200 A 15 and 25 kV class deadbreak straight connector

Description

Eaton's Cooper Power™ series deadbreak straight connector is a fully-shielded and insulated plug-in termination for connecting underground cable to transformers, switching cabinets and junctions equipped with deadbreak bushings. The design of the straight connector allows mounting to be vertical, horizontal, or any angle in between.

Deadbreak straight connectors from Eaton are molded using high quality peroxide-cured EPDM insulation. Standard features include a coppertop pin connector, bail assembly and a built-in capacitive test point.

Cable ranges are sized to accept a wider range of cable diameter for a given size elbow. The wider cable ranges increase installation flexibility.

The Coppertop pin compression connector is a standard item to transition from the cable to the deadbreak bushing. An aluminum crimp barrel is inertia-welded to a copper probe. The aluminum barrel makes the connector easy to crimp and the copper probe ensures a reliable, tight, cool operating connection with the bushing.

Installation

Cable stripping and scoring tools, available from various tool manufacturers, are recommended for use when installing deadbreak connectors. After preparing the cable, the compression connector is installed on the conductor. The molded housing is then pushed onto the cable.

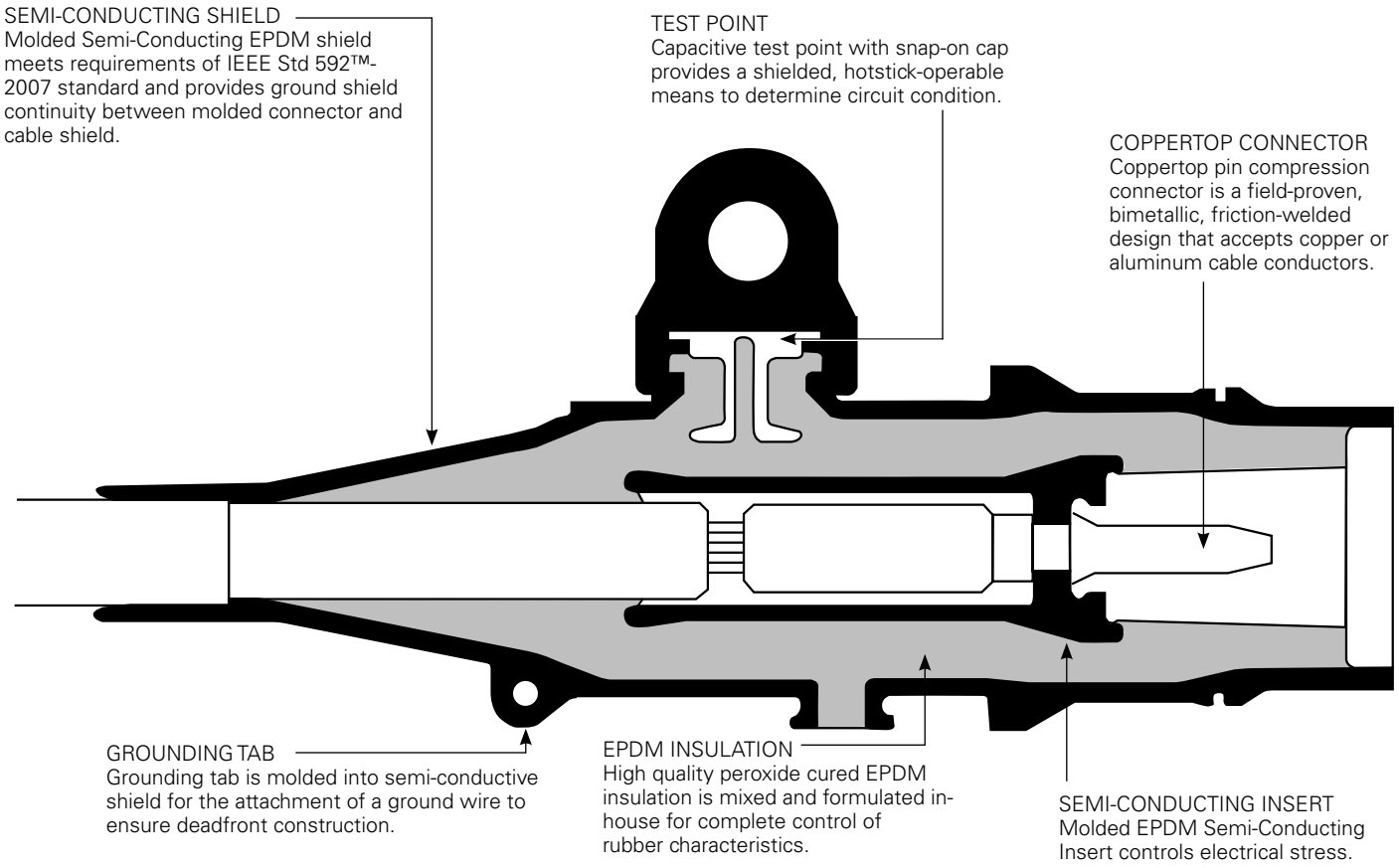

Figure 1. Straight connector cutaway illustrates design integrity.

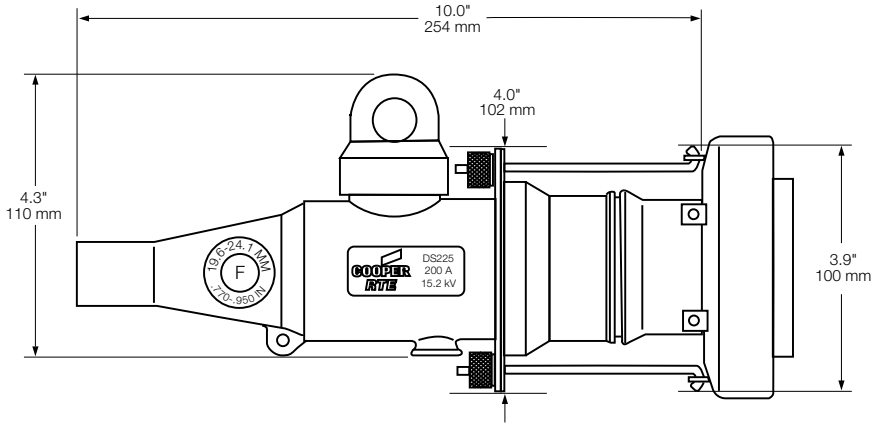

