COOPER POWER SERIES

Specifier's guide

Line installation and protective equipment master catalog

5 kV–35 kV electrical distribution systems

Powering Business Worldwide

Education and Training
OCP and OVP CEU-Accredited Workshops

Overvoltage protection workshop

Learn how to economically prevent excessive transient overvoltages from damaging electric utility distribution systems equipment or interrupting normal power system operation in Eaton's two-day **Overvoltage Protection Workshop**. The workshop is designed for utility distribution engineers or any engineer who is involved with design or implementation of overvoltage protection schemes for utility distribution systems.

Class topics include:

- Basic overvoltage protection
- Basic insulation level (BIL)
- Insulation coordination
- Sources of system overvoltages
- Arrester fundamentals
- Application of arresters and other overvoltage protection schemes
- Distribution equipment protection
- Overhead and underground systems protection
- Substation transients
- Low-voltage surge protection

Overcurrent protection workshop

Get hands-on experience learning how to apply overcurrent protection schemes in Eaton's two-day Distribution Overcurrent Protection Workshop. Any engineer who is involved with design or operation of overcurrent protection schemes for utilities will benefit. The workshop will be more beneficial to you if you have a working knowledge of overcurrent protection devices.

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System coordination rules and procedures to incorporate into your daily routine

- Fuse-to-fuse expulsion and current-limiting coordination
- Transformer fusing protection
- Protection with sectionalizers
- Recloser and source-side coordination and load-side coordination
- Exposure to CYME™ Power Engineering Software...
  and many more

Additional details

The classes are available virtually or on-site at our Power Systems Experience Center locations in Warrendale, PA, and Houston, TX.

Learn more and register online at **https://www.eaton.com/us/en-us/services/electrical-worker-training/in-person-instruction/overcurrent-protection-workshop.html**.

Scan the QR code to register.

Contents

Standard interfaces for separable connectors and components

The following diagram specifies the IEEE® Std 386™ interfaces supplied by Eaton for various applications to ensure interchangeability of any mating components.

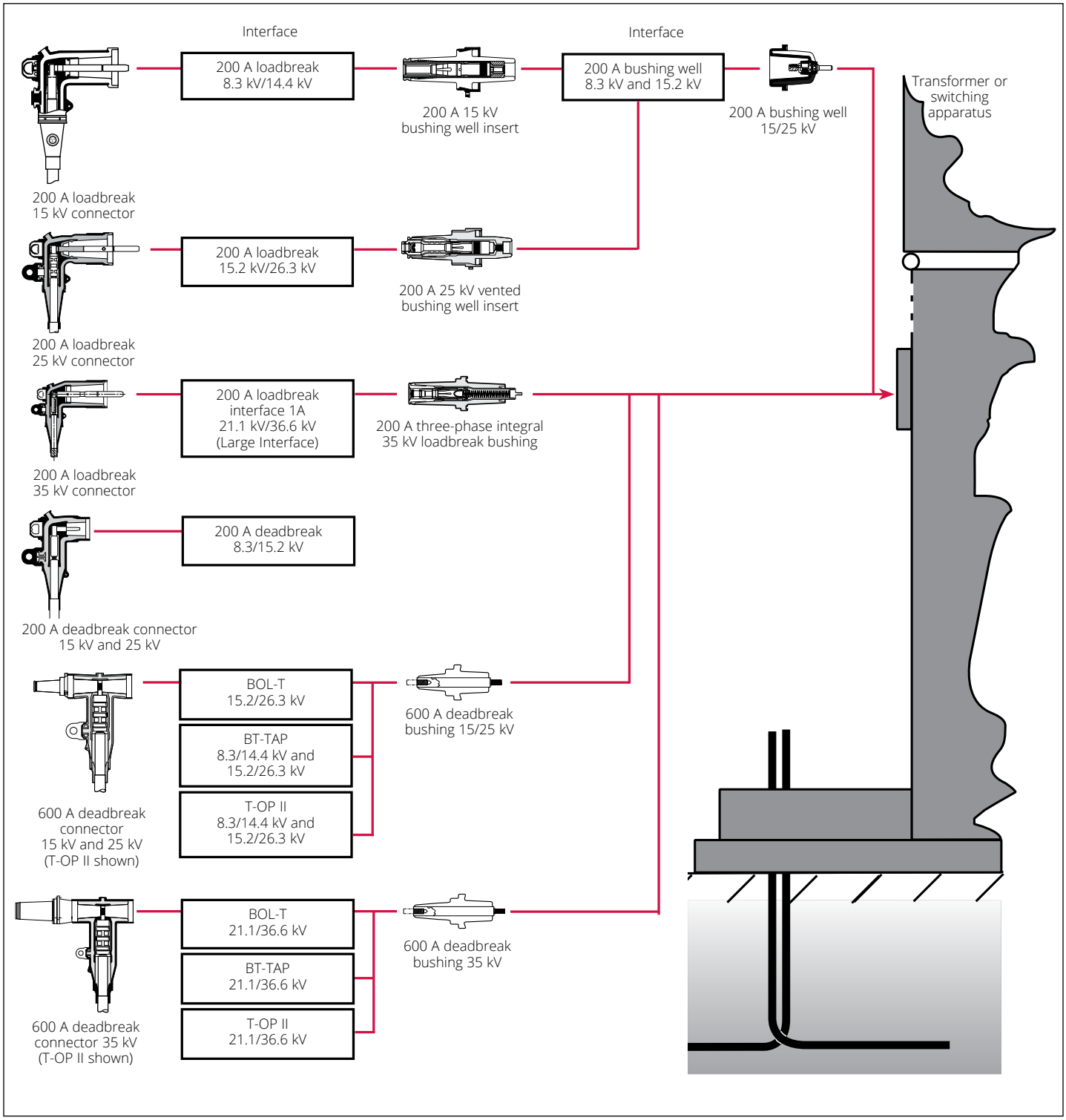


Figure 1. Interface description per IEEE Std 386

Certified tests and performance

Eaton's Cooper Power series Connectors, Splices, Underground Surge Arresters, Tools, Bushings, Fusing, Faulted Circuit Indicators and Sectionalizing Equipment have been designed and tested per applicable portions of Institute of Electrical and Electronics Engineers, Inc. (IEEE®), American National Standards Institute (ANSI®), National Electrical Manufacturers Association (NEMA) and other industry standards including:

- IEEE Std 386 for Separable Connectors
- IEEE Std 404™ for Cable Joints and Splices
- IEEE Std C62.11™ for Metal Oxide Surge Arresters
- IEEE Std C37.41™ for Current-Limiting Fuses
- IEEE Std 592™ for Exposed Semi-conducting Shields
- ANSI C119.4 Standard for Copper and Aluminum Conductor Connectors
- AEIC CS5, CS6 and CS8 Standards for XLP and EPR Insulated Cables
- ICEA S-94-649 Standard for XLP and EPR Insulated Cables

Eaton rates its Cooper Power series separable connectors for 15 kV, 25 kV and 35 kV systems in accordance with the following ratings.

Table 1. Splice voltage ratings in accordance with IEEE Std 404

Voltage ratings and characteristics

Description	Voltage		
Standard voltage class (kV)	15	25	35
Maximum rating phase-to-ground (kV rms)	8.7	14.4	20.2
AC 60 Hz 1 minute withstand (kV rms)	35	52	69
DC 15 minute withstand (kV)	70	100	125
BIL and full wave crest (kV peak)	110	150	200
Minimum corona voltage level (kV)	13	22	31

Table 2. Splice current ratings in accordance with IEEE Std 404

Current ratings and characteristics

Description	Amperes
Continuous	Equal to the current rating of the cable per IEEE Std 404
Short time	Equal to the current rating of the cable per IEEE Std 404

Table 3. 200 A loadbreak connector ratings in accordance with IEEE Std 386

Voltage ratings	15 kV	25 kV	35 kV
Standard voltage class			
Maximum rating phase-to-phase	14.4	26.3	36.6
Maximum rating phase-to-ground	8.3	15.2	21.1
AC 60 Hz 1 minute withstand	34	40	50
DC 15 minute withstand	53	78	103
BIL and full wave crest	95	125	150
Minimum corona voltage level	11	19	26
Current ratings			
Continuous	200 A rms	200 A rms	200 A rms
Switching	10 make/break operations at 200 A rms at 14.4 kV	10 make/break operations at 200 A rms at 26.3 kV	10 make/break operations at 200 A rms at 36.6 kV
Fault closure	10,000 A rms sym. at 14.4 kV for 0.17 s after 10 switching operations	10,000 A rms sym. at 26.3 kV for 0.17 s after 10 switching operations	10,000 A rms sym. at 36.6 kV for 0.17 s after 10 switching operations
Short time	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s

Table 4. 600 A deadbreak connector ratings in accordance with IEEE Std 386

Voltage ratings	15 kV	25 kV	35 kV
Standard voltage class			
Maximum rating phase-to-ground	15.2	15.2 ①	21.1
AC 60 Hz 1 minute withstand	40	40	50
DC 15 minute withstand	78	78	103
BIL and full wave crest	125	125	150
Minimum corona voltage level	19	19	26
Current ratings			
600 A interface ②			
Continuous	600 A rms	600 A rms	600 A rms
24-hour overload	1000 A rms	1000 A rm	1000 A rms
Short time	25,000 A rms sym. for 0.17 s 10,000 A rms sym. for 3.0 s	25,000 A rms sym. for 0.17 s 10,000 A rms sym. for 3.0 s	25,000 A rms sym. for 0.17 s 10,000 A rms sym. for 3.0 s
200 A interface on loadbreak reducing tap plug (LRTP) ③			
Continuous	200 A rms	200 A rms	200 A rms
Switching	10 make/break operations at 200 A rms at 14.4 kV	10 make/break operations at 200 A rms at 26.3 kV	10 make/break operations at 200 A rms at 36.6 kV
Fault closure	10,000 A rms sym. at 14.4 kV for 0.17 s after 10 switching operations	10,000 A rms sym. at 26.3 kV for 0.17 s after 10 switching operations	10,000 A rms sym. at 36.6 kV for 0.1 7s after 10 switching operations
Short time	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s	10,000 A rms sym. for 0.17 s 3500 A rms sym. for 3.0 s

① 25 kV insulating plugs and standoff bushings are rated 16.2 kV phase-to-ground.

② Optional 900 A rating is available. Refer to 600/900 A deadbreak connector section for more detail.

③ System design and protection must recognize the ratings of 200 A interface.

Conductor sizing

Part number selection process for cable sensitive products

Eaton designs its Cooper Power series 200 A and 600 A connector products for applications on XLPE, EPR or other solid dielectric insulated underground electrical cables. In order to maintain a reliable termination, the cable accessories must be sized correctly with the cable conductor size and cable insulation diameter.

The cable conductor size is used to determine the compression connector used. Proper sizing is important to ensure reliable current transfer from the underground cable conductor to the elbow connector. Conductor diameters are dependent on the conductor size in AWG or kcmil, and conductor type (stranded, compressed, compact or solid).

The cable insulation diameter (the diameter over the insulation) is critical because it is important to maintain a tightly sealed fit between the cable insulation and the elbow housing at the cable entrance. As the insulation thickness changes, so must the range of the cable accessory. Cable insulation diameter can be determined from the cable manufacturer's specification, or by referring to **Table 6** (for cable made to the AEIC Standard including the ± 0.030 inch tolerance) or **Table 7** (for cable made to the ICEA Standard) for minimum and maximum diameters.

Example:
Proper elbow part number selection

Select Eaton's Cooper Power series 15 kV 200 A Loadbreak Elbow with optional integral jacket seal and test point for an AEIC standard tape-shielded 15 kV cable with 133% insulation and 1/0 compact stranded conductor with an outer jacket diameter of 1.07 inches.

Step 1 – Base part number selection

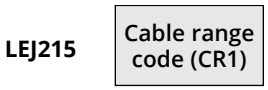
Select base part number of LEJ215 from **Table 8** for 15 kV voltage class. Note that **Table 8** references CR1 and CC1 tables on **page 16**.

Step 2 – Determine insulation outside diameter range

Because cable is made to AEIC Standards, refer to **Table 6**. 133% 15 kV cable corresponds to 220 mil insulation wall thickness. The AEIC table gives a range of 0.805 to 0.865 inches for 1/0 compact 220 mil cable.

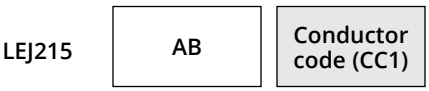
Step 3 – Elbow cable range selection

Refer to **Table 9** on **page 16** and select a cable range code of "AB" with a range of 0.610 to 0.970 inches to cover 0.805 to 0.865 inches.



Step 4 – Elbow connector selection

Refer to **Table 12** on **page 16** and select a conductor code of "05" which applies to the specified 1/0 compact conductor.



Step 5 – Optional test point selection

In accordance with Note 1 on **page 13**, for an elbow with test point, add a "T" after the cable range and conductor code.

Step 6 – Optional ground strap

Tape-shielded cable requires a ground strap and bleeder wire to terminate. Add "GS" after test point option.

Step 7 – Ordering

Therefore, order part number LEJ215AB05TGS.

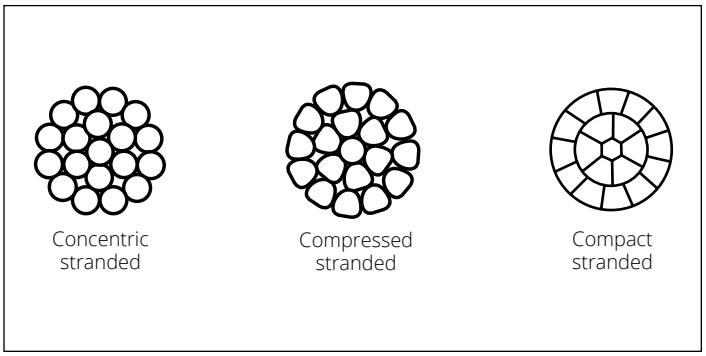


Figure 2. Types of stranded conductor

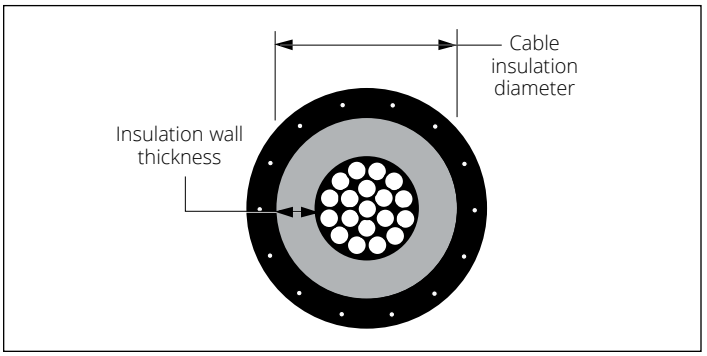


Figure 3. Cable insulation

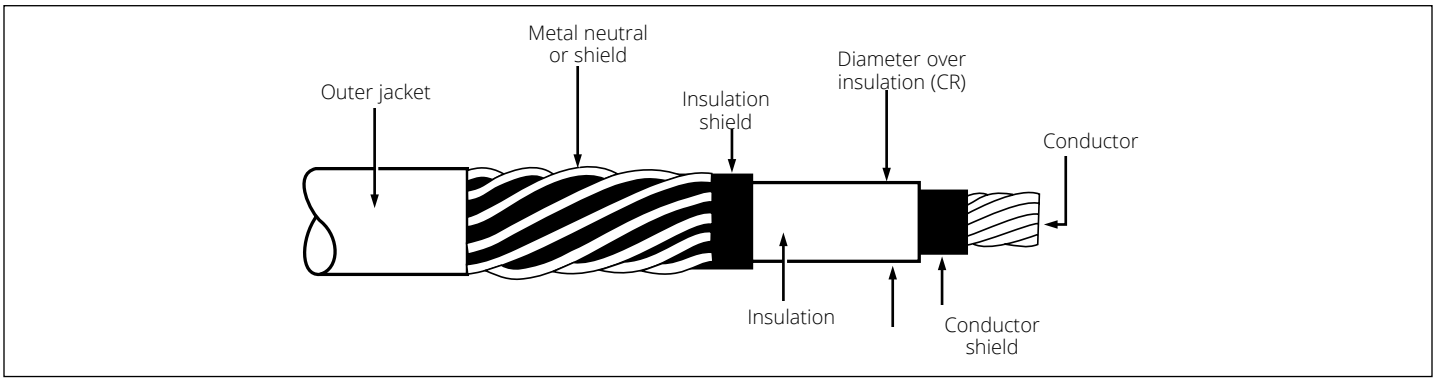


Figure 4. Illustration showing typical construction of medium-voltage underground cable

