Web COMPAS
User manual
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1. Introduction

1.1 General

Web COMPAS is a web based tool which enables the user to search and provide information of Transformers Components standard products. The user can select and compare various products and see each characteristics of the products.

![Figure 1: Homepage](image1)

1.2 Section overview

Web COMPAS is built on different sections, each with specific service to the user. Web COMPAS sections are Product selector, Product portfolio and Contact and data privacy.

![Figure 2: Section overview](image2)
1.3 Product selector

Product selector allows the user to search and select available standard product from ABB Components product portfolio. Under Product selector the user can compare products and collect standard information and documentation of each product. The product selector contains data for OLTC and Bushings. With the product selector the user can search on a specific product or filter the list of products with help of some basic data input.

![Product selector OLTC](image1)

![Product selector Bushings](image2)
1.3 Product portfolio

Product portfolio is a direct link to Transformer insulation and components, ABB Components product portfolio homepage.

Figure 5: Product portfolio
1.4 Contact and data privacy

Under the contact and data privacy menu, the user finds information and support about Web COMPAS. The menu contains:

- Contact information for technical and system support
- Company information
- Cookies and data privacy
2. Product selector

2.1 OLTC Product selector

OLTC Product selector allows the user to search and select OLTC products in two ways.

- Quick search
- Guided search

Through Quick search the user can search on one specific OLTC product or several products from a product family. The Guided search option allows the user to search on one or several OLTC products based on a set of input data.

2.1.1 OLTC Quick search

The Quick search requires the user to fill in a specific Tap changer type and a specific number of positions. Find the proper product based on the selection criteria.

2.1.1.1 OLTC quick search step-by-step

1. Enter Tap changer type - requires the user to type one of the product family, (V)UC, (V)UB or UZ.
2. Number of positions - requires the user to type a specific number of positions to find a product.
3. Search - User can search on the product if step 1 and 2 is fulfilled.
4. Tap changer search results - based on the data input in step 1 and 2.
5. Clear all - User can reset the input data by click on the Clear all button.
2.1.2 OLTC Guided search

The OLTC Guided search section is based on a set of criteria. The OLTC Guided search requires the user to select the specific preferable design type, switching type and connection type. The other input fields are optional and based on manual number input. The result, is ranked on price.

2.1.2.1 Data description

Input data fields:

- **Design type** – On-tank, In-tank or Vacuum.
- **Number of positions** – Maximum number of positions. <35 positions depending on the specific product.
- **Phase step voltage (V)** – The maximum permitted step voltage is limited by the electrical strength and the switch capacity of the divert switch.
- **Maximum through-current (A)** – The current which the tap-changer is cable of transferring from one tapping to the other at the relevant rated step voltage.
- **Switching type** – Coarse/fine, Linear or Plus/minus type of regulation.
- **BIL of OLTC (kV)** – Basic insulation level
- **Connection type** – Three-phase delta, Single phase, Three-phase star point or Three-phase fully insulated.
• **Impulse test voltage across regulating winding a2, (kV)** – Between the ends of the fine regulating winding (across range). For coarse/fine switching in minus position, this means between the freely oscillating end of the coarse winding and any end of the fine winding.

• **Short-circuit current, 3 s. rms (kA)** – The short-circuit strength is verified with three applications of 3 seconds duration, without moving the contacts between the three applications. Each application has an initial value of at least 2.5 times the rms value.

### 2.1.2.2 OLTC Guided search step-by-step

1. Input data fields - specify the OLTC parameters. See list above for help.
2. Search - User can search on products after the required selection is filled (Design type, switching type and connection type).
3. Tap changers search results - based on the input data and ranked on price.
4. Calculated values - based on the input values. Breaking power is calculated by multiplying the maximum through-current with the phase step voltage.
5. Calculated values - based on the input values. Service voltage across regulating windings is calculated by multiplying the numbers of loops in the regulating windings with the phase step voltage.
6. Clear all - User can reset the input data by click on the Clear all button.

![Figure 8: OLTC Guided search overview](image)
2.1.3 OLTC Product selector search results

To get information of the preferable OLTC product, requires the user to click on the select button.

1. Select product by clicking on Select button.

Figure 9: Select OLTC product
2.1.4 OLTC Product information overview

Through selected preferable OLTC product the user access the information and documentation for the specific OLTC product.

