Deadbreak Connectors
Catalog Data
CA650007EN

Effective August 2019
Supersedes November 2015

COOPER POWER SERIES

600 A 15 and 25 kV class deadbreak accessories, tools, and replacement parts

General

Eaton connects and assembles 600 A products with it's Cooper Power™ series 600 A, 15 and 25 kV Class deadbreak accessories. When assembled to mating apparatus, deadbreak accessories provide fully shielded, submersible connections that meet the requirements of IEEE Std 386™-2016 standard–"Separable Insulated Connector Systems".

Interchangeability

Eaton conforms to the electrical, mechanical and dimensional requirements of IEEE Std 386™-2016 standard with its Cooper Power series 600 A deadbreak connector components. In addition, they are designed to be interchangeable with those currently available from other major manufacturers also meeting the requirements of this standard.

Powering Business Worldwide

Production tests

Tests are conducted in accordance with IEEE Std 386™-2016 standard.

- AC 60 Hz1 Minute Withstand
  - 40 kV
- Minimum Partial Discharge Extinction Voltage
  - 19 kV

Tests are conducted in accordance with Eaton requirements.

- Physical Inspection
- Periodic Dissection
- Periodic Fluoroscopic Analysis

Table 1. Voltage Ratings and Characteristics: Insulating plug

Description	kV
Standard Voltage Class	25
Maximum Rating Phase-to-Ground	16.2
AC 60 Hz 1 Minute Withstand	40
DC 15 Minute Withstand	78
BIL and Full Wave Crest	125
Minimum Partial Discharge Extinction Voltage	19

Voltage ratings and characteristics are in accordance with IEEE Std 386™-2016 standard.

Table 2. Current Ratings and Characteristics: Insulating plug

Description	Amperes
600 A Interface Continuous	600 A rms
4 Hour Overload	900 A rms
Short Time	40,000 A rms symmetrical for 0.20 s
	27,000 A rms symmetrical for 4.0 s

Current ratings and characteristics are in accordance with IEEE Std 386™-2016 standard.

Table 3. Voltage Ratings and Characteristics: Connecting plug

Description	kV
Standard Voltage Class	25
Maximum Rating Phase-to-Ground	16.2
AC 60 Hz 1 Minute Withstand	40
DC 15 Minute Withstand	78
BIL and Full Wave Crest	125
Minimum Partial Discharge Extinction Voltage	19

Voltage ratings and characteristics are in accordance with IEEE Std 386™-2016 standard.

Table 4. Current Ratings and Characteristics: Connecting plug

Description	Amperes
600 A Interface Continuous	600 A rms
4 Hour Overload	900 A rms
Short Time	40,000 A rms symmetrical for 0.20 s
	27,000 A rms symmetrical for 4.0 s

Current ratings and characteristics are in accordance with IEEE Std 386™-2016 standard.

Threaded stud

Eaton uses a threaded stud with its Cooper Power series BOL-T™ connector or splices to connect reducing well plugs, deadbreak tap plugs, connecting plugs, and insulating plugs to other components or to apparatus bushings.

Figure 1. Threaded stud made of aluminum or optional copper.

Insulating plug

A one-inch socket and torque wrench are required to tighten the insulating plug into a de-energized deadbreak connector and mating apparatus. Refer to Service Information MN650005EN for details.

Capacitive test point allows circuit testing without disturbing the bolted connection. The one-inch hex head allows easy assembly to the connector and mating apparatus.

Semiconducting EPDM rubber cap fits over the test point for a waterproof seal and deadfront shielding.

Figure 2. Insulating plug with EPDM rubber cap.

Connecting plug (EPDM rubber)

A 5/16" hex wrench is used to tighten the connecting plug into a de-energized deadbreak connector or mating apparatus. Refer to Service Information MN650005EN for details.

Semiconducting collar provides continuity with semi-conducting shield of EPDM rubber of mating parts.

The versatile design can be used for connecting two or more 600 A deadbreak connectors or, with a bushing extender, to ease cable training by increasing the distance between an apparatus front place and 600 A connector.

Figure 3. Connecting plug (EPDM rubber) shown with stud.