Table 5. Cable conductor reference

Conductor size AWG or kcmil	No. of strands and their nom. strand dia. (inches)	Cross-sectional area		Stranded conductors (inches)	Compressed conductors (inches)	Compact conductors (inches)	Solid Cconductors (inches)
		Square inches	mm^2 conversion				
14	7 x 0.0242	0.0032	2.08	0.073	—	—	0.064
12	7 x 0.0305	0.0051	3.31	0.092	—	—	0.081
10	7 x 0.0385	0.0082	5.26	0.116	—	—	0.102
8	7 x 0.0486	0.0130	8.37	0.146	—	—	0.129
6	7 x 0.0612	0.0206	13.30	0.184	—	—	0.162
4	7 x 0.0772	0.0328	21.15	0.232	—	—	0.204
2	7 x 0.0974	0.0521	33.62	0.292	0.283	0.268	0.258
1	19 x 0.0664	0.0657	42.41	0.332	0.322	0.299	0.289
1/0	19 x 0.0745	0.0829	53.49	0.373	0.362	0.336	0.325
2/0	19 x 0.0837	0.1045	67.43	0.418	0.405	0.376	—
3/0	19 x 0.0940	0.1318	85.01	0.470	0.456	0.423	—
4/0	19 x 0.1055	0.1662	107.2	0.528	0.512	0.475	—
250	37 x 0.0822	0.1964	127	0.575	0.558	0.520	—
350	37 x 0.0973	0.2749	177	0.681	0.661	0.616	—
500	37 x 0.1162	0.3927	253	0.813	0.789	0.736	—
600	61 x 0.0992	0.4712	304	0.893	0.866	0.813	—
700	61 x 0.1071	0.5498	355	0.964	0.935	0.877	—
750	61 x 0.1109	0.5891	380	0.998	0.968	0.908	—
800	61 x 0.1145	0.6283	405	1.031	1.000	0.938	—
900	61 x 0.1215	0.7069	456	1.094	1.061	0.999	—
1000	61 x 0.1280	0.7854	507	1.152	1.117	1.060	—
1100	91 x 0.1099	0.8639	557	1.209	1.173	—	—
1200	91 x 0.1148	0.9425	608	1.263	1.225	—	—
1250	91 x 0.1172	0.9818	633	1.289	1.25	—	—
1300	91 x 0.1195	1.021	659	1.315	1.276	—	—
1400	91 x 0.1240	1.100	709	1.364	1.323	—	—
1500	91 x 0.1284	1.178	760	1.412	1.370	—	—

Table 6. AEIC insulation diameter chart
Cable insulation diameters for standard AEIC cables with 175, 220, 260, and 345 mil insulation wall thickness.

			Concentric stranded		Compressed stranded		Compact stranded		Solid	
Insulation AWG or kcmil	**Wall thickness ①** **(inches)**	**Voltage class kV**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**
#2	0.175	15	0.670	0.730	0.665	0.725	0.650	0.710	0.640	0.700
	0.220	15	0.760	0.820	0.775	0.815	0.740	0.800	0.730	0.790
	0.260	25	—	—	—	—	—	—	—	—
	0.345	35	—	—	—	—	—	—	—	—
#1	0.175	15	0.710	0.770	0.700	0.760	0.680	0.740	0.670	0.730
	0.220	15	0.800	0.860	0.790	0.850	0.770	0.830	0.760	0.820
	0.260	25	0.880	0.940	0.870	0.930	0.850	0.910	0.840	0.900
	0.345	35	—	—	—	—	—	—	—	—
1/0	0.175	15	0.755	0.815	0.740	0.800	0.715	0.775	0.705	0.765
	0.220	15	0.845	0.905	0.830	0.890	0.805	0.865	0.795	0.855
	0.260	25	0.925	0.985	0.910	0.970	0.885	0.945	0.875	0.935
	0.345	35	1.095	1.155	1.080	1.140	1.055	1.115	1.045	1.105
2/0	0.175	15	0.800	0.860	0.785	0.845	0.755	0.815	0.805	0.905
	0.220	15	0.890	0.950	0.875	0.935	0.845	0.905	0.835	0.895
	0.260	25	0.970	1.030	0.955	1.015	0.925	0.985	0.915	0.975
	0.345	35	1.140	1.200	1.125	1.185	1.095	1.155	1.085	1.145
3/0	0.175	15	0.850	0.910	0.835	0.895	0.805	0.865	0.850	0.940
	0.220	15	0.940	1.000	0.925	0.985	0.895	0.955	0.880	0.940
	0.260	25	1.020	1.080	1.005	1.065	0.975	1.035	0.960	1.020
	0.345	35	1.190	1.250	1.175	1.235	1.145	1.205	1.130	1.190
4/0	0.175	15	0.910	0.970	0.890	0.950	0.855	0.915	0.900	0.990
	0.220	15	1.000	1.060	0.980	1.040	0.945	1.005	0.930	0.990
	0.260	25	1.080	1.140	1.060	1.120	1.025	1.085	1.010	1.070
	0.345	35	1.250	1.310	1.230	1.290	1.195	1.255	1.180	1.240
250	0.175	15	0.965	1.025	0.950	1.010	0.910	0.970	—	—
	0.220	15	1.055	1.115	1.040	1.100	1.000	1.060		
	0.260	25	1.145	1.205	1.130	1.190	1.095	1.150		
	0.345	35	1.320	1.380	1.305	1.365	1.265	1.325		
350	0.175	15	1.070	1.130	1.050	1.110	1.005	1.065	—	—
	0.220	15	1.160	1.220	1.140	1.200	1.095	1.155		
	0.260	25	1.250	1.310	1.230	1.290	1.185	1.245		
	0.345	35	1.425	1.485	1.405	1.465	1.360	1.420		
500	0.175	15	1.205	1.265	1.180	1.240	1.125	1.185	—	—
	0.220	15	1.295	1.355	1.270	1.330	1.215	1.275		
	0.260	25	1.385	1.445	1.360	1.420	1.305	1.365		
	0.345	35	1.560	1.620	1.535	1.595	1.480	1.540		
600	0.175	15	1.295	1.355	1.265	1.325	1.215	1.275	—	—
	0.220	15	1.385	1.445	1.355	1.415	1.305	1.365		
	0.260	25	1.475	1.535	1.445	1.505	1.395	1.455		
	0.345	35	1.650	1.710	1.625	1.680	1.570	1.630		
700	0.175	15	1.365	1.425	1.335	1.395	1.275	1.335	—	—
	0.220	15	1.455	1.515	1.425	1.485	1.365	1.425		
	0.260	25	1.545	1.605	1.515	1.575	1.455	1.515		
	0.345	35	1.720	1.780	1.690	1.750	1.630	1.690		
750	0.175	15	1.400	1.460	1.370	1.430	1.310	1.370	—	—
	0.220	15	1.490	1.550	1.460	1.520	1.400	1.460		
	0.260	25	1.580	1.640	1.550	1.610	1.490	1.550		
	0.345	35	1.755	1.815	1.725	1.785	1.665	1.725		
800	0.175	15	1.430	1.490	1.400	1.460	1.340	1.400	—	—
	0.220	15	1.520	1.580	1.490	1.550	1.430	1.490		
	0.260	25	1.610	1.670	1.580	1.640	1.520	1.580		
	0.345	35	1.785	1.845	1.755	1.815	1.695	1.755		
900	0.175	15	1.495	1.555	1.460	1.520	1.400	1.460	—	—
	0.220	15	1.585	1.645	1.550	1.610	1.490	1.550		
	0.260	25	1.675	1.735	1.640	1.700	1.580	1.640		
	0.345	35	1.850	1.910	1.815	1.875	1.755	1.815		
1000	0.175	15	1.550	1.610	1.515	1.575	1.460	1.520	—	—
	0.220	15	1.640	1.700	1.605	1.665	1.550	1.610		
	0.260	25	1.730	1.790	1.695	1.755	1.640	1.700		
	0.345	35	1.850	1.955	1.815	1.920	1.760	1.865		

① See table below for standard insulation thickness.

175 mil is 100% insulated cable at 15 kV.
220 mil is 133% insulated cable at 15 kV.
260 mil is 100% insulated cable at 25 kV.
345 mil is 133% insulated cable at 25 kV.
345 mil is 100% insulated cable at 35 kV.

Table 7. ICEA insulation diameter chart
Cable insulation diameters for standard ICEA cables with 175, 220, 260, and 345 mil insulation wall thickness.

AWG or kcmil	Insulation wall thickness ① (inches)	Voltage class kV	Concentric stranded		Compressed stranded		Compact stranded		Solid	
			Minimum diameter (inches)	Maximum diameter (inches)	Minimum diameter (inches)	Maximum diameter (inches)	Minimum diameter (inches)	Maximum diameter (inches)	Minimum diameter (inches)	Maximum diameter (inches)
#2	0.175	15	0.645	0.730	0.635	0.720	0.620	0.705	0.610	0.695
	0.220	15	0.735	0.825	0.725	0.815	0.710	0.800	0.700	0.790
	0.260	25	—	—	—	—	—	—	—	—
	0.345	35	—	—	—	—	—	—	—	—
#1	0.175	15	0.685	0.770	0.675	0.760	0.655	0.735	0.645	0.725
	0.220	15	0.775	0.865	0.765	0.855	0.745	0.830	0.735	0.820
	0.260	25	0.845	0.935	0.835	0.925	0.815	0.905	0.805	0.895
	0.345	35	—	—	—	—	—	—	—	—
1/0	0.175	15	0.725	0.810	0.715	0.800	0.690	0.775	0.680	0.760
	0.220	15	0.815	0.905	0.805	0.895	0.780	0.865	0.770	0.855
	0.260	25	0.885	0.980	0.875	0.965	0.850	0.940	0.835	0.925
	0.345	35	1.055	1.155	1.045	1.145	1.020	1.120	1.010	1.110
2/0	0.175	15	0.775	0.855	0.760	0.845	0.730	0.815	0.715	0.800
	0.220	15	0.865	0.950	0.850	0.935	0.820	0.905	0.805	0.895
	0.260	25	0.935	1.025	0.920	1.010	0.890	0.980	0.875	0.965
	0.345	35	1.105	1.200	1.090	1.190	1.060	1.160	1.045	1.145
3/0	0.175	15	0.825	0.905	0.810	0.895	0.775	0.860	0.765	0.845
	0.220	15	0.915	1.000	0.900	0.985	0.865	0.955	0.855	0.940
	0.260	25	0.985	1.075	0.970	1.060	0.935	1.030	0.925	1.015
	0.345	35	1.155	1.255	1.140	1.240	1.105	1.205	1.095	1.195
4/0	0.175	15	0.880	0.965	0.865	0.950	0.830	0.910	0.815	0.895
	0.220	15	0.970	1.060	0.955	1.045	0.920	1.005	0.905	0.990
	0.260	25	1.040	1.135	1.025	1.115	0.990	1.080	0.975	1.065
	0.345	35	1.210	1.310	1.195	1.295	1.160	1.260	1.145	1.245
250	0.175	15	0.935	1.020	0.920	1.005	0.880	0.965	—	—
	0.220	15	1.025	1.115	1.010	1.100	0.970	1.060		
	0.260	25	1.095	1.190	1.080	1.175	1.040	1.135		
	0.345	35	1.265	1.370	1.250	1.350	1.210	1.315		
350	0.175	15	1.045	1.130	1.025	1.110	0.980	1.065	—	—
	0.220	15	1.135	1.220	1.115	1.200	1.070	1.155		
	0.260	25	1.205	1.295	1.185	1.275	1.140	1.230		
	0.345	35	1.375	1.475	1.355	1.455	1.310	1.410		
500	0.175	15	1.175	1.260	1.150	1.235	1.100	1.185	—	—
	0.220	15	1.265	1.355	1.240	1.330	1.190	1.275		
	0.260	25	1.335	1.430	1.310	1.405	1.260	1.350		
	0.345	35	1.505	1.605	1.480	1.580	1.430	1.530		
600	0.175	15	1.265	1.350	1.235	1.325	1.185	1.270	—	—
	0.220	15	1.355	1.445	1.325	1.415	1.275	1.365		
	0.260	25	1.425	1.520	1.395	1.490	1.345	1.440		
	0.345	35	1.595	1.695	1.565	1.670	1.515	1.615		
700	0.175	15	1.335	1.420	1.305	1.390	1.245	1.335	—	—
	0.220	15	1.425	1.515	1.395	1.485	1.335	1.430		
	0.260	25	1.495	1.590	1.465	1.560	1.405	1.500		
	0.345	35	1.665	1.765	1.635	1.740	1.575	1.680		
750	0.175	15	1.370	1.455	1.340	1.425	1.280	1.365	—	—
	0.220	15	1.460	1.550	1.430	1.520	1.370	1.460		
	0.260	25	1.530	1.625	1.500	1.595	1.440	1.535		
	0.345	35	1.700	1.800	1.670	1.770	1.610	1.710		
800	0.175	15	1.400	1.490	1.370	1.455	1.310	1.395	—	—
	0.220	15	1.490	1.580	1.460	1.550	1.400	1.490		
	0.260	25	1.560	1.655	1.530	1.625	1.470	1.565		
	0.345	35	1.730	1.835	1.700	1.805	1.640	1.740		
900	0.175	15	1.465	1.550	1.430	1.520	1.370	1.455	—	—
	0.220	15	1.555	1.645	1.520	1.610	1.460	1.550		
	0.260	25	1.625	1.720	1.590	1.685	1.530	1.625		
	0.345	35	1.795	1.895	1.760	1.865	1.700	1.800		
1000	0.175	15	1.520	1.610	1.485	1.575	1.430	1.515	—	—
	0.220	15	1.610	1.705	1.575	1.670	1.520	1.610		
	0.260	25	1.680	1.775	1.645	1.740	1.590	1.685		
	0.345	35	1.850	1.955	1.815	1.920	1.760	1.865		

① See table below for standard insulation thickness.

175 mil is 100% insulated cable at 15 kV.
220 mil is 133% insulated cable at 15 kV.
260 mil is 100% insulated cable at 25 kV.
345 mil is 133% insulated cable at 25 kV.
345 mil is 100% insulated cable at 35 kV.

Table 7. ICEA insulation diameter chart, continued
Cable insulation diameters for standard ICEA cables with 175, 220, 260, and 345 mil insulation wall thickness.

