200 A 25 kV class rotatable feedthru insert

General
Eaton’s Cooper Power™ series 25 kV rotatable feedthru insert is used to provide dual bushings from a single apparatus bushing well. It makes converting radial-feed transformers to feed-thru transformers and adding in-line arrester protection both easy and practical. Its patented, built-in torque-limiting ratchet prevents operators from accidentally breaking bushing well studs during installation. The ratchet feature also allows the operator to rotate the feedthru insert 360° to orient it in the best position for the application. The bail assembly supplied with the kit can be used to lock the feedthru in position.

The rotatable feedthru insert incorporates an all copper current path and peroxide cured EPDM rubber. It fully meets the requirements of IEEE Std 386™-2006 standard. When mated with comparably rated products, the insert provides a fully shielded and submersible loadbreak apparatus connection.

Eaton’s latch indicator ring, located on the circumference of the bushing’s collar, eliminates the guesswork of loadbreak elbow installation on the bushing interface. The bright yellow ring provides immediate feedback to determine if the elbow is properly installed on the bushing. If the yellow ring is completely covered by the loadbreak elbow, it is fully “latched,” if the ring is visible, the elbow must be installed correctly to prevent any problems from occurring.

Installation
Service Information S500-13-1, 200 A 15 and 25 kV Class Loadbreak Rotatable Feedthru Insert Installation Instructions details the installation procedures that should be followed and are included with each insert. No special tools are required for the proper installation of the insert. A cleaned and lubricated insert is simply placed in a bushing well and turned in a clockwise direction. When the torque-limiting ratchet releases, giving an audible clicking, the insert will be properly installed and tightened to the correct torque. Continued rotation in a clockwise direction allows for a full 360° positioning to meet the demands of the application. To remove a de-energized insert simply rotate in a counterclockwise direction.
Production tests
Tests conducted in accordance with IEEE Std 386™-2006 standard.
- AC 60 Hz 1 Minute Withstand
  - 40 kV
- Minimum Corona Voltage Level
  - 19 kV
Tests conducted in accordance with Eaton requirements.
- Physical Inspection
- Periodic Dissection
- Periodic X-ray Analysis

Table 1. Voltage Ratings and Characteristics

<table>
<thead>
<tr>
<th>Description</th>
<th>kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Voltage Class</td>
<td>25</td>
</tr>
<tr>
<td>Maximum Rating Phase-to-phase</td>
<td>26.3</td>
</tr>
<tr>
<td>Maximum Rating Phase-to-ground</td>
<td>15.2</td>
</tr>
<tr>
<td>AC 60 Hz 1 Minute Withstand</td>
<td>40</td>
</tr>
<tr>
<td>DC 15 Minute Withstand</td>
<td>78</td>
</tr>
<tr>
<td>BIL and Full Wave Crest</td>
<td>125</td>
</tr>
<tr>
<td>Minimum Corona Voltage Level</td>
<td>19</td>
</tr>
</tbody>
</table>

Voltage ratings and characteristics are in accordance with IEEE Std 386™-2006 standard.

Table 2. Current Ratings and Characteristics

<table>
<thead>
<tr>
<th>Description</th>
<th>Amperes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>200 A rms</td>
</tr>
<tr>
<td>Switching</td>
<td>10 operations at 200 A rms at 26.3 kV</td>
</tr>
<tr>
<td>Fault Closure</td>
<td>10,000 A rms symmetrical at 26.3 kV for 0.17 s after 10 switching operations</td>
</tr>
<tr>
<td>Short Time</td>
<td>10,000 A rms symmetrical for 0.17 s</td>
</tr>
<tr>
<td></td>
<td>3,500 A rms symmetrical for 3.0 s</td>
</tr>
</tbody>
</table>

Current ratings and characteristics are in accordance with IEEE Std 386™-2006 standard.

Table 3. Rotatable Feedthru Insert Kit

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotatable Feedthru Insert</td>
<td>LF225</td>
</tr>
</tbody>
</table>

Each kit contains:
- Rotatable Feedthru Insert
- Shipping Cap (not for energized operation)
- Stainless Steel Bail Assembly
- Installation Instruction Sheet

Table 4. Replacement Parts

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bail Assembly</td>
<td>2604941B08</td>
</tr>
</tbody>
</table>

Ordering information
To order the 25 kV Rotatable Feedthru Insert, refer to Table 3.
Copper finger contacts are threaded into the copper piston. Fault activated copper knurled piston is forced forward by gas pressure generated during fault close to engage elbow probe. Knurled piston contact provides reliable current interchange and locks piston in place during switching operations. Copper bus completes all copper current path design for reliable, cool operation. 3/8”-16 UNC threads. Torque-limiting ratchet eliminates bushing well stud breakage and allows for 360° orientation. Arc-ablative plastic produces arc extinguishing gas during loadbreak switching operations. Molded-in bright yellow ring eliminates elbow installation guesswork by assuring a quality connection. Molded semi-conductive peroxide-cured EPDM shield meets requirements of IEEE Std 592™-2007 standard. Nose piece locking groove is made of high strength, high temperature plastic that secures mating connector to portable feedthru. Full circumference piston stop limits piston and finger contact travel during fault close.  

**Figure 1.** Illustration shows field-proven, all copper current path which ensures cool operating temperatures and reliability.

**Figure 2.** Rotatable feedthru insert profile and stacking dimensions.
200 A 25 kV class rotatable feedthru insert

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton’s Cooper Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

© 2015 Eaton
All Rights Reserved
Printed in USA
Publication No. CA650077EN

Eaton is a registered trademark.
All other trademarks are property of their respective owners.

For Eaton’s Cooper Power series product information call 1-877-277-4636 or visit:
www.eaton.com/cooperpowerseries.