Compression connector

Compression connectors are available in all aluminum or friction welded coppertop designs, aluminum with unthreaded holes and coppertop with either threaded or unthreaded holes. See Tables 3 and 4 for proper application. All connectors have aluminum crimp barrels and are designed for use with either aluminum or copper conductors.

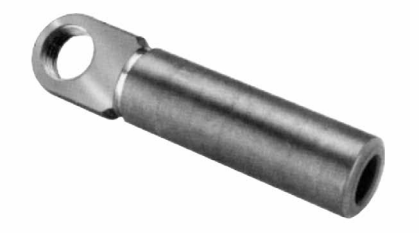

Figure 4. Compression connector.

Shear bolt connector (optional)

Bolted cable lug is fitted with stepless bolts, which shear off when optimum contact force has been reached. Provides electrical continuity for copper and aluminum conductors while eliminating need for dies and compression tools. Available in unthreaded aluminum for both BOL-T and Eaton's Cooper Power series BT-TAP™ connector applications only. See Table 5 for proper application.

Figure 5. Shear bolt connector.

Ordering information

Table 5. Applications

Deadbreak Connector Systems	15/16 in.– 9 Threaded Coppertop	11/16 in. Unthreaded Aluminum	11/16 in. Unthreaded Coppertop
PUSH-OP™	✓		
T-OP™ II	✓		
BOL-T™		✓	✓
BT-TAP™		✓	✓

Table 4. Compression Connector

Conductor Size				Catalog Number		
Concentric or Compressed		Compact or Solid		15/16 in. – 9 Threaded Coppertop	11/16 in. Unthreaded Aluminum	11/16 in. Unthreaded Coppertop
mm^2	AWG or kcmil	mm^2	AWG or kcmil			
–	2	–	1	CC6C11T	CC6A11U	CC6C11U
–	1	–	1/0	CC6C12T	CC6A12U	CC6C12U
50	1/0	70	2/0	CC6C13T	CC6A13U	CC6C13U
70	2/0	–	3/0	CC6C14T	CC6A14U	CC6C14U
–	3/0	95	4/0	CC6C15T	CC6A15U	CC6C15U
95	4/0	120	250	CC6C16T	CC6A16U	CC6C16U
120	250	–	300	CC6C17T	CC6A17U	CC6C17U
–	300	–	350	CC6C18T	CC6A18U	CC6C18U
–	350	185	400	CC6C19T	CC6A19U	CC6C19U
185	400	–	450	CC6C20T	CC6A20U	CC6C20U
–	450	240	500[a]	CC6C21T	CC6A21U	CC6C21U
240	500	300	600	CC6C22T	CC6A22U	CC6C22U
300	600	–	700	CC6C23T	CC6A23U	CC6C23U
–	650[b]	–	750[c]	CC6C24T	CC6A24U	CC6C24U
–	750[d]	–	900	CC6C25T	CC6A25U	CC6C25U
–	900	500	1000	CC6C26T	CC6A26U	CC6C26U
500	1000	–	–	CC6C27T	CC6A27U	CC6C27U
630	1250	–	–	CC6C28T	CC6A28U	CC6C28U

a. Also accepts 550 kcmil compact conductor.
b. Also accepts 700 kcmil compressed conductor.
c. Also accepts 800 kcmil compact conductor.
d. Also accepts 700 kcmil concentric conductor

Table 5. Shear Bolt Connector

Cable Conductor Size					
AWG or kcmil			mm^2		
Compact	Compressed	Concentric	Standard Sizes	Conductor Code	Catalog Number
1/0	1/0	1/0	50	**S1**	CDT630SB150
2/0	2/0	2/0	70		
3/0	3/0	3/0	95		
4/0	4/0	4/0	–		
250	250	250	120		
350	–	–	150		
–	350	350	185	**S3**	CDT630SB300
500	500	500	240		
600	600	600	300		
700	–	–	–		
–	700	700	–	**S4**	CDT630SB400
750	750	750	–		
800	800	–	400		
900	–	–	–		

Cable adapter

Molded cable adapter is available in sizes to fit cables from .610" to 1.970" in diameter (15.5 to 50.0 mm). It is molded of high quality peroxide cured insulation and semiconductive rubber to provide stress relief for terminated cable.