			Concentric stranded		Compressed stranded		Compact stranded		Solid	
AWG or kcmil	**Insulation wall thickness ① (inches)**	**Voltage class kV**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**	**Minimum diameter (inches)**	**Maximum diameter (inches)**
1100	0.175	15	1.675	1.770	1.640	1.735	1.580	1.675	1.580	1.675
	0.220	15	1.675	1.770	1.640	1.735	1.580	1.675	1.580	1.675
	0.260	25	1.745	1.845	1.710	1.810	1.650	1.745	1.650	1.745
	0.345	35	1.915	2.020	1.880	1.985	1.820	1.925	1.820	1.925
1200	0.175	15	1.730	1.825	1.695	1.785	—	—	—	—
	0.220	15	1.730	1.825	1.695	1.785				
	0.260	25	1.800	1.900	1.765	1.860				
	0.345	35	1.970	2.075	1.935	2.040				
1250	0.175	15	1.755	1.850	1.720	1.810	1.650	1.745	1.650	1.745
	0.220	15	1.755	1.850	1.720	1.810	1.650	1.745	1.650	1.745
	0.260	25	1.825	1.925	1.790	1.885	1.720	1.820	1.720	1.820
	0.345	35	1.995	2.100	1.960	2.065	1.890	1.995	1.890	1.995
1300	0.175	15	1.780	1.875	1.745	1.835	—	—	—	—
	0.220	15	1.780	1.875	1.745	1.835				
	0.260	25	1.850	1.950	1.815	1.910				
	0.345	35	2.020	2.125	1.985	2.090				
1400	0.175	15	1.835	1.925	1.790	1.885	—	—	—	—
	0.220	15	1.835	1.925	1.790	1.885				
	0.260	25	1.905	2.000	1.860	1.960				
	0.345	35	2.075	2.180	2.030	2.135				
1500	0.175	15	1.880	1.975	1.840	1.930	1.765	1.860	1.765	1.860
	0.220	15	1.880	1.975	1.840	1.930	1.765	1.860	1.765	1.860
	0.260	25	1.950	2.045	1.910	2.005	1.835	1.935	1.835	1.935
	0.345	35	2.120	2.225	2.080	2.185	2.005	2.110	2.005	2.110

① See table below for standard insulation thickness.

175 mil is 100% insulated cable at 15 kV.
220 mil is 133% insulated cable at 15 kV.
260 mil is 100% insulated cable at 25 kV.
345 mil is 133% insulated cable at 25 kV.
345 mil is 100% insulated cable at 35 kV.

200 A loadbreak connectors

Eaton connects underground cable to transformers, sectionalizing cabinets and junctions with its Cooper Power series 200 A 15, 25, and 35 kV loadbreak elbow connectors and accessories that are ideal for submersible, fully shielded and insulated plug-in terminations. These connectors are molded using high-quality, peroxide-cured EPDM insulation for reliable field performance.

15 kV and 25 kV loadbreak elbows are available with an integral jacket seal for use with concentric neutral and other types of shielded cables.

All 200 A loadbreak connectors meet the electrical, mechanical, and dimensional requirements of IEEE standards and are designed to be fully interchangeable with other major manufacturers currently complying with IEEE standards.

25 kV POSI-BREAK elbow and cap

Eaton increases strike distance and improves reliability with its Cooper Power series POSI-BREAK™ elbow and cap. The added features solve problems, such as:

- **Partial vacuum flashovers**—Under certain conditions during 25 kV switching, a partial vacuum can decrease the dielectric strength of the air inside the elbow/bushing or cap/bushing. This increases the possibility of a flashover from the elbow or cap's probe along the bushing interface to the grounded collar on the mating bushing product. The POSI-BREAK design eliminates the possibility of partial vacuum flashovers during switching because of the increased strike distance.
- **Contamination**—The field-proven interface seal prevents the ingress of moisture or contaminants. However, contamination introduced during installation or switching operations can reduce the strike distance along the interface. The increased insulation of the POSI-BREAK design counteracts the effect of contamination, increasing system reliability.

25 kV POSI-BREAK elbow and cap specification information

To capitalize on the benefits of the POSI-BREAK elbow and cap, include the following information for both the 25 kV 200 A loadbreak elbow and the insulated protective cap in your specification:

- Both elbow and cap must fully comply with IEEE Std 386
- Strike distance from energized component to ground shall be at least 5.6 inches at 1/2-inch interface separation
- Both elbow and cap shall have an insulated probe and conductive Faraday cage for relief of electrical stress and prevention of partial discharge
- Semi-conductive insert shall be completely surrounded with EPDM insulating rubber

35 kV large interface elbow bushing system ①

Eaton's Cooper Power series 35 kV 200 A large interface elbow bushing system is a reliable, field-proven design. This system has over 40 years of field experience while being used on large 35 kV distribution systems. Features of the large interface system include:

- Increased strike distance to provide greater reliability and overall performance
- Reliable loadbreak switching and fault closure capability
- Full line of large interface accessory products

① Refer to bushing section on **page 57** for more information on the bushing.

35 kV elbow and accessories specification information

To capitalize on the benefits of Eaton's 35 kV large interface elbow, include the following information in your specification:

- The 200 A elbows and accessories shall be 21.1 kV/36.6 kV three-phase rated, meeting the requirements of IEEE Std 386 interface No. 1A (large 35 kV class interface)

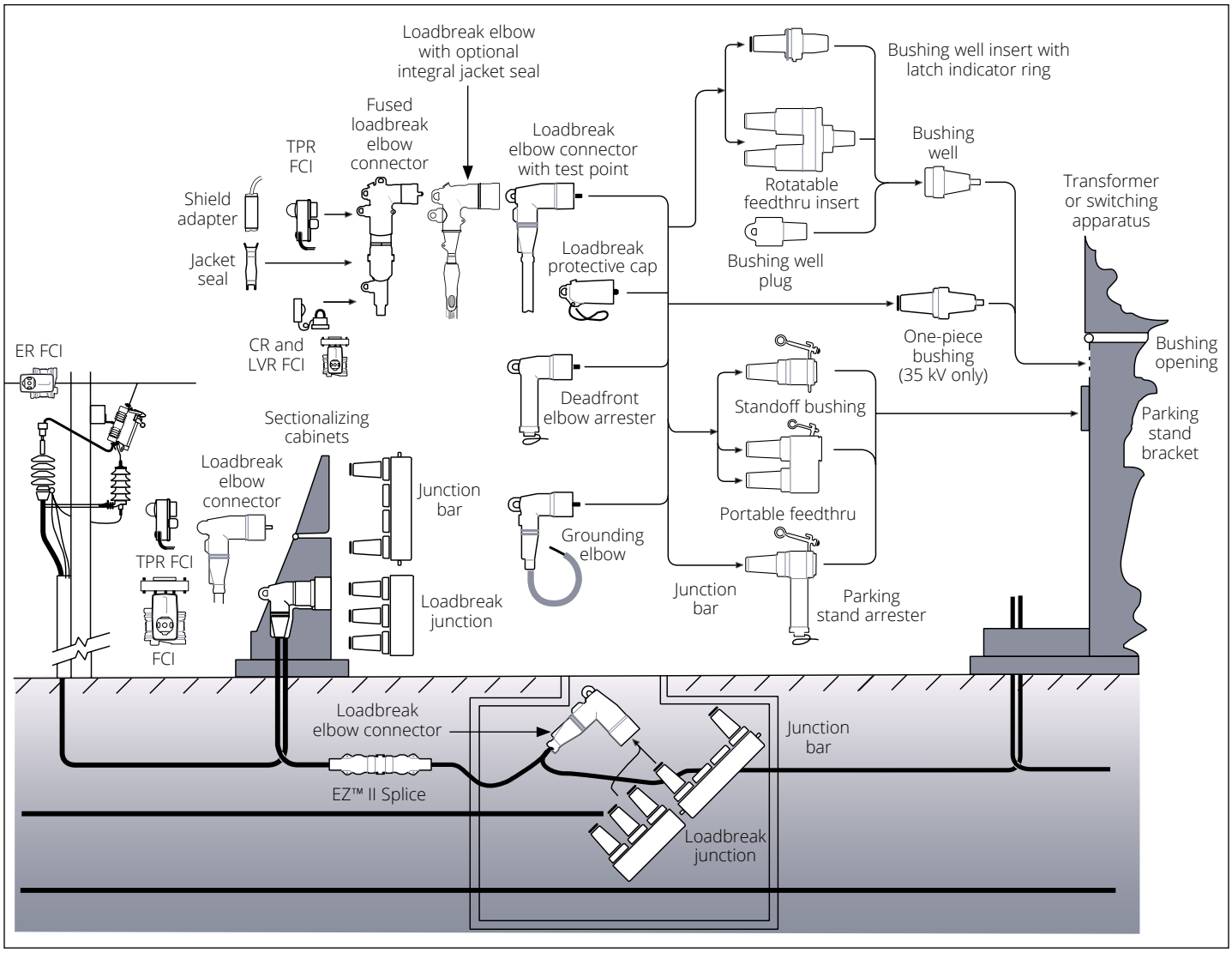
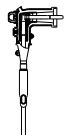
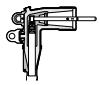
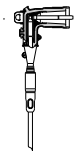
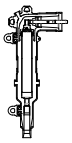
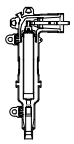


Figure 5. Interface elbow bushing system

200 A loadbreak and deadbreak connectors

Table 8. 200 A loadbreak and deadbreak connectors

	Catalog section	Description	kV class	Base part number	Notes
	CA650062EN	Loadbreak elbow	15 kV	LE215 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③ ④
	CA650062EN	Loadbreak elbow with integral jacket seal	15 kV	LEJ215 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③
	CA650098EN	Loadbreak elbow	25 kV	LE225 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③ ④
	CA650098EN	Loadbreak elbow with integral jacket seal	25 kV	LEJ225 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③
	CA650100EN	POSI-BREAK loadbreak elbow	25 kV	PLE225 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③ ④
	CA650100EN	POSI-BREAK loadbreak elbow with integral jacket seal	25 kV	PLEJ225 **CR1 CC1** (see **Table 9** and **Table 12**)	① ② ③
	CA650069EN	Fused loadbreak elbow connector	15 kV	LFEP215TFEC **CR3 CC2** AT (see **Table 11** and **Table 15**) (see **Table 16** for fuse ratings and catalog numbers)	⑧
	CA650070EN	Fused loadbreak elbow connector	25 kV	LFEP225TFEC **CR3 CCC2** AT (see **Table 11** and **Table 15**) (see **Table 16** for fuse ratings and catalog numbers)	⑧
	CA650068EN	Loadbreak elbow	35 kV	CA650062EN **CR2 CC1** (see **Table 10** and **Table 12**)	① ③ ④

① For an elbow with test point, add a "T" after the conductor code (CC1).

② For optional braided ground strap/bleeder wire for termination tape and wire shielded cable, insert "GS" after test point and/or bail option code.

③ For individually packaged product in a corrugated cardboard box, insert an "X" as the last character in the part number.

④ To include the SA series cold shrinkable metallic shield adapters kit or CS series cold shrink cable sealing kit, add the appropriate suffix "SA1", "SA2", "SA3", "SA4" or "CS1", "CS2", or "CS3" to the end of the loadbreak elbow catalog number. Refer to **Table 13** and **Table 14**.

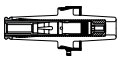
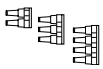
⑤ To order the long version (extended) of the bushing insert, put in an "L" as the seventh character in the part number.

⑥ Specify the number of interfaces by inserting a "2", "3", or "4" directly after the base part number.

⑦ To add a stainless steel bracket, insert a "B" as the last character in the part number, or to add U-straps, insert a "U" as the last character in the part number.

⑧ Fuses sold separately. See **Table 16**. Reference catalog CA132040EN.

Table 8. 200 A loadbreak and deadbreak connectors, continued

	Catalog section	Description	kV class	Base part number	Notes
	CA650073EN	Loadbreak bushing insert	15 kV	LBI215	③
	CA650074EN	Loadbreak bushing insert	25 kV	LBI225	③ ⑤
	CA650078EN and CA650077EN	Loadbreak feedthru insert	15 kV	LFI215	
			25 kV	LFI225	
	CA650072EN	Loadbreak portable feedthru	15 kV		
			Horizontal	LPF215H	
			Vertical	LPF215V	
			Universal	LPF215U	
	CA650092EN	Loadbreak portable feedthru	25 kV		
			Horizontal	LPF225H	
			Vertical	LPF225V	
			Universal	LPF225U	
	CA650015EN	Loadbreak portable feedthru	35 kV		
			Horizontal	LPF235H	
			Vertical	LPF235V	
	CA650102EN (15 kV) and CA650081EN (25 kV) and CA650014EN (35 kV)	Loadbreak junction	15 kV	LJ215C__	⑥ ⑦
			25 kV	LJ225C__	⑥ ⑦
			35 kV	LJ235C__	⑥ ⑦
	CA650094EN	Insulated bushing well plug	15/25 kV	IBWP225	
	CA650076EN	Loadbreak protective cap	15 kV	LPC215	③

① For an elbow with test point, add a "T" after the conductor code (CC1).

② For optional braided ground strap/bleeder wire for termination tape and wire shielded cable, insert "GS" after test point and/or bail option code.

③ For individually packaged product in a corrugated cardboard box, insert an "X" as the last character in the part number.

④ To include the SA series cold shrinkable metallic shield adapters kit or CS series cold shrink cable sealing kit, add the appropriate suffix "SA1", "SA2", "SA3", "SA4" or "CS1", "CS2", or "CS3" to the end of the loadbreak elbow catalog number. Refer to **Table 13** and **Table 14**.

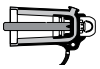
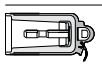
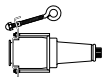
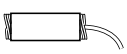
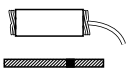
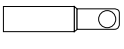
⑤ To order the long version (extended) of the bushing insert, put in an "L" as the seventh character in the part number.

⑥ Specify the number of interfaces by inserting a "2", "3", or "4" directly after the base part number.

⑦ To add a stainless steel bracket, insert a "B" as the last character in the part number, or to add U-straps, insert a "U" as the last character in the part number.

⑧ Fuses sold separately. See **Table 16**. Reference catalog CA132040EN.

Table 8. 200 A loadbreak and deadbreak connectors, continued

	Catalog section	Description	kV class	Base part number	Notes
	CA650085EN	Loadbreak protective cap	25 kV	LPC225	①
	CA650083EN	POSI-BREAK loadbreak protective cap	25 kV	PLPC225	①
	CA650087EN	Loadbreak protective cap	35 kV	LPC235	①
	CA650089EN	Insulated standoff bushing	15 kV	ISB215	②
	CA650004EN	Insulated standoff bushing	25 kV	ISB225	②
	CA650088EN	Insulated standoff bushing	35 kV	ISB235	②
	CA650106EN	CS series cold shrink cable seal kit	15/25/35 kV	CS **CJ1** (see **Table 13**)	
	CA650106EN	SA series cold shrinkable metallic shield adapter kit	15/25/35 kV	SA **CJ2** (see **Table 14**)	
	CA650062EN, CA650098EN, CA650100EN and CA650068EN	Coppertop connector 200 A, 2.88 inches long bi-metal	15/25/35 kV	CC2C **CC1** T (see **Table 12**)	
		200 A loadbreak probe kit	15 kV	PK215	③
			25 kV	PK225 PKPB225 (POSI-BREAK)	③ ③
			35 kV	PK235	③
		Silicone lubricant cooper 117 (for elbows and splices)	15/25/35 kV	2603393A03 (0.175 oz, 5 g packet) 2605670A02M (5.25 oz, 150 g tube)	
	CA650073EN	Installation and torque tool	15/25 kV	LBITOOL	④
	CA650062EN	Cable adapter, 5 kV 0.495–0.585 inches 0.575–0.685 inches	15/25 kV	 CA225A CA225B	 ⑤ ⑤
	CA650102EN, CA650081EN and CA650014EN	U-strap kit with hardware (1 strap) for loadbreak junction	15 kV	2625439A16B	
			25 kV	2625439A17B	
			35 kV	2637570A01B	
		Two-way stainless steel bracket assembly for loadbreak junction	15 kV	2637172B01BS	
			25 kV	2637160B01BS	
			35 kV	2604688B01B	
		Three-way stainless steel bracket assembly for loadbreak junction	15 kV	2637172B02BS	
			25 kV	2637160B02BS	
			35 kV	2604688B02B	
		Four-way stainless steel bracket assembly for loadbreak junction	15 kV	2637172B03BS	
			25 kV	2637160B03BS	
			35 kV	2604688B03B	

① For individually packaged product in a corrugated cardboard box, insert an "X" as the last character in the part number.