1. Selected OLTC product

2a. Info - standard information of selected OLTC product.

2b. Standard information, including technical data and electrical voltages information.

1. Documentation - including Technical guides, dimension drawings, electrical connection diagrams, additional drawings and general documentation. The documents can easily be downloaded and saved to the user’s computer. (see figure 10).

2. Create Sales Inquiry - send inquiry by E-mail to ABB Components Sales Department based on the input data. (see figure 11).

Figure 10: OLTC product information overview
Figure 11: OLTC documentation overview
2.1.5 OLTC Sales inquiry

User can create an sales inquiry and send the input data to ABB Components Sales Department. The inquiry is an e-mail based function that collects the values selected in the input data fields.

1. Mandatory fields in order to create an sales inquiry
2. Optional fields
3. Create E-mail - see figure 12 for the e-mail overview.
4. Cancel - sends the user back to the product selector side.

Figure 12: OLTC sales inquiry menu
2.1.5.1 OLTC E-mail overview

1. Subject - is set to COMPAS sales inquiry.
2. Contact information - based on the input data in the OLTC sales inquiry menu.
3. Description of inquiry - ability for the user to describe the inquiry in detail.
4. Selected product – Selected product under Tap-changers search results
5. Input data – data and values selected by the user from the OLTC product selector.

Figure 13: OLTC E-mail inquiry
2.2 Bushings product selector

Bushings Product selector allows the user to search and select bushing products in two ways.

- Quick search
- Guided search

By the Quick search the user can search on one specific bushing product or several products from a product family. The Guided search option allows the user to search on one or several bushing products based on a set of input criteria’s.

2.2.1 Bushings Quick search

The Bushings Quick search requires the user to fill in a specific bushing type, the user can specify to get a specific product by the preferable designation and/or ordering number.

1. Bushing type.
2. Designation - product feature name.
3. Ordering number.

The results of products filters automatically based on the input data in section 1, and/or 2, 3.

4. Bushings search results - based on the input data.
5. Clear all - User can reset the input data by click on the Clear all button.

Figure 14: Bushing Quick search overview
2.2.2 Bushings Guided search

Bushings Guided search section is based on a set of criteria. The Bushings Guided search requires the user to select minimum of one specific preferable option from the input data field. Each selected value shrinks the bushing results and options in the input data field. The result, is ranked on price.

2.2.2.1 Data description

Input data fields:

- **Application** - Transformers and reactors AC or wall application
- **Type of application** – Air-Air, Oil-Air, Oil-Oil and Oil-SF6. Air-Air is applicable for wall bushings. Oil-Air, Oil-Oil and Oil-SF6 is applicable for transformers and reactors AC bushings.
- **Internal insulation** – Oil (OIP- Oil impregnated paper) or RIP (Resin impregnated paper). Oil and RIP is applicable for transformer and reactors AC with Oil-Air or Oil-SF6 and for wall Air-Air. Transformer and reactors AC with Oil-Oil can only apply RIP.
- **Outdoor insulation** – Porcelain brown, Porcelain grey and SiR-grey (Silicon rubber). Porcelain is applicable for bushings with oil internal insulation and SiR-grey is applicable for RIP bushings.
- **Rated current [A]** – This is the maximum continuous AC current the bushing can carry at a certain air temperature and a certain oil temperature.
- **Maximum system voltage (Um) [kV]** - Normally the highest RMS value of the phase-to-phase voltage for the system on which the bushing will be used.
- **Basic insulation level (BIL) [kV]** – Equal to dry lightning impulse withstand voltage.
- **Wet switching impulse (SIL) [kV]** – Normally the same switching impulse level as for the transformer. This is a type test and is performed under wet conditions for bushings for outdoor application.
- **Power frequency withstand voltage (PFWV) [kV]** – Normally 10% above the test level of the test for the transformer. This test is performed as a routine test on all bushings.
- **Creepage distance [mm]** – Depends on the degree of pollution in the area where the bushing is to be used.
- **Space for current transformer (CT Length)** – See Technical guide for recommendations.
- **Seismic verified IEEE 693 Moderate level** – Seismic verified or non-verified contact ABB
- **Seismic verified IEEE 693 High level** – Seismic verified or non-verified contact ABB
2.2.2.2 Bushing guided search step-by-step

1. Input data fields, specify the bushings parameters. See list above for help. (NOTE: The product list updates automatically based on the input data).

