

Deadbreak Apparatus Connectors

Functional Specification Guide

BT-TAP Deadbreak Connector

PS650001EN

Functional Specification for BT-TAP Deadbreak Connector

1.0 Scope

- 1.1** This specification covers the electrical and mechanical characteristics of the BT-TAP deadbreak connector, which shall be sized 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
15	CA650002EN
25	CA650001EN
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 0.610" to 2.21" (15.5 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 series 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 BT-TAP connector Basic Insulation Level (BIL) rating shall be as follows;
- 4.1.1 15kV Class – 95kV
 - 4.1.2 25kV Class – 125kV
 - 4.1.3 35kV Class – 150kV or 200kV
- 4.2** The BT-TAP connector shall be rated at 600 amps continuous current.
- 4.3** The BT-TAP connector shall be rated at 900 amps continuous current when used with a coppertop compression connector and copper bushing or junction.

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 wrench.
- 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 shall be 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

kV Class	AC Withstand (kV)	Min. PD Extinction Voltage (kV)
15	40	19.0
25	40	19.0
35	50	26.0

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

- Physical Inspection
- Periodic Dissection
- Periodic Fluoroscopic Analysis
- 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
- All Copper Connector, Coppertop 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