② To substitute a stainless steel bracket, insert a "S" as the last character in the part number.

③ Probe kit includes probe, installation tool, silicone lubricant and installation instructions.

④ For 200 A loadbreak inserts only.

⑤ 5 kV cable adapter for use in 15 kV and 25 kV "CC" range elbow only.

Table 9. CR1: Cable diameter (insulation) range

Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
LE215 LEJ215 LE225 LEJ225 PLE225 PLEJ225	0.495–0.585	12.6–14.9	CCA ①
	0.575–0.685	14.6–17.4	CCB ①
	0.610–0.970	15.5–24.6	AB
	0.750–1.080	19.1–27.4	CC
	0.890–1.220	22.6–30.0	DD

① Uses 5 kV cable adapter (for use with "CC" range elbow only).

Table 10. CR2: Cable diameter (insulation) range

Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
LE235	0.825–1.000	21.00–25.40	B
	0.995–1.180	25.20–30.00	D
	1.180–1.340	30.00–34.00	F

Table 11. CR3: Cable diameter (insulation) range for fused loadbreak elbow

Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
LFEP215 LFEP225	0.610–0.820	15.5–20.8	A
	0.740–0.980	18.8–24.9	B
	0.910–1.180	23.10–29.9	C

Table 12. CC1: Conductor size and type

Use for base number	Concentric or compressed		Compact or solid		Conductor code
	AWG	mm²	AWG	mm²	
LE215 LEJ215 LE225 LEJ225 PLE225 PLEJ225 LE235 CC2C	No connector				00
	#6	16	#4	—	01
	#4	—	#3	25	02
	#3	25	#2	35	03
	#2	35	#1	—	04
	#1	—	1/0	50	05
	1/0	50	2/0	70	06
	2/0	50	3/0	—	07
	3/0	—	4/0	95	08
	4/0	95	250	120	09
	250 ①	120	300	—	10

① Compressed stranding only.

Table 13. Cable jacket range (outside diameter) for cold shrink rejacket kit

Use for base number	Cable jacket OD (inches)	Jacket code
CS	0.950–1.940	1
	1.280–2.670	2
	1.600–3.500	3

Table 14. Cable jacket range (outside diameter) for cold shrink shield adapter kit

Use for base number	Cable jacket OD (inches)	Jacket code
SA	0.590–1.050	1
	0.830–1.640	2
	1.270–2.170	3
	1.600–2.600	4

Table 15. CC2: Conductor size and type for fused loadbreak elbow

Use for base number	Class B stranded or compressed		Compact or solid		Conductor code
	AWG	mm²	AWG	mm²	
LFEP215 LFEP225 FECC	No Connector				00
	—	—	#2	35	03
	#2	35	#1	—	04
	#1	—	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	—	—	09
	250 ①	120	—	—	10

① Compressed stranded only.

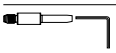
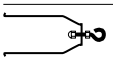
Note: Coppertop compression connector may be used on both aluminum and copper cable conductors.

Table 16. 500-110: Fused loadbreak elbow connector fuse electrical ratings and catalog numbers (see catalog CA650069EN and CA650070EN)

Nominal system voltage class (kV)	Nominal fuse voltage rating (kV)	Nominal fuse current rating (amperes)	Fuse catalog number	Maximum continuous current			Minimum melt I^2t (A^2s)	Maximum total I^2t (A^2s)
				25 °C	40 °C	65 °C		
15.5	8.3	6	**FEF083A006**	8.9	8.5	8.0	710	3,800
		8	**FEF083A008**	12.1	11.7	10.9	1,000	5,425
		10	**FEF083A010**	15.0	14.4	13.5	1,200	5,825
		12	**FEF083A012**	16.6	16.0	15.0	1,200	5,825
		18	**FEF083A018**	21.9	21.1	19.7	1,500	8,000
		20	**FEF083A020**	25.5	24.6	23.0	2,425	12,000
		25	**FEF083A025**	34.5	33.2	31.1	4,500	20,500
		30	**FEF083A030**	40.1	38.7	36.2	6,000	26,200
		40	**FEF083A040**	45.5	43.8	41.0	9,700	39,750
25	15.5	6	**FEF155A006**	8.3	8.5	8.0	710	3,800
		8	**FEF155A008**	11.3	11.7	10.9	1,000	5,435
		10	**FEF155A010**	13.9	14.4	13.5	1,200	5,500
		12	**FEF155A012**	15.5	16.0	15.0	1,200	5,500
		18	**FEF155A018**	20.4	21.1	19.7	1,500	7,800
		20	**FEF155A020**	23.7	24.6	23.0	2,425	12,000

Note: Peak arc voltage levels found during testing were within the values specified for distribution-class current-limiting fuses in ANSI C37.47 Standard—latest edition.

Table 17. 200 A loadbreak and deadbreak connectors

	Catalog section	Description	kV class	Base part number	Notes
	CA650048EN	Deadbreak elbow	15/25 kV	DE225 **CR4 CC3** T (see **Table 18** and **Table 19**)	①
	CA650045EN	Deadbreak straight	15/25 kV	DS225 **CR4 CC3** T (see **Table 18** and **Table 19**)	①
	CA650023EN	Deadbreak junction	15/25 kV	DJ250-T2 (3-way, Type 2)	② ③
			15/25 kV	DJ250-2	② ③
	CA650024EN	Insulated deadend plug	15/25 kV	DPD250	②
	CA650024EN	Insulated standoff bushing	15/25 kV	DPS250	②
	CA650024EN	Grounded standoff bushing	15/25 kV	DPE250	②
	CA650024EN	Deadbreak protective cap	15/25 kV	DRC250	①
	CA650024EN	Coppertop connectors for deadbreak elbows	15/25 kV	CC2C **CC3** T (see **Table 19**)	
	CA650024EN	Crimp connectors for deadbreak straight	15/25 kV	CC2C **CC3** S (see **Table 19**)	
	CA650024EN	Probe and probe wrench for deadbreak elbow	15/25 kV	2638370C01EX (probe) 2639205B01 (probe wrench)	
	CA650048EN	Bail assembly for DE225	15/25 kV	2638409C06B	

① Bail assembly included in kit.

② Bail assembly is ordered separately.

③ See following for appropriate junction strap. For DJ250-2, order quantity 2 of 2639524B01. For DJ250-T2, order quantity 1 of 2638617C01.

Table 18. CR4: Cable diameter (insulation) range

Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
DE225 DS225	0.531–0.685	13.5–17.4	BA
	0.640–0.820	16.3–20.8	DA
	0.770–0.950	19.6–24.1	FA
	0.910–1.130	23.1–28.7	HA
	1.100–1.320	27.9–33.5	JA

Table 19. CC3: Conductor size and type

Use for base number	Concentric or compressed		Compact or solid		Conductor code
	AWG	mm²	AWG	mm²	
DE225 DS225 CC2C	No connector				00
	#6	16	#4	—	01
	#4	—	#3	25	02
	#3	25	#2	35	03
	#2	35	#1	—	04
	#1	—	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 ①	120	300	—	10

① Compressed stranding only.

200 A stacking dimensions

Dimensions in inches (mm).

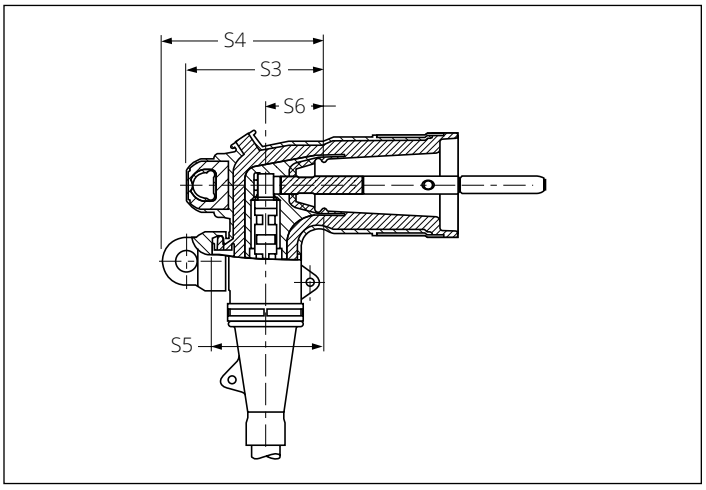


Figure 6. Elbow connector (25 kV POSI-BREAK shown)

Dimension	15 kV	25 kV	35 kV
S3	3.44 (87.0)	3.86 (98.0)	4.13 (105.0)
S4	4.16 (106.0)	4.54 (115.3)	5.01 (127.3)
S5	2.73 (69.0)	3.14 (79.8)	3.58 (91.0)
S6	1.23 (31.0)	1.64 (41.7)	1.77 (45.0)

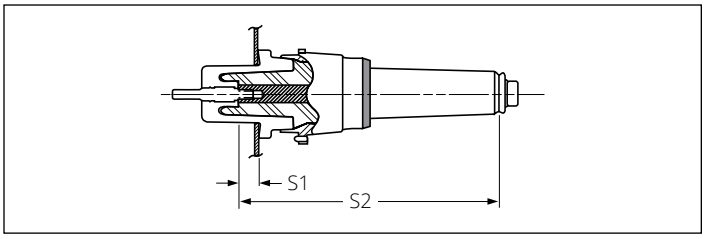


Figure 7. Vented bushing insert with latch ring indicator (25 kV shown)

Dimension	15 kV	25 kV short	25 kV long
S1	0.76 (19.3)	0.76 (19.3)	0.76 (19.3)
S2	6.30 (106.0)	7.14 (181.4)	9.97 (253.2)

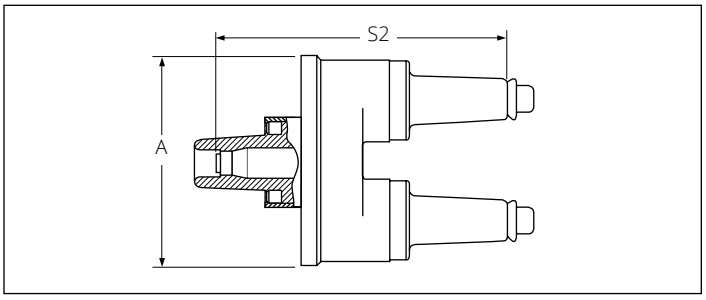


Figure 8. Rotatable feedthru insert (25 kV shown)

Dimension	15 kV	25 kV
A	7.10 (179.0)	7.10 (179.0)
S2	9.50 (241.0)	11.00 (279.0)

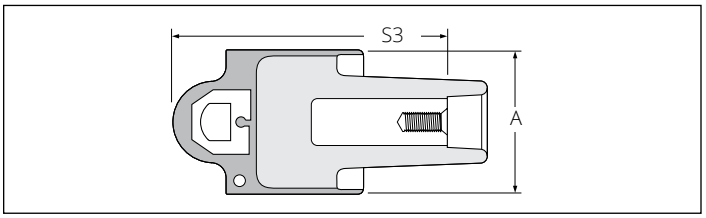


Figure 9. Insulated bushing well plug

Dimension	15 kV/25 kV
S3	5.10 (130.0)
A	2.70 (69.0)

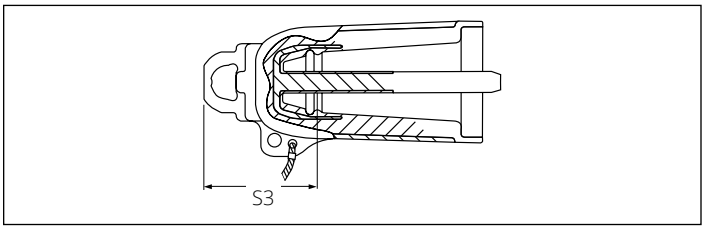


Figure 10. Loadbreak protective cap (25 kV POSI-BREAK shown)

Dimension	15 kV	25 kV	35 kV
S3	2.15 (54.5)	2.61 (66.3)	2.66 (67.5)

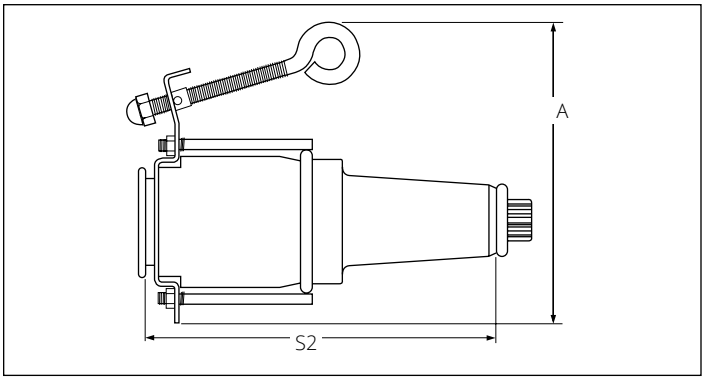


Figure 11. Insulated standoff bushing (25 kV shown)

Dimension	15 kV	25 kV	35 kV
A	6.30 (160.0)	6.30 (160.0)	7.10 (181.0)
S2	5.91 (150.0)	7.34 (186.0)	11.67 (296.4)

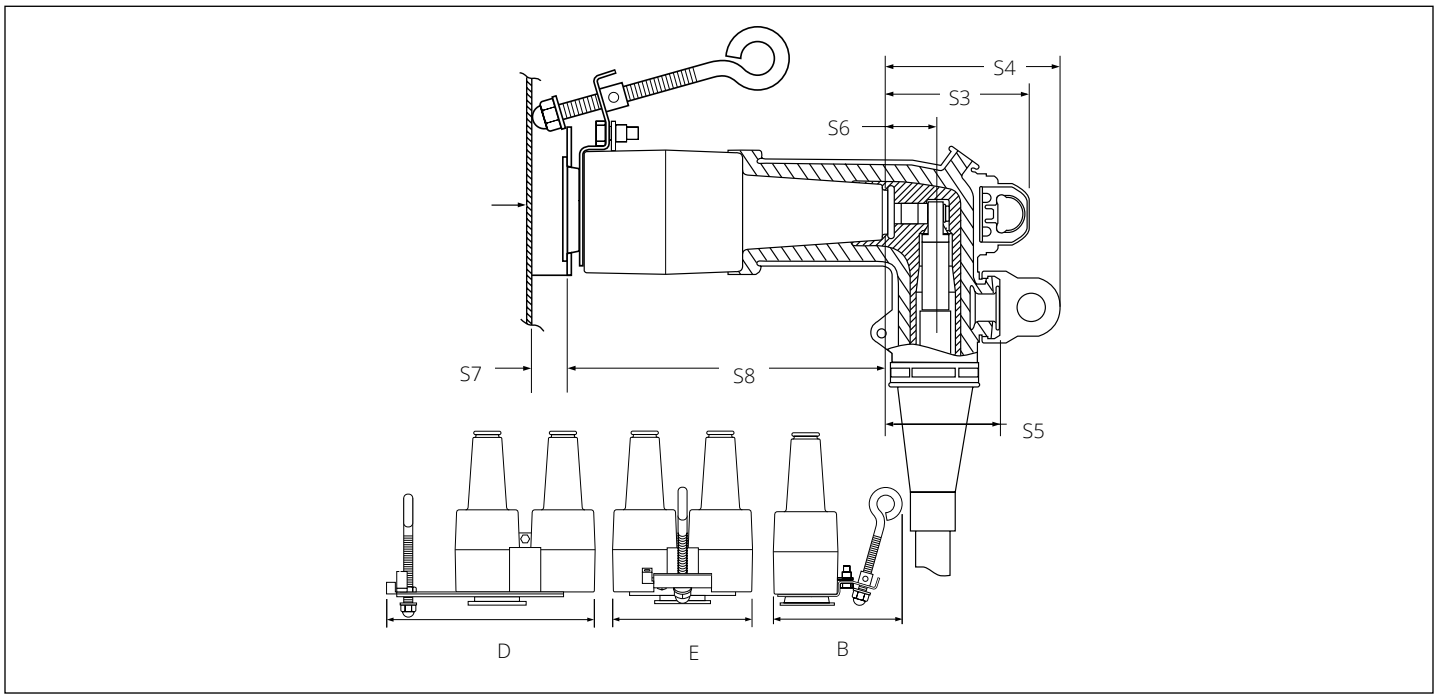


Figure 12. Loadbreak portable feedthru (15 kV shown)

