LV BUSHINGS FOR OIL IMMERSED DISTRIBUTION TRANSFORMERS
3,6 kV - 250 to 6300 A
According to DIN 42539 & Cedaspe design

PRODUCT DESCRIPTION AND INSTRUCTIONS FOR USE

GENERAL INFORMATION:
Transformer bushing having porcelain as main insulation and suitable for outdoor installation.

The lower part is directly in contact with the transformer oil and the inner chamber shall be completely filled with oil.

The bushing is suitable to withstand the test voltages and the other prescriptions of the IEC 60137 Standard.

The bushing can be installed at any angles in respect of vertical. In case of installation at more than 30° special execution may be necessary. Anyway, the cantilever values given by IEC 60137 standard are fulfilled.

STORAGE AND SHELF LIFE:
Max shelf-life 5 years. For longer periods please get in touch with manufacturer.

Bushing’s components shall be stored in such a way to prevent damages, in a clean place with temperatures ranging from -20 to +40 °C and air humidity 75 %. Storage would be in a warehouse or enclosed building but the same precautions should be followed.

Before use, visual check that no damages happened to any parts.

INSTALLATION:
The bushing is supplied in loose parts.

1) for assembly on transformer tank assemble all parts as per sequence shown in the following drawings.
2) connect the bushing to internal connections, as per your arrangement, by means of provided locking nuts or your own screws in case of bushings with base connection.
3) Tighten closing hexagonal nut (pos. 13) applying torque values mentioned at pag.2
DISMOUNTING OF BUSHING:

To dismount the bushing:

1) first lower the oil level a few centimetres below the transformer cover
2) disconnect outer connections (connecting flag if mounted)
3) unscrew the closing hexagonal nut (pos.13) top of brass washer E (pos.4) with a spanner
4) take out porcelain and all components top of tank cover
5) disconnect the internal connections
6) take out all parts underneath cover

REPLACEMENT OF PORCELAIN:

It is possible to replace the porcelain and/or the gaskets only without disconnecting the internal connections and with oil lowered only at few centimetres below cover level.

1) first lower the oil level a few centimetres below the transformer cover
2) disconnect outer connections (flags if mounted)
3) unscrew the closing hexagonal nut (pos.13) top of brass washer E (pos.4) with a torque spanner
4) take out porcelain and all other outer components
5) assemble all parts as per sequence shown in the following drawings
6) Tighten the closing hexagonal nut (pos.13) applying torque values mentioned below

TIGHTENING VALUES:

(suggested values +/-10 % depending on the quality of the tank cover surface)

Values for nuts on central conductor:

<table>
<thead>
<tr>
<th>Size</th>
<th>Torque Nm</th>
<th>Size</th>
<th>Torque Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12</td>
<td>13</td>
<td>M48X3</td>
<td>180</td>
</tr>
<tr>
<td>M20</td>
<td>30</td>
<td>M55X3</td>
<td>250</td>
</tr>
<tr>
<td>M30x2</td>
<td>70</td>
<td>M75X3</td>
<td>250</td>
</tr>
<tr>
<td>M42X3</td>
<td>110</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values for locking bolts of flags:

<table>
<thead>
<tr>
<th>Size</th>
<th>Torque Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8</td>
<td>10</td>
</tr>
<tr>
<td>M10</td>
<td>25</td>
</tr>
<tr>
<td>M12</td>
<td>40</td>
</tr>
</tbody>
</table>

MAINTENANCE:

This type of bushing does not need any specific maintenance though we suggest on a periodical basis to clean the surface of the porcelain.

DISPOSAL:

Disposal of all parts shall be made according to local environmental and waste management rules.
La figura mostra isolatore 3/250 in scala 1:2

The figure shows the bushing 3/250 (1:2 scale)

<table>
<thead>
<tr>
<th>Isolatore Bushing</th>
<th>Tensione Voltage (KV)</th>
<th>Corrente Current (A)</th>
<th>Linea di fuga Creepage distance (mm)</th>
<th>a (mm)</th>
<th>b (mm)</th>
<th>f (mm)</th>
<th>L (mm)</th>
<th>s (mm)</th>
<th>d1 (mm)</th>
<th>d3 (mm)</th>
<th>d4 (mm)</th>
<th>d6 (mm)</th>
<th>Peso Weight (Kg)</th>
<th>Volume (dm³)</th>
<th>Material</th>
<th>Tirante-pos.3 Stem-pos.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/250</td>
<td>3.6</td>
<td>250</td>
<td>120</td>
<td>180</td>
<td>92</td>
<td>50</td>
<td>272</td>
<td>25</td>
<td>M12</td>
<td>39</td>
<td>70</td>
<td>75</td>
<td>60</td>
<td>1.0</td>
<td>2.7</td>
<td>Ottone / Brass</td>
</tr>
<tr>
<td>3/630 – CU</td>
<td>3.6</td>
<td>630</td>
<td>120</td>
<td>210</td>
<td>108</td>
<td>65</td>
<td>318</td>
<td>37</td>
<td>M20</td>
<td>45</td>
<td>85</td>
<td>90</td>
<td>70</td>
<td>2.5</td>
<td>4.8</td>
<td>Rame / Copper</td>
</tr>
<tr>
<td>3/630 – MS</td>
<td>3.6</td>
<td>630</td>
<td>120</td>
<td>209</td>
<td>105</td>
<td>65</td>
<td>314</td>
<td>35</td>
<td>M20</td>
<td>45</td>
<td>85</td>
<td>90</td>
<td>70</td>
<td>2.5</td>
<td>4.8</td>
<td>Ottone / Brass</td>
</tr>
</tbody>
</table>

Ring pos.15 + Stem pos.3 Crimped (on demand can be timbrazed)
Anello pos.15 + Tirante pos.3 Crimpato (su richiesta può essere soldato a stagno)

ISOLATORI PASSANTI PER TRASFORMATORI DIN 42539
TENSIONE NOMINALE 3.6kV  CORRENTE NOMINALE 250–630A
Outdoor transformer bushings DIN 42539
Rated voltage 3.6kV  Rated current 250–630A
La figura mostra isolatore 3/1000 in scala 1:2

<table>
<thead>
<tr>
<th>Isolatore Bushing</th>
<th>Tensione Voltage KV</th>
<th>Corrente Current A</th>
<th>Linea di fuga Creepage distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/1000</td>
<td>3.6</td>
<td>1250</td>
<td>125</td>
</tr>
<tr>
<td>3/2000</td>
<td>3.6</td>
<td>2000</td>
<td>125</td>
</tr>
<tr>
<td>3/3150</td>
<td>3.6</td>
<td>3150</td>
<td>125</td>
</tr>
</tbody>
</table>

dim in mm

THE FIGURE SHOWS THE BUSHING 3/1000 (1:2 SCALE)

VISTA B
Isolatore 3/1000
Bushing 3/1000

VISTA B
Isolatore 3/2000–3150
Bushing 3/2000–3150

ISOLATORI PASSANTI PER TRASFORMATORI DIN 42539
TENSIONE NOMINALE 3.6kV CORRENTE NOMINALE 1000–2000–3150A
Outdoor transformer bushings DIN 42539
Rated voltage 3.6kV Rated current 1000–2000–3150A