Figure 6. Cable adapter

Ordering Information

Cable Adapters

These adapters are for use on BOL-T, BT-TAP connector systems, as well as Eaton's Cooper Power series T-OP™ II and PUSH-OP™ connector systems. To select the correct adapter, determine the minimum and maximum diameter over insulation for the cable as shown in Figure 7. Then reference Table 6 to select the adapter whose range completely covers the minimum and maximum diameters. Complete the catalog number CA625_ by determining the cable range code for digit 6.

Example: For a cable with nominal insulation diameter of 1.200" and a tolerance of ± .030 inch:
1.200" - .030" = 1.170

1.200" + .030" = 1.230

From Table 6, select adapter CA625EE.

Table 6. Cable Diameter Range

Cable Diameter Range		
Inches	**mm**	**Code**
0.610-0.970	15.5-24.6	AB
0.750-1.080	19.1-27.4	CC
0.970-1.310	24.6-33.3	DD
1.090-1.470	27.7-37.3	EE
1.260-1.640	32.0-41.7	FF
1.360-1.710	34.5-43.4	GG
1.510-1.850	38.4-47.0	HH
1.700-1.970	43.2-50.0	JJ

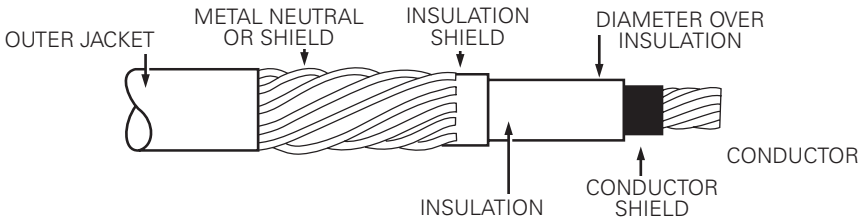

Figure 7. Cable illustration showing conductor and insulation layers.

Operating and test tool (O & T Tool)

The operating and test tool is used with a clampstick to test or operate LRTP-equipped connector. The standard tool is equipped with a molded EPDM cap that latches onto the 200 A interface of the LRTP for clampstick operation.

Figure 8. Operating and test tool.

Torque tool

The torque tool is used to properly torque LRTP-equipped connectors onto bushing. It can be hotstick-operated.

Figure 9. Torque tool.

Operating and test/torque tool (O & T/torque tool)

This tool combines the benefits of the O & T and torque tools into one convenient clampstick-operable tool. Used with LRTP-equipped connectors, the EPDM cap latches to the 200 A interface for clampstick operation. The integral torque limiter allows the operator to properly torque connectors without changing tools.

Figure 10. Operating and test/torque tool.

T-WRENCH

The T-wrench is used to install an LRTP into a connector. It is a T-handled, 5/16" hex wrench.

Figure 11. T- Wrench.

Table 7. 600 A, 15 kV Deadbreak BOL-T Accessories and Tools

Description	Catalog Number
Aluminum Insulating Plug with Cap and Stud	DIP625AS
Aluminum Insulating Plug with Cap, no Stud	DIP625A
Copper Insulating Plug with Cap and Stud	DIP625CS
Copper Insulating Plug with Cap, no Stud	DIP625C
Cap Only	DIPCAP
T-Body without Test Point	DT625
T-Body with Test Point	DT625T
Threaded Aluminum Stud	STUD-A
Threaded Copper Stud	STUD-C
T-OP II Stud	STUD-T
Installation Torque Tool	TQHD625
Aluminum Rubber Connecting Plug with Stud	DCP625AS
Aluminum Rubber Connecting Plug without Stud	DCP625A
Copper Rubber Connecting Plug with Stud	DCP625CS
Copper Rubber Connecting Plug without Stud	DCP625C
O & T Tool	
15 kV	OT615
25 kV	OT625
O & T Torque Tool	
15 kV	OTTQ615
25 kV	OTTQ625
T-Wrench	TWRENCH
5/16" Hex Shaft with 3/8" Drive Socket Tool	HD625

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

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

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