	15 kV		25 kV		35 kV	
Dimension	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
B	5.60 (142.2)	—	5.60 (142.2)	—	7.20 (182.9)	—
D	—	8.90 (226.0)	—	8.90 (226)	—	11.60 (294.0)
E	6.00 (153.0)	—	6.70 (171.0)	—	8.80 (224.0)	—
S3	3.44 (87.0)	3.44 (87.0)	3.86 (98.0)	3.86 (98.0)	4.13 (105.0)	4.13 (105.0)
S4	4.16 (106.0)	4.16 (106.0)	4.54 (115.0)	4.54 (115.0)	5.01 (127.3)	5.01 (127.3)
S5	2.73 (69.0)	2.73 (69.0)	3.14 (80.0)	3.14 (80.0)	3.58 (91.0)	3.58 (91.0)
S6	1.23 (31.0)	1.23 (31.0)	1.64 (42.0)	1.64 (42.0)	1.77 (45.0)	1.77 (45.0)
S7	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)
S8	7.07 (180.0)	7.20 (183.0)	8.63 (219.0)	8.77 (223.0)	11.80 (300.0)	11.8 (300.0)

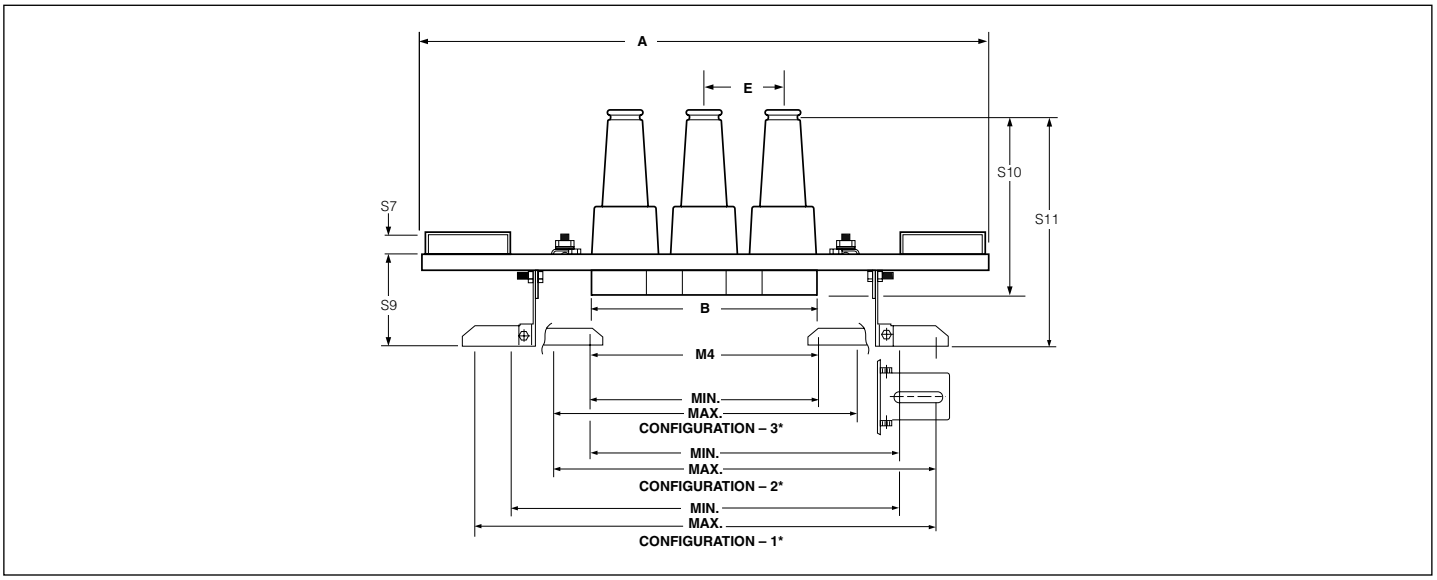


Figure 13. Loadbreak junctions (15 kV shown)

Dimension	15 kV	25 kV	35 kV
E	3.25 (83.0)	4.00 (102.0)	5.00 (127.0)
S7	0.75 (19.0)	0.75 (19.0)	1.02 (26.0)
S9	4.38 (111.0)	4.38 (111.0)	5.46 (139.0)
S10	6.77 (172.0)	8.34 (212.0)	11.80 (299.0)
S11	9.20 (234.0)	10.77 (274.0)	13.90 (163.0)
M4	See **Table 20**	See **Table 20**	See **Table 20**

Table 20. 15 kV, 25 kV and 35 kV loadbreak junctions

Number of interfaces	Physical dimensions (inches/mm)		M4 mounting dimensions (inches/mm)					
			Configuration 1 ①		Configuration 2 ②		Configuration 3 ③	
	A	B	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
15 kV								
2	12.50 (318.0)	6.00 (152.0)	10.80 (275.0)	14.40 (366.0)	7.20 (183.0)	10.80 (275.0)	3.60 (92.0)	7.20 (183.0)
3	19.60 (498.0)	9.20 (230.0)	14.70 (374.0)	18.30 (465.0)	11.10 (282.0)	14.70 (374.0)	7.40 (188.0)	11.10 (282.0)
4	22.90 (582.0)	12.40 (315.0)	17.90 (455.0)	21.50 (547.0)	14.30 (364.0)	17.90 (455.0)	10.70 (272.0)	14.30 (364.0)
25 kV								
2	14.20 (361.0)	6.70 (170.0)	11.90 (302.0)	15.60 (396.0)	8.00 (203.0)	11.70 (297.0)	4.20 (107.0)	7.80 (198.0)
3	23.00 (584.0)	10.70 (272.0)	16.80 (427.0)	20.40 (518.0)	12.90 (328.0)	16.50 (419.0)	9.00 (229.0)	12.60 (320.0)
4	27.00 (686.0)	14.70 (373.0)	20.80 (528.0)	24.40 (620.0)	16.90 (429.0)	20.50 (521.0)	13.00 (330.0)	16.60 (422.0)

Number of interfaces	Mounting dimensions (inches/mm)			
	A	B	C	D
35 kV				
2	23.10 (587.0)	8.80 (223.0)	④	④
3	33.30 (846.0)	13.80 (350.0)	④	④
4	38.50 (978.0)	18.80 (477.0)	④	④

① Configuration 1. Both feet turned out.

② Configuration 2. One foot turned out, one in.

③ Configuration 3. Both feet turned in.

④ Refer to catalog section CA650014EN for detailed drawing of 35 kV junction.

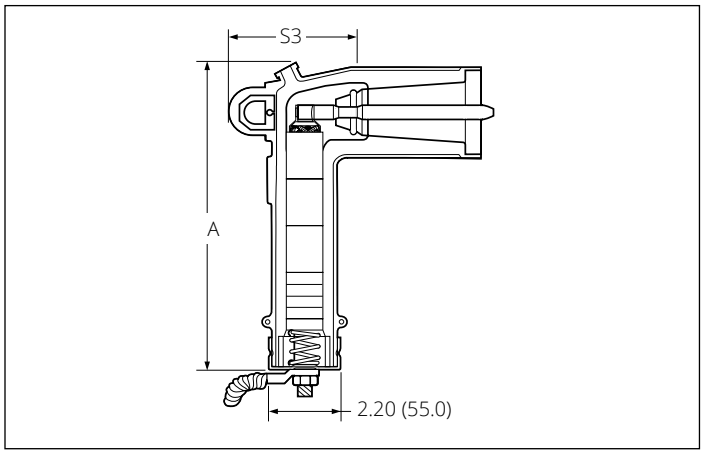


Figure 14. Underground surge arresters

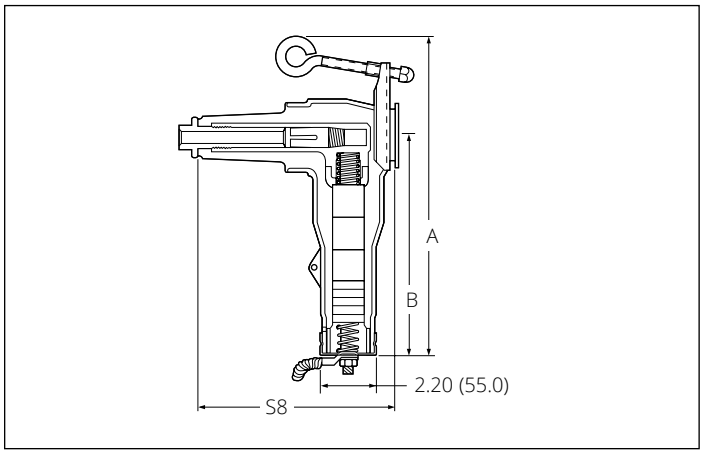


Figure 15. Parking stand arrester

Table 21. M.O.V.E. arrester

Dimension	Duty cycle (kV)	15 kV/25 kV	35 kV
A	3–27	8.50 (216.0)	13.30 (338.0)
	9–15	8.50 (216.0)	—
	18–27	10.90 (276.0)	13.30 (338.0)
S3	3–27	4.20 (107.0)	4.70 (120.0)
	9–27	4.20 (107.0)	4.70 (120.0)

Table 22. MOV parking stand arrester

Dimension	Duty cycle (kV)	15 kV	25 kV
A	3–21	11.90 (302.0)	11.90 (302.0)
	9–15	11.90 (302.0)	11.90 (302.0)
	18–21	14.50 (368.0)	14.50 (368.0)
B	3–21	8.00 (203.0)	8.00 (203.0)
	9–15	8.00 (203.0)	8.00 (203.0)
	18–21	10.60 (269.0)	10.60 (269.0)
S8	3–21	7.40 (188.0)	7.40 (188.0)
	9–21	7.40 (188.0)	7.40 (188.0)

Cleer 600 A loadbreak connectors

Cleer loadbreak connector: 600 A loadbreak technology provides efficient, reliable visible break and visible ground

Cleer loadbreak connector system

Eaton's Cooper Power series Cleer™ loadbreak connector system is a 600 A loadbreak device rated for operation on 15 kV and 25 kV class systems. It is used to provide a visible break and visible ground on 600 A network and distribution systems without having to remove 600 A terminations and move heavy cable. The Cleer loadbreak connector system is fully shielded, submersible and meets the applicable requirements of IEEE Std 386—"Separable Insulated Connector Systems."

Many configurations are possible with this connector system. Under normal operating conditions, the current path is through one of the 600 A loadbreak/deadbreak 2-position junctions, through the 600 A loadbreak "C" connector and through the second 600 A loadbreak/deadbreak junction.

When isolating underground cable, with the system energized or de-energized, with or without rated load current, with the use of a clampstick, the "C" connector can be removed. A 600 A loadbreak protective cap (LPC6_ _) can then be installed on the two exposed loadbreak interfaces. All bushings of the connector system are then insulated and deadfront. If a 600 A termination with a 200 A reducing tap plug is used on the IEEE Std 386 600 A 15/25 kV deadbreak interfaces of the junction, a grounding elbow can be installed, providing a visible ground. It is then safe to perform work on the underground cable.

Once an underground circuit is sectionalized, for maximum safety, a visible break and visible ground must be achieved prior to performing any repair or maintenance. Distribution feeders can easily retrofit the Cleer loadbreak connector system into 600 A applications, allowing operators confidence when working on a piece of underground equipment or cable as they can clearly see the open circuit.

Cleer loadbreak connectors allow the operator to safely pull the loadbreak interface while the system is energized to sectionalize the system into smaller segments to prevent taking longer outages. The Cleer 600 A loadbreak connector makes this easy.

- The C-shaped connector breaks the circuit in two places for twice the contact separation
- The new Cleer loadbreak connector incorporates field-proven POSI-BREAK technology that provides:
  - Increased strike distance, greatly reducing the possibility of partial vacuum flashovers
  - Added dielectric strength along the probes for superior switching performance and reliability
- The remainder of this simple system consists of:
  - Two Eaton Cooper Power series 600 A loadbreak interfaces
  - Two IEEE Std 386 600 A deadbreak interfaces
- A yellow latch indicator is included to assure positive connection
- Fully submersible and meets the applicable requirements of IEEE Std 386 for use in aboveground and underground environments prone to flooding
- When using BT-TAP or T-OP II connectors, a visible ground can be achieved by connecting a grounding elbow directly to a 200 A loadbreak reducing tap plug

Table 23. 15 kV Class 600 A Cleer loadbreak connector system ratings

Description	Rating
600 A loadbreak interface	
Continuous current	600 A rms
Loadbreak switching	Ten make and break operations at 600 A at 14.4 kV phase-phase
	Three make and break operations at 900 A at 14.4 kV phase-phase
Fault closure	16 kA rms symmetrical at 14.4 kV phase-phase after ten 600 A loadbreak switching operations for 0.17 seconds
	16 kA rms symmetrical at 14.4 kV phase-phase after three 900 A loadbreak switching operations for 0.17 seconds
4 Hour overload current	900 A rms
Short time current	16 kA rms symmetrical for 0.17 seconds (limited by fault closure rating) ①
	10 kA rms symmetrical for 3.0 seconds
IEEE Std 386-2016 600 A, 15/25 kV deadbreak interface	
Continuous current	600 A rms
4-hour overload current	900 A rms
Short time current	16 kA rms symmetrical for 0.17 seconds ①
	10 kA rms symmetrical for 3.0 seconds

① 600 A loadbreak connectors are generally capable of short-time current ratings well in excess of those listed (25 kA to 40 kA ratings for 0.17 s are typical). However, ratings are limited by the fault-closure rating. Contact your Eaton representative for maximum short-time current ratings if fault-closure operations are infeasible in your application.

Note: Current ratings and characteristics are in accordance with applicable IEEE Std 386-2016 requirements.

Table 24. 25 kV Class 600 A Cleer loadbreak connector system ratings

Description	Rating
600 A loadbreak interface	
Continuous current	600 A rms
Loadbreak switching	Five make and break operations at 600 A at 26.3 kV phase-phase
	One make and break operation at 900 A at 26.3 kV phase-phase
Fault closure	10 kA rms symmetrical at 26.3 kV phase-phase after five 600 A loadbreak switching operations for 0.17 seconds
	10 kA rms symmetrical at 26.3 kV phase-phase after one 900 A loadbreak switching operations for 0.17 seconds
4-hour overload current	900 A rms
Short time current	10 kA rms symmetrical for 0.17 seconds (limited by fault closure rating) ①
	10 kA rms symmetrical for 3.0 seconds
IEEE Std 386 -2016 600 A, 15/25 kV deadbreak interface	
Continuous current	600 A rms
4-hour overload current	900 A rms
Short time current	10 kA rms symmetrical for 0.17 seconds ①
	10 kA rms symmetrical for 3.0 seconds

① 600 A loadbreak connectors are generally capable of short-time current ratings well in excess of those listed (25 kA to 40 kA ratings for 0.17 s are typical). However, ratings are limited by the fault-closure rating. Contact your Eaton representative for maximum short-time current ratings if fault-closure operations are infeasible in your application.