Figure 2. DS225 deadbreak connector dimensional information.

Table 1. Voltage Ratings and Characteristics

Description	kV
Standard Voltage Class	25
Maximum Rating Phase-to-Ground	15.2
AC 60 Hz 1 Minute Withstand	40
DC 15 Minute Withstand	78
BIL and Full Wave Crest	125
Minimum Corona Voltage Level	19

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

Table 2. Current Ratings and Characteristics

Description	Amperes
Continuous	200 A rms
Short Time	10,000 A rms symmetrical for 0.17 s
	3,500 A rms symmetrical for 3.0 s

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

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
- Test Point Voltage Test

Tests are conducted in accordance with Eaton requirements:

- Physical Inspection
- Periodic Dissection
- Periodic Fluoroscopic Analysis

Ordering information

The standard elbow kit is packaged in a heavy-duty polyethylene bag, bulk packed 30 kits to a multi-pak box. Individual boxed kits are also available by special part number. To order a 15/25 kV Class Deadbreak Straight Connector kit follow the easy steps below.

Each kit contains:

- Molded Straight Body
- Coppertop Compression Pin Connector
- Bail Assembly
- Silicone Lubricant
- Installation Instruction Sheet

STEP 1: Determine the cable's diameter over the electrical insulation as shown in Figure 3 (including tolerances). Then identify a cable range from Table 3 that brackets the minimum and maximum insulation diameters. Select the CABLE RANGE CODE from the far right column.

