

Deadbreak Apparatus Connectors

Functional Specification Guide

600 A 35 kV 200kV BIL Class BT-TAP Deadbreak Connector

PS650006EN

Functional Specification for 200 kV BIL BT-TAP Deadbreak Connector

1.0 Scope

- 1.1** This specification covers the electrical and mechanical characteristics of the 200 kV BIL BT-TAP deadbreak connector, for cables with conductors ranging from #3 AWG to 1500 kcmil. Product is per Eaton's Cooper Power series product catalog sections below.

Table 1 – Voltage Rating and Catalog Sections

kV Class	Catalog Section
35	CA650009EN

2.0 Applicable Standards

- 2.1** All characteristics, definitions, and terminology, except as specifically covered in this specification, shall be in accordance with IEEE Std 386™-2006 standard – Separable Insulated Connector Systems. All connectors shall be fully shielded and submersible.

3.0 Construction

- 3.1** Rubber - High-quality, peroxide-cured EPDM Insulation shall be mixed and formulated in-house for complete control of raw rubber characteristics.
- 3.2** Adapter - Molded cable adapter, shall be sized to fit cable insulation diameters from 0.875" to 2.210" (22.2 to 56.1 mm), and provides stress relief for the terminated cable.
- 3.3** Loadbreak Reducing Tap Plug - Loadbreak reducing tap plug (LRTP) shall be 200 A, single-phase loadbreak and three-phase fault close rated means for obtaining a direct conductor test, visible ground, and provides location for Eaton's Cooper Power Systems M.O.V.E. Arrester or grounding elbow.
- 3.4** Shear Bolt Connector – The stepless shear bolt shall have no pre-set shear points and shall make use of the maximum number of bolt threads possible to apply a compressive force to the conductor. The shear bolts shall always break even with the surface of the connector body, therefore requiring no filing of metal due to the stepless technology. Five range-taking sizes of the shear bolt connector shall fit conductors from 3/0 to 1500 kcmil. The friction disk of the shear bolt connector shall generate no tip friction between the bolt and the conductor. This shall allow for higher contact pressures while still protecting the integrity of finely stranded conductors.

4.0 Ratings

- 4.1** The 35 kV class BT-TAP connector shall be rated at 200 kV Basic Insulation Level (BIL).
- 4.2** The 35 kV class BT-TAP connector shall be rated at 600 amps continuous current.
- 4.3** The BT-TAP connector can be rated at 900 amps. This shall be achieved when used with a coppertop compression connector, copper reducing tap plug, copper stud, and copper bushing or junction. If a 900 amp rating is desired, specify a "C" as the digit after the connector code. Example: BTP635L18C1.

5.0 Installation

- 5.1** The T-body shall be assembled onto prepared cable with an unthreaded compression connector or shear bolt connector. The short end of a special aluminum stud, provided with the kit, shall

be torqued to 55 ft-lbs onto a de-energized 600 A bushing. The loadbreak reducing tap plug shall be threaded onto the stud drawing the entire assembly tight to the apparatus bushing. The assembly shall then be torqued to 55 ft-lbs to the apparatus bushing using a torque tool.

- 5.2** The optional shear bolt connector can be used in place of a standard compression connector to terminate the conductor of the underground cable. No special tools are required for installation of the optional shear bolt connector.

6.0 Production Tests

- 6.1** These tests shall be conducted in accordance with IEEE Std 386™-2006 standard. The values from these tests are shown in Table 2 below:

- AC 60 Hz 1 Minute Withstand
- Minimum Partial Discharge Extinction Voltage

Table 2 – Voltage Ratings and Test Results		
kV Class	AC Withstand (kV)	Min. PD Extinction Voltage (kV)
35	70	26.0

- 6.2** The following tests shall be conducted in accordance with manufacturer requirements:

- Physical Inspection
- Periodic Dissection
- Periodic Fluoroscopic Analysis
- BT-TAP connector shall pass an Eaton's Cooper Power series product 2000 hour submersible multi-stress test

7.0 Optional Features

- Protective Cap
- Capacitive Test Point
- Shear Bolt Connector
- Coppertop Connector
- All Copper Connector
- Copper Stud
- Cold Shrink Cable Sealing Kit
- Cable Shield Adapter Kit
- Torque Tool
- Operating and Test/Torque Tool
- Socket Drive Tool

8.0 Approved Manufacturers

8.1 Eaton