Note: Current ratings and characteristics are in accordance with applicable IEEE Std 386-2016 requirements.

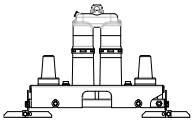
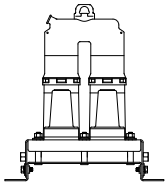
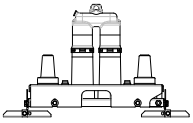
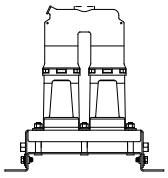
Table 25. 28 kV Class 600 A Cleer loadbreak connector system ratings

Description	Rating
600 A loadbreak interface	
Continuous current	600 A rms
Loadbreak switching	Five make and break operations at 600 A at 28.0 kV phase-phase
	One make and break operation at 900 A at 28.0 kV phase-phase
Fault closure	10 kA rms symmetrical at 28.0 kV phase-phase after five 600 A loadbreak switching operations for 0.17 seconds
	10 kA rms symmetrical at 28.0 kV phase-phase after one 900 A loadbreak switching operation for 0.17 seconds
4-hour overload current	900 A rms
Short time current (see important below)	25 kA rms symmetrical for 0.17 seconds (limited by fault closure rating) ①
	10 kA rms symmetrical for 3.0 seconds
IEEE Std 386-2016 600 A, 15/25 kV deadbreak interface	
Continuous current	600 A rms
4-hour overload current	900 A rms
Short time current (see important below)	25 kA rms symmetrical for 0.17 seconds ①
	10 kA rms symmetrical for 3.0 seconds

① 600 A loadbreak connectors are generally capable of short-time current ratings well in excess of those listed (25 kA to 40 kA ratings for 0.17 s are typical). However, ratings are limited by the fault-closure rating. Contact your Eaton representative for maximum short-time current ratings if fault-closure operations are infeasible in your application.

Note: Current ratings and characteristics are in accordance with applicable IEEE Std 386-2016 requirements.

Table 26. 600 A loadbreak connectors

	Catalog section	Description	kV class	Base part number	Notes
	CA650010EN	Loadbreak connector assembly includes: two loadbreak/deadbreak junctions with loadbreak "C" connector assembled in an In-Line SS bracket	15 kV	LCN2DLJ615A2ILB	
		Loadbreak connector assembly includes: two loadbreak/deadbreak junctions with loadbreak "C" connector assembled in a Square SS bracket	15 kV	LCN2DLJ615A2SQB	
		Loadbreak "C" connector	15 kV	LCN615	
		Loadbreak protective cap	15 kV	LPC615	
	CA650011EN	Loadbreak connector assembly includes: two loadbreak/deadbreak junctions with loadbreak "C" connector assembled in an In-Line SS bracket	25 kV	LCN2DLJ625A2ILB	
		Loadbreak connector assembly includes: two loadbreak/deadbreak junctions with loadbreak "C" connector assembled in a Square SS bracket	25 kV	LCN2DLJ625A2SQB	
		Loadbreak "C" connector	25 kV	LCN625	
		Loadbreak protective cap	25 kV	LPC625	
Accessories					
	CA650010EN CA650011EN	Cleer loadbreak standoff bushing, parking stand mount	15/25 kV	PS600CLEER	
		Cleer loadbreak standoff bushing, direct wall mount	15/25 kV	PS600CLEERDM	
		600 A insulated loadbreak protective cap	15/25 kV	LPC6 **U**	
		600 A loadbreak "C" connector	15/25 kV	LCN6 **U**	
		600 A loadbreak bushing insert with copper stud	15/25 kV	LBI6 **U** CSPX	
		Cleer bail system	15/25 kV	CLEERBAIL	①
		Cleer chain system	15/25 kV	CLEERCHAIN	②

① The Cleer bail increases through fault ratings to 40 kA when used on a Cleer C connector and 25 kA when used on a Cleer grounding elbow on a Cleer bracketed system.

② CLEERBAIL and CLEERCHAIN can be used together to increase through fault ratings from 16 kA to 25 kA on a 35 kV 600 A T-body assembly with Cleer bushing insert and grounding elbow.

Note: Cleer SecTER sectionalizing cabinet information can be found on **page 70**.

U = Voltage class

Code	Description
15	15 kV
25	25 kV

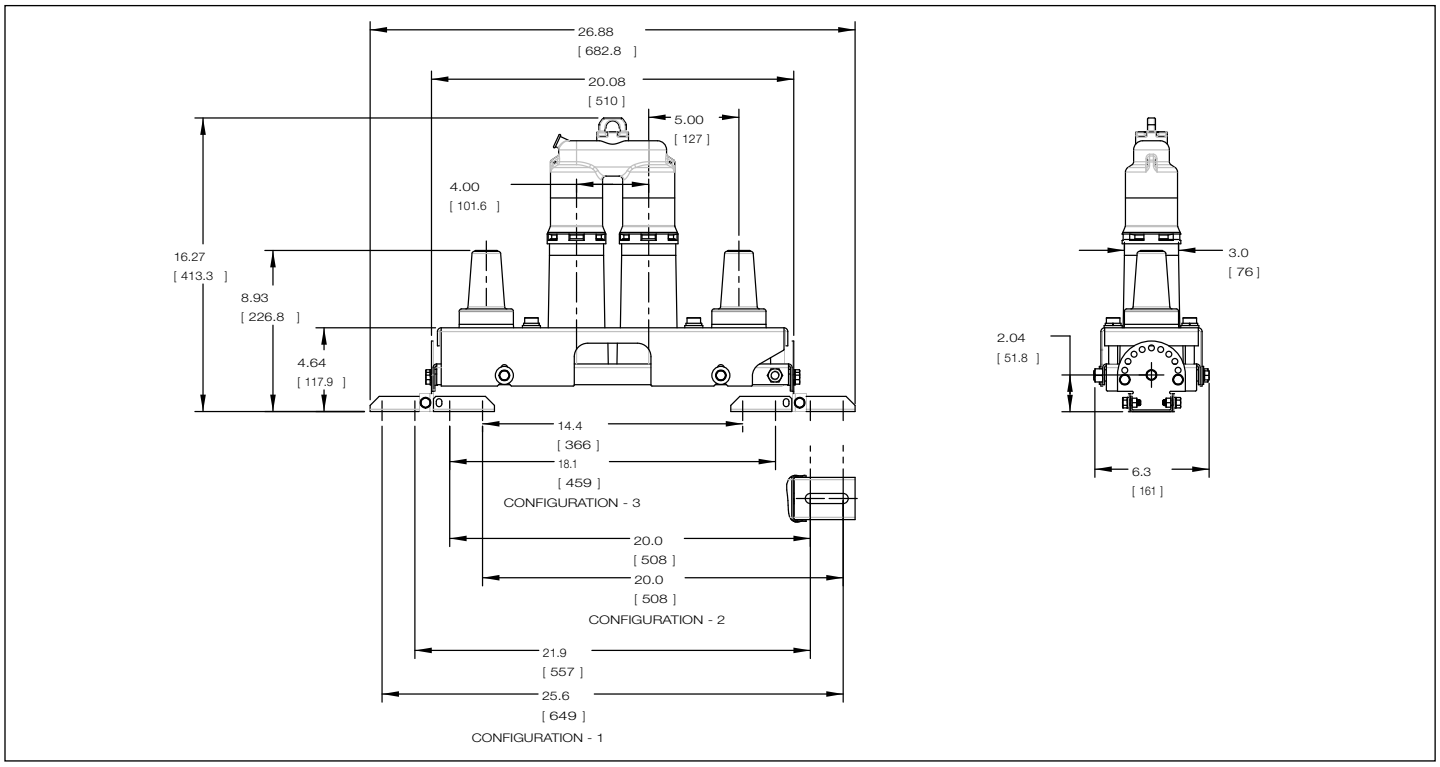


Figure 16. Cleer loadbreak connector assembly (in-line stainless steel bracket)

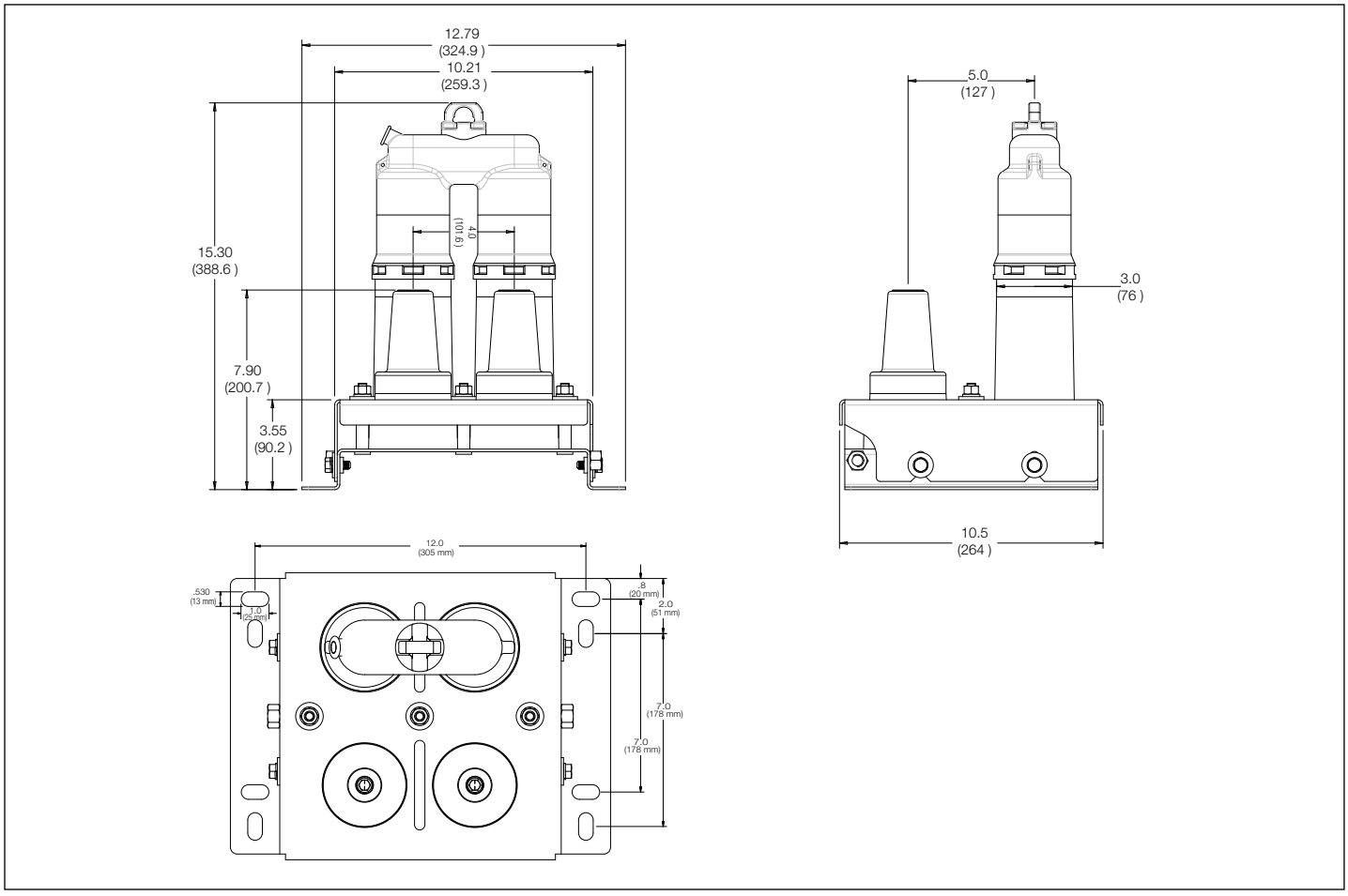


Figure 17. Cleer loadbreak connector assembly (square stainless steel bracket)

Multi-point variable junctions including Cleer

Eaton designs Cooper Power series junction bars for vault or apparatus applications and can be used for looping, tapping and sectionalizing. They are fully shielded, submersible, and are designed and manufactured in accordance with IEEE Std 386-2016 "Separable Insulated Connector Systems."

These junctions provide two to six, 15 kV or 25 kV mixed inline 200 A loadbreak, 600 A deadbreak or 600 A loadbreak Cleer™ interfaces bussed together and encapsulated in a precision-molded, peroxide-cured EPDM insulated rubber body.

Eaton Cooper Power series variable junctions provide endless opportunities to establish loops, taps, and splices, and facilitate apparatus changeouts. Additionally, Eaton offers the only 600 A loadbreak interface in the industry, Cleer, bringing all of the advantages of 200 A junction bars into the 600 A world.

Brackets

Junction bars come standard with a stainless steel mounting bracket. Additional standoff and tilt accessories can be ordered to adjust the standard bracket position. See CA650104EN for more details.

