜₚₙ (kVA)</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Rated frequency (Hz)</td>
<td>50 to 60</td>
<td></td>
</tr>
<tr>
<td>Operating positions with change-over selector:</td>
<td>max. 19</td>
<td></td>
</tr>
<tr>
<td>Motor-drive unit</td>
<td>TAPMOTION® ED, ETOS® ED</td>
<td></td>
</tr>
</tbody>
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**Rated insulation level VVS® III 400**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>VVS® III 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest voltage for equipment Uₘ (kV)</td>
<td>40 or 76</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage (kV, 1.2</td>
<td>50 μs)</td>
</tr>
<tr>
<td>Rated short-duration power frequency withstand voltage (kV, 50 Hz, 1 min.)</td>
<td>70 or 140</td>
</tr>
</tbody>
</table>

**VACUTAP® VVS® III 400 step capacity diagram**

![VACUTAP® VVS® III 400 step capacity diagram](image-url)
HIGH QUALITY.
LOW LIFE-CYCLE COSTS.

For reliable, economical operation.

Maintenance-free and long-lasting

- Maintenance interval of 300,000 tap-changes without time-based components
- Maintenance free for nearly all grid applications

Maximum operational reliability

- In our globally unique testing department, our on-load tap-changers are tested over all technical limits
- No other manufacturer of tap-changers has such a large number of vacuum on-load tap-changers in operation worldwide

Low life-cycle costs

- With this product we offer the best price-performance ratio
- Maintenance-free in most cases during the transformer life time

Compact design

- The innovative design is especially well-suited for applications with little available space
- The integrated change-over selector enables a more effective transformer design that uses less material
Please note:
The data in our publications may differ from the data of the devices delivered. We reserve the right to make changes without notice.

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