2. Bushings search results - based on the input data and ranked on price.

3. Clear all - User can reset the input data by click on the Clear all button.

![Figure 15: Bushings product selector overview](image-url)
2.2.2 Bushings Product selector search results

To get information of a preferable bushing product, the user requires to click on the Select button.

1. Select product by clicking on Select button.

![Bushings search results](image)

Figure 16: Bushing product select
2.2.3 Bushings Product information overview

Through selected preferable bushing product the user access the information and documentation for the specific bushing product.

1. Selected bushing product

2a. Info - standard information of selected bushing product.

2b. Standard information.

3. Documentation - including Technical guides, dimension drawings, additional drawings and general documentation. The documents can easily be downloaded and saved to the user’s computer. (See figure 17).

4. Create Sales Inquiry - send inquiry by E-mail to ABB Components Sales Department based on the input data. (See figure 18).

![Bushings search results](image)  
**Figure 17:** Bushing product information overview
Figure 18: Bushing documentation overview
2.2.5 Bushings Sales inquiry

User can create a sales inquiry and send the input data to ABB Components Sales Department. The inquiry is an e-mail based function that collects the values selected in the input data fields.

1. Mandatory fields in order to create a sales inquiry
2. Optional fields
3. Create E-mail - see figure 19 for the e-mail overview.
4. Cancel - sends the user back to the product selector side.

Figure 19: Bushings sales inquiry
### 2.2.5.1 Bushings E-mail overview

1. **Subject** - is set to COMPAS sales inquiry.
2. **Contact information** - based on the input data in the Bushings sales inquiry menu.
3. **Description of inquiry** - ability for the user to describe the inquiry in detail.
4. **Selected product** – Selected product under Bushings search results.
5. **Input data** – data and values selected by the user from the Bushings product selector.

![Bushings E-mail Inquiry Diagram](image)

**Figure 20: Bushings E-mail Inquiry**

<table>
<thead>
<tr>
<th>Contact information</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
<td>Oscar</td>
</tr>
<tr>
<td><strong>Country:</strong></td>
<td>Sweden</td>
</tr>
<tr>
<td><strong>Corporation:</strong></td>
<td>ABB Components</td>
</tr>
<tr>
<td><strong>Job Function:</strong></td>
<td>Business Development</td>
</tr>
<tr>
<td><strong>End User:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Contact number:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of inquiry</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insert text...</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selected product</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOE(2) 1550-1175-1600-0.3</td>
<td></td>
</tr>
<tr>
<td>17SC903550-A AA</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input data</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application</strong></td>
<td>Transformer and reactor</td>
</tr>
<tr>
<td><strong>Type of application</strong></td>
<td>Oil-Air</td>
</tr>
<tr>
<td><strong>Internal insulation</strong></td>
<td>Oil impregnated paper (OIP)</td>
</tr>
<tr>
<td><strong>Outdoor insulation</strong></td>
<td>Porcelain-Brown</td>
</tr>
<tr>
<td><strong>Rated current [A]</strong></td>
<td>1600</td>
</tr>
<tr>
<td><strong>Maximum system voltage (Um)[kV]</strong></td>
<td>550</td>
</tr>
<tr>
<td><strong>Basic insulation level (BIL)[kV]</strong></td>
<td>1550</td>
</tr>
<tr>
<td><strong>Wet switching impulse (SIL)[kV]</strong></td>
<td>1050</td>
</tr>
<tr>
<td><strong>Wet power frequency AC [kV]</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Power frequency withstand voltage (PFWV)[kV]</strong></td>
<td>750</td>
</tr>
<tr>
<td><strong>Creepage distance [mm]</strong></td>
<td>10130</td>
</tr>
<tr>
<td><strong>Space for current transformer (CT Length)[mm]</strong></td>
<td>300</td>
</tr>
<tr>
<td><strong>Seismic verified IEEE 693 Moderate level</strong></td>
<td>Seismic verified</td>
</tr>
<tr>
<td><strong>Seismic verified IEEE 693 High level</strong></td>
<td>Non-verified contact ABB</td>
</tr>
</tbody>
</table>