Dimensional information

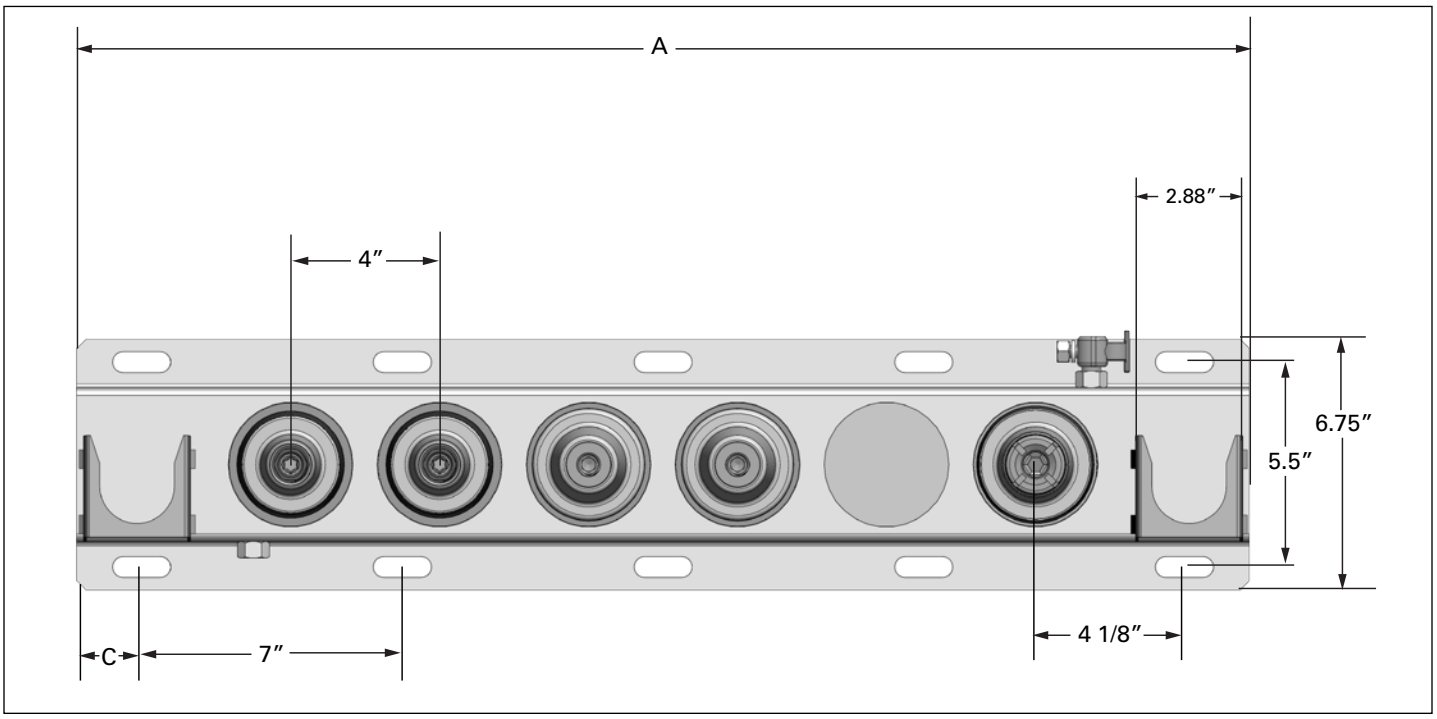


Figure 18. Variable junction standard bracket with parking stands—top view

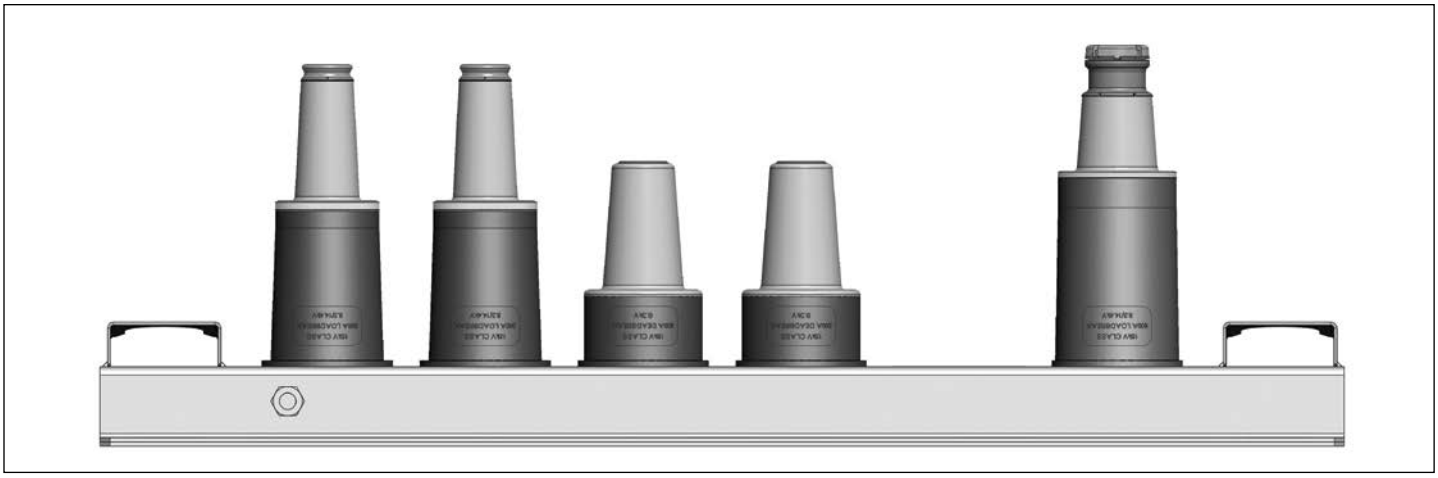


Figure 19. Variable junction standard bracket with parking stands—front view

Table 27. Length and width dimensions (dependent on interface count)

Note: All dimensions are in inches.

Interfaces	Number of mounting holes per side	A (Overall junction length with parking stands)	A (Overall junction length without parking stands)	C Mounting hole offset, no parking stands (bracket start to slot center)	C Mounting hole offset, 2 parking stands (bracket start to slot center)
2	2	15-1/2	9	1	4-1/4
3	3	19-1/2	13	3	2-3/4
4	4	23-1/2	17	1-1/2	1-1/4
5	4	27-1/2	21	3-1/2	3-1/4
6	5	31-1/2	25	2	1-3/4

Table 28. Height dimensions (dependent on interface type)

kV	Interface	D (Height—bottom of bracket to top of interface)	E (Height—bottom of junction to top of interface)
15	200 A	9-3/4	9-5/8
25	200 A	10-1/4	10-1/8
15/25	600 A	7-1/4	7-1/8

- All interfaces are 4.0 inches center to center
- Parking stand center to interface center is 4.125 inches
- All mounting slots are 0.563 x 1.563 inches

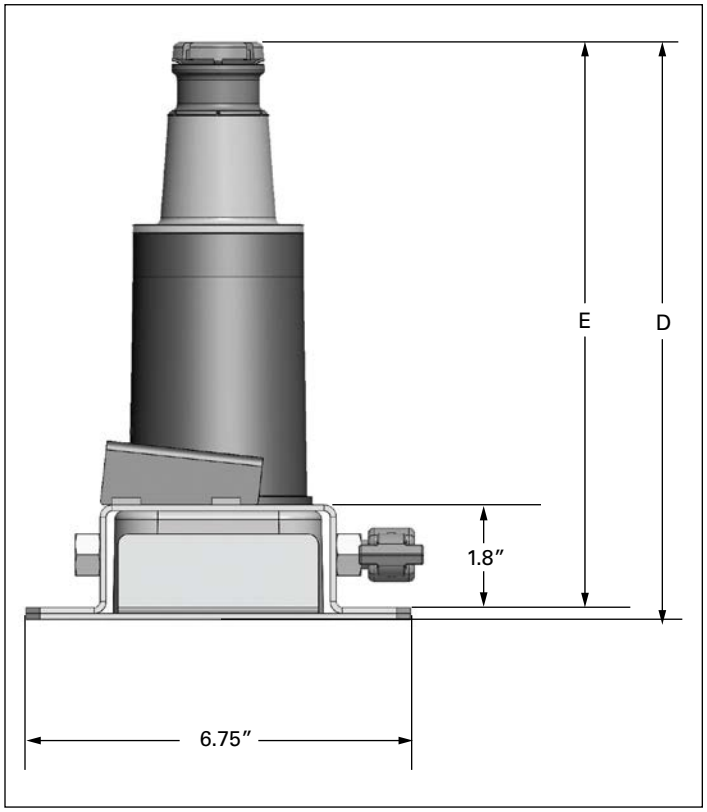


Figure 20. Variable junction standard bracket with parking stands—side view

Ordering information

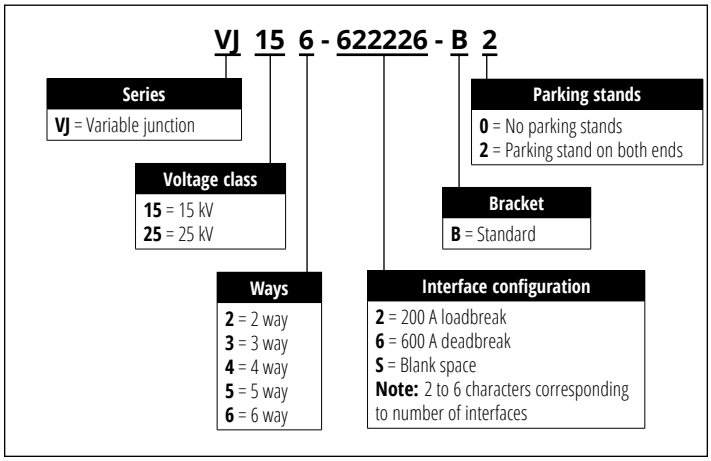
To order a variable junction, reference **Table 29** for catalog number configuration.

Each kit contains:

- Molded rubber variable junction
- Bracket (stainless steel bracket with ground nut)
- Shipping caps
- Installation instruction sheet

The number of interfaces in character 5 will specify the number of digits in the interface configuration field. The interface configuration field will read left to right across the junction.

Table 29. Catalog numbering system



Additional parts

Standoff bracket: VJSTDOFF-BRKT

Tilt bracket: VJTILT-BRKT

Note: See **page 27** for additional information regarding bracket accessories.

Example:

25 kV, 4 positions with 600 A in position 1, 200 A interface in positions 2, 3 and 4, catalog number would be VJ254-6222-B0.

For further installation information, reference "MN650065EN—200 A and 600 A variable junction 15 kV and 25 kV class installation and operation instructions."

Cleer multi-point junction assemblies

Eaton's Cleer multi-point junctions provide assemblies of multiple 2 to 6 mixed interface, 15 kV or 25 kV junctions linked by the Cleer C-connector to create unique opportunities to establish 600 A loadbreak switching capabilities in underground circuits.

Each individual junction in the assembly is bussed together and encapsulated in a precision-molded, peroxide-cured EPDM insulated rubber body. The Cleer C-connector is used to jumper junction-to-junction, and create a 600 A Loadbreak-rated current path.

With the incorporation of Cleer interfaces and C-connectors to the multi-point junction portfolio, Eaton provides simple, compact and retrofittable solutions for 600 A loadbreak sectionalizing points, 200 A and 600 A bypass switches and the ability to mimic some common switchgear lineups with the aid of fused elbows or other external fusing.

Note: Cleer VJ system ratings are not equivalent to legacy Cleer system ratings.

Brackets

Each assembly is provided pre-installed in a stainless-steel bracket which guarantees a solid foundation for operations of the C-connector.

Dimensional information

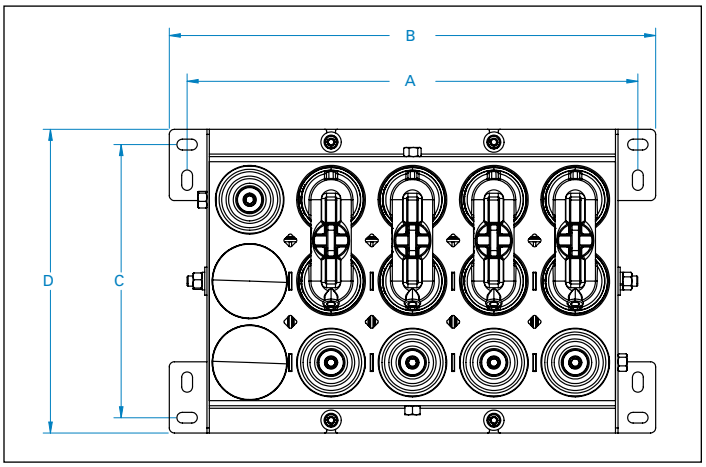


Figure 21. Cleer multi-point junction assembly—top view

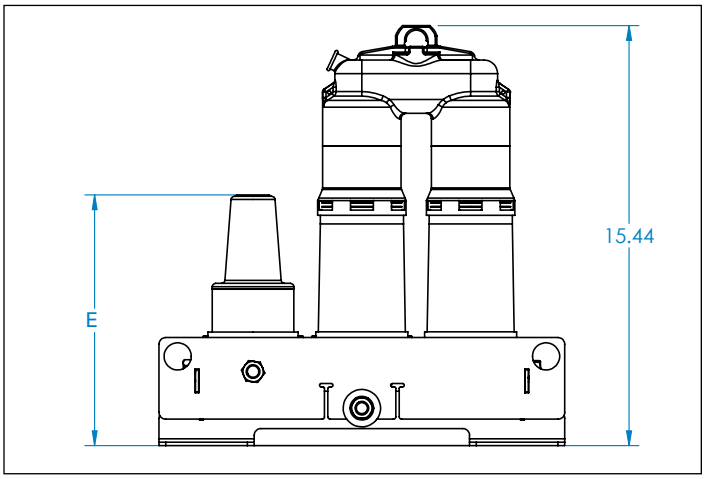


Figure 22. Cleer multi-point variable junction assembly—side view

Note: All dimensions are in inches.

Table 30. Interface across

	2	3	4	5	6
A	10.15	14.15	18.15	22.15	26.15
B	11.90	15.90	19.90	23.90	27.90

Table 31. Interface tall

	1	2	3	4
C	5.42	9.42	13.42	17.42
D	6.92	10.92	14.92	18.92

Table 32. Interface height

	E
200 A 15 kV loadbreak	11.67
200 A 25 kV loadbreak	11.68
600 A 15/25 kV deadbreak	9.21
600 A 15 kV loadbreak, Cleer	15.44
600 A 25 kV loadbreak, Cleer	15.44

Table 33. Components/part numbers

Catalog section	Description	kV class	Base part number	Notes
CA650104EN	15 kV in-line variable junction	15	VJ15 **X** - **Y**-B **Z**	Table X , Table Y, Table Z
	25 kV in-line variable junction	25	VJ25 **X** - **Y** -B **Z**	Table X , Table Y, Table Z
	15 kV multi-point Cleer variable junction	15	CVJ15 - **W**	Table W ①
	25 kV multi-point Cleer variable junction	25	CVJ25 - **W**	Table W ①

X = Number of interfaces ②

Code	Description
2	2-way junction
3	3-way junction
4	4-way junction
5	5-way junction
6	6-way junction

Y = Junction interfaces ③

Note: Any combination of 2–6 interfaces may be placed here. The number of interfaces listed must match "X" value chosen above.

Code	Description
2	200 A loadbreak
6	600 A deadbreak
S	Blank space

Z = Parking stands

Code	Description
0	No parking stands
2	Parking stands on both ends of bracket

U = Voltage class

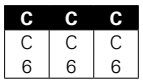
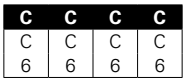
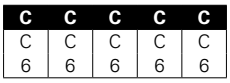
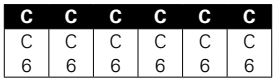
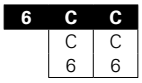
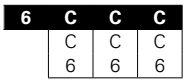
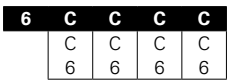
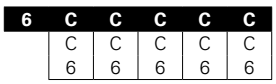
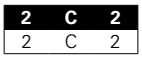
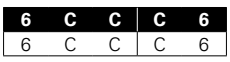
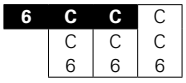
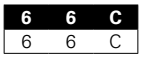
Code	Description
15	15 kV
25	25 kV

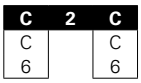
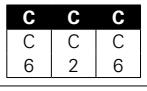
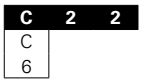
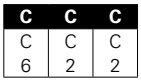
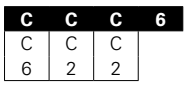
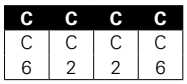
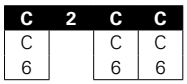
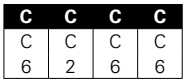
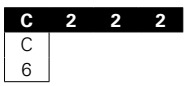
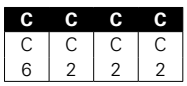
① Table W contains a list of common configurations. Custom configurations can be made. Refer to catalog section or your Eaton representative for more information.

② Choose the number of interfaces required in junction bar.

③ Choose the specific interfaces in corresponding order. Number of interfaces chosen as Y must equal option chosen for X.

W = Cleer variable junction configuration models

Configuration	Description	Model
	3-way 600 A loadbreak junction	3WLB
	4-way 600 A loadbreak junction	4WLB
	5-way 600 A loadbreak junction	5WLB
	6-way 600 A loadbreak junction	6WLB
	2-way 600 A loadbreak switch	2WSW
	3-way 600 A loadbreak switch	3WSW
	4-way 600 A loadbreak switch	4WSW
	5-way 600 A loadbreak switch	5WSW
	200 A bypass switch	200BP
	600 A bypass switch inline configuration	600BPIL
	600 A bypass switch - stacked configuration	600BPST
	Parallel cable sectionalizing point—stacked	PCSPST
	Parallel cable sectionalizing point—inline	PCSPIL
	200 A switch	200SW
	Dual source	DS

Configuration	Description	Model
	Model 6	M6
	Model 6B	M6B
	Model 7	M7
	Model 7B	M7B
	Model B	MB
	Model 8B	M8B
	Model 9	M9
	Model 9B	M9B
	Model 10T	M10T
	Model 11	M11
	Model 11B	M11B
	Model 12	M12
	Model 12B	M12B

600/900 A deadbreak connectors

Eaton designs its Cooper Power series 600/900 A deadbreak connector systems to fill the demand for a deadfront underground installation in 600/900 A main and lateral feeders. They provide a completely shielded, deadfront, fully submersible cable connection for medium- and high-voltage apparatus—such as transformers, switchgear, large motors, etc., and can also be used to make splices, junctions, taps and deadends for main underground, distribution feeders. They provide the same high degree of operating flexibility and reliability as our 200 A products. All components fit together easily and assembly variations are available.

These connector systems are designed for installation on various types of cables. The entire system can be applied to concentric neutral cable, and to almost any other type of medium-voltage cable when used with our CS or SA Series Cold Shrink shield adapter kits.

All of our deadbreak connectors meet the electrical, mechanical and dimensional requirements of IEEE Std 386 and are designed to be fully interchangeable with those currently available from other major manufacturers.

900 A rating

Eaton achieves a 900 A continuous rating with its Cooper Power series BOL-T™, BT-TAP™ and T-OP™ II systems when used with a coppertop compression connector or shear bolt and all copper mating components including apparatus bushing or junction (see note 1 on **page 33** for details when selecting a system).

BOL-T connector system

Eaton designs its Cooper Power series BOL-T deadbreak connector system for use on applications where the terminations would not be operated after installation, would not need a 200 A interface for grounding or arrester provisions, and would not require direct conductor testing or the use of a hotstick. It is a bolted design that is interchangeable with other manufacturers' bolted 600/900 A systems and requires no special tools for installation.

BT-TAP connector system

Eaton's Cooper Power series BT-TAP deadbreak connector system includes a 200 A loadbreak tap instead of the standard insulated plug. The other components of BT-TAP are the same as BOL-T, making it an ideal option to retrofit existing BOL-T (or other bolted systems that use unthreaded compression connectors) systems with a 200 A loadbreak tap for testing, grounding, or overvoltage protection.

T-OP II connector system

Eaton's Cooper Power series T-OP II deadbreak connector system also has a 200 A loadbreak tap and has all the advantages of the BT-TAP system. In addition, the T-OP II connector is single-person hotstick operable, making it ideal for terminations that may require moving or sectionalizing to achieve a visible open or visible ground. The T-OP II connector design offers added reliability (900 A rated all copper alloy current path and copper top connector) and has several assembly/operating advantages.

PUSH-OP connector system

Eaton's Cooper Power series PUSH-OP™ deadbreak connector system is essentially a T-OP II termination with a non-bolted design for use on any deadfront apparatus where the terminations may be operated frequently. The PUSH-OP connector's 600 A deadbreak probe and finger contact design eliminates cross-threading and normal thread wear during repeated sectionalizing operations. It is the only available system that allows operators to move the terminator while it is fully grounded. The PUSH-OP system provides stainless steel bracketry and a mechanical lever for the fastest and easiest one-person hotstick operation possible. The PUSH-OP system requires special apparatus bushings, which makes it suitable for new installations only.

Note: 600 A separable splice kits can be found in the splice section starting on **page 45**.

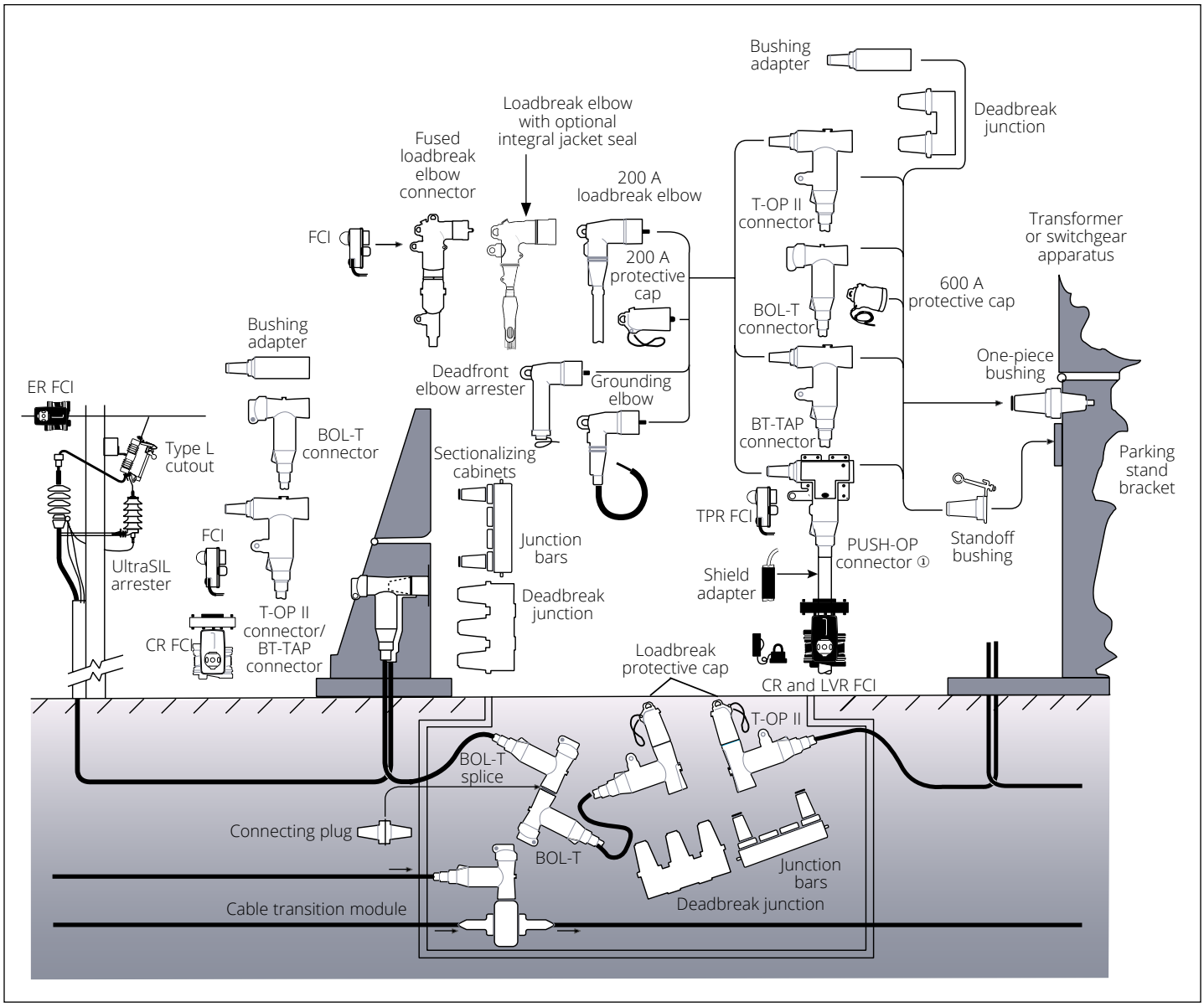
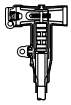
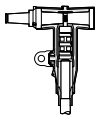
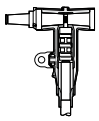
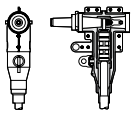
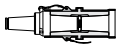
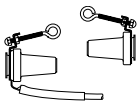


Figure 23. Connector system features

① PUSH-OP requires modified bushing and tank hardware.

Table 34. 600/900 A deadbreak connectors

	Catalog section	Description	kV class	Base part number	Notes
	CA650003EN CA650008EN	BOL-T connector kit	15/25 kV	BT625 **CR5 CC4** (see **Table 35** and **Table 36**)	① ② ⑤ ⑭
			35 kV	BT635 **CR6 CC4** (see **Table 39** and **Table 36**)	① ② ⑤ ⑭
	CA650002EN CA650001EN CA650009EN	BT-TAP connector kit	15 kV	BTP615 **CR5 CC4** (see **Table 35** and **Table 36**)	① ③ ⑤ ⑦ ⑭
			25 kV	BTP625 **CR5 CC4** (see **Table 35** and **Table 36**)	① ③ ⑤ ⑦ ⑭
			35 kV	BTP635 **CR6 CC4** (see **Table 39** and **Table 36**)	① ③ ⑤ ⑦ ⑭
	CA650017EN CA650059EN CA650055EN	T-OP II connector kit	15 kV	TP615 **CR5 CC4** (see **Table 35** and **Table 36**)	④ ⑥ ⑦ ⑭
			25 kV	TP625 **CR5 CC4** (see **Table 35** and **Table 36**)	④ ⑥ ⑦ ⑭
			35 kV	TP635 **CR6 CC4** (see **Table 39** and **Table 36**)	④ ⑥ ⑦ ⑭
	CA650016EN CA650019EN CA650018EN CA650052EN	Push-OP connector kit	15 kV	POP615 **CR5 CC4** (see **Table 35** and **Table 36**)	⑥ ⑦ ⑭
			25 kV	POP625 **CR5 CC4** (see **Table 35** and **Table 36**)	⑥ ⑦ ⑭
			35 kV	POP635 **CR6 CC4** (see **Table 39** and **Table 36**)	⑥ ⑦ ⑭
	CA650041EN CA650042EN CA650054EN	Bushing adapter with LRTP (STUD-T included)	15 kV	DBA615	
			25 kV	DBA625	
			35 kV	DBA635	
	CA650019EN CA650103EN CA650056EN	Push-OP bushing adapter	15 kV	PDBA615	⑦
			25 kV	PDBA625	⑦
			35 kV	PDBA635	⑦
	CA650066EN CA650057EN	Standoff bushings	15/25 kV	ISB625A (aluminum) ISB625C (copper)	⑧ ⑨
			35 kV	ISB635A (aluminum) ISB635C (copper)	⑧
	CA650043EN CA650064EN CA650049EN	Push-OP standoff bushings	15/25 kV	PISB625 PISB625HP (with hitch pin)	⑨
			35 kV	PISB635 PISB635HP (with hitch pin)	

① Determine whether the kit needs to carry a **600 A or 900 A rating**. If 600 A, insert **"A"** in digit **10** for 15/25 kV BOL-T, digit **9** for 35 kV BOL-T, digit **11** for 15 kV or 25 kV BT-Tap, or digit **10** for 35 kV BT-Tap. Insert **"C"** in the same place for a 900 A rated kit. 900 A rated kits will be provided with copper insulating plugs, studs, and coppertop compression connectors or shear bolts.

② To include a **stud in a BOL-T kit**, insert **"1"** in digit **11** for 15/25 kV or digit **10** for 35 kV. Insert **"2"** in the same place to exclude the stud from the kit.

③ Standard or extended length studs are available for BT-Tap kits. If a standard-length stud is desired, insert **"S"** in digit **12** for 15 kV and 25 kV, insert **"L"** for extended length. 35 kV BT-Taps are provided standard with an extended length stud.

④ T-OP II kits are provided standard with an extended length naval brass stud.

⑤ To specify a **test point** on the T-body, insert a **"T"** in digit **12** for 15/25 kV BOL-T, digit **11** for 35 kV BOL-T, digit **13** for 15 kV and 25 kV BT-Tap, or digit **11** for 35 kV BT-Tap.

⑥ For T-OP II and PUSH-OP kits only, specify a T-body with **test point** by adding a **"T"** after the conductor code.

⑦ To specify a BOL-T, BT-TAP, T-OP II, or PUSH-OP kit with a **loadbreak protective cap**, insert a **"C"** after the test point/non-test point option. 25 kV kits include a POSI-BREAK protective cap. To specify a loadbreak protective cap for bushing adapters, insert a **"C"** as the last character of the part number.

⑧ To specify stud in kit, add **"SA"** for aluminum stud (only available with aluminum interface); add **"SC"** for copper stud, or add **"ST"** for T-OP II stud.

⑨ To specify a grounded standoff bushing, **replace the "I" with a "G"** as the first character in the part number. Grounded standoff bushings are only available in aluminum.

⑩ For individually packaged product in a corrugated cardboard box, insert an **"X"** as the last character in the part number.

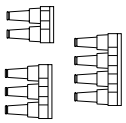
⑪ It is required to specify the number of interfaces by inserting a **"2", "3", or "4"** directly after the base part number.

⑫ To add a stainless steel bracket, insert a **"B"**; or to add U-straps, insert a **"U"** as the last character in the part number.

⑬ For use with tape shield, drain wire, linear corrugated, and UniShield® cable.

⑭ To add a CS series **sealing kit** or a SA series **adapter kit** to the 600 A connector kit, add a **"SA_"** or **"CS_"** at the end of the catalog number. Refer to **Table 37** or **Table 38**.

Table 34. 600/900 A deadbreak connectors, continued

	Catalog section	Description	kV class	Base part number	Notes
	CA650060EN CA650058EN	Standard protective cap (with permanent stud)	15/25 kV	DPC625	⑩
			35 kV	DPC635	⑩
	CA650060EN CA650058EN	Protective cap for T-OP II and Push-Op	15/25 kV	DPC625UT	⑩
			35 kV	DPC635UT	⑩
	CA650096EN CA650053EN	Deadbreak junctions	15/25 kV	DJ625A_ (Aluminum) DJ625C_ (Copper)	⑪⑫
			35 kV	DJ635A_ (Aluminum) DJ635C_ (Copper)	⑪⑫
	CA650106EN	CS Series cold shrinkable metallic cable seal kit	15/25/35 kV	CS **CJ4** (See **Table 37**)	⑬
	CA650106EN	SA Series cold shrinkable metallic shield adapter kit	15/25/35 kV	SA **CJ3** (See **Table 38**)	⑬⑭

① Determine whether the kit needs to carry a **600 A or 900 A rating**. If 600 A, insert **"A"** in digit **10** for 15/25 kV BOL-T, digit **9** for 35 kV BOL-T, digit **11** for 15 kV or 25 kV BT-Tap, or digit **10** for 35 kV BT-Tap. Insert **"C"** in the same place for a 900 A rated kit. 900 A rated kits will be provided with copper insulating plugs, studs, and coppertop compression connectors or shear bolts.

② To include a **stud in a BOL-T kit**, insert **"1"** in digit **11** for 15/25 kV or digit **10** for 35 kV. Insert **"2"** in the same place to exclude the stud from the kit.

③ Standard or extended length studs are available for BT-Tap kits. If a standard-length stud is desired, insert **"S"** in digit **12** for 15 kV and 25 kV, insert **"L"** for extended length. 35 kV BT-Taps are provided standard with an extended length stud.

④ T-OP II kits are provided standard with an extended length naval brass stud.

⑤ To specify a **test point** on the T-body, insert a **"T"** in digit **12** for 15/25 kV BOL-T, digit **11** for 35 kV BOL-T, digit **13** for 15 kV and 25 kV BT-Tap, or digit **11** for 35 kV BT-Tap.

⑥ For T-OP II and PUSH-OP kits only, specify a T-body with **test point** by adding a **"T"** after the conductor code.

⑦ To specify a BT-TAP or T-OP II kit with a **loadbreak protective cap**, insert a **"C"** after the test point/ non-test point option. 25 kV kits include a POSI-BREAK protective cap if a cap is specified.

⑧ To specify stud in kit, add **"SA"** for aluminum stud (only available with aluminum interface); add **"SC"** for copper stud, or add **"ST"** for T-OP II stud.

⑨ To specify a grounded standoff bushing, **replace the "I" with a "G"** as the first character in the part number. Grounded standoff bushings are only available in aluminum.

⑩ For individually packaged product in a corrugated cardboard box, insert an **"X"** as the last character in the part number.

⑪ It is required to specify the number of interfaces by inserting a **"2", "3", or "4"** directly after the base part number.

⑫ To add a stainless steel bracket, insert a **"B"**; or to add U-straps, insert a **"U"