STEP 2: Identify the conductor size and type in Table 4 and select the CONDUCTOR CODE from the far right column.

STEP 3: For a straight connector kit with a capacitive test point order:

DS225	CABLE RANGE CODE	CONDUCTOR CODE	T

For a straight connector kit without a compression connector, use **"00"** for the conductor code.

For a kit individually packaged in a corrugated cardboard box, insert an **"X"** as the last character in the part number.

EXAMPLE: Select a connector kit with a capacitive test point for use on a #1 compact cable with a nominal insulation diameter of .760".

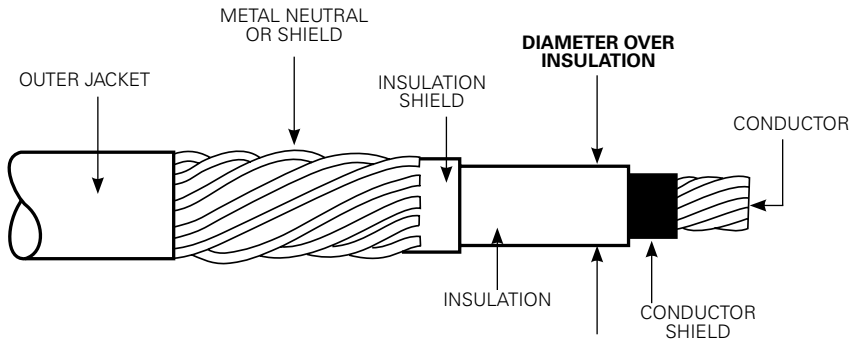

Figure 3. Illustration showing typical construction of medium voltage underground cable.

Table 3. Cable Range

Cable Range		
Inches	**Millimeters**	**Cable Range Code**
.531-.685	13.5-17.4	BA
.642-.819	16.3-20.8	DA
.772-.949	19.6-24.1	FA
.909-1.13	23.1-28.7	HA
1.10-1.32	27.9-33.5	JA

Table 4. Conductor Size and Type

Concentric or Compressed		Compact or Solid		
AWG	**mm^2**	**AWG**	**mm^2**	**Conductor Code**
No Connector				00
#6	16	#4	–	01
#4	–	#3	–	02
#3	–	#2	25	03
#2	25	#1	35	04
#1	35	1/0	50	05
1/0	50	2/0	70	06
2/0	70	3/0	–	07
3/0	–	4/0	95	08
4/0	95	250	120	09
250*	120	300	–	10

* Compressed stranding only.

STEP 1: Nominal diameter over the insulation is 0.760" ± .030".

Minimum Diameter
0.760"–.030" = 0.730"
Maximum Diameter
0.760"+.030" = 0.790"

From Table 3, identify the cable range .642"–.819" and select the "D" CABLE RANGE CODE.

STEP 2: The conductor size is a #1 and the type is compact.

From Table 4, under the column "Compact or Solid" identify #1 and select the "04" conductor code.

STEP 3: Order catalog number.

DS 225 DA 04 T

Table 5. Replacement Coppertop Pin Connectors

Conductor Size				
Concentric or Compressed		**Compact or Solid**		
AWG	**mm^2**	**AWG**	**mm^2**	**Catalog Number**
#6	16	#4	–	CC2C01S
#4	–	#3	25	CC2C02S
#3	25	#2	35	CC2C03S
#2	35	#1	–	CC2C04S
#1	–	1/0	50	CC2C05S
1/0	50	2/0	70	CC2C06S
2/0	70	3/0	–	CC2C07S
3/0	–	4/0	95	CC2C08S
4/0	96	250	120	CC2C09S
250*	120	300	–	CC2C10S

* Compressed Stranding Only

Note: Coppertop compression connector may be used on both aluminum and copper cable conductors.

Table 6. Replacement Parts

Description	Catalog Number
Bail Assembly	2639253B01B
Silicone Grease .25 oz tube 5.2 oz tube	 2603393A03 2605670A02M
Test Point Cap	2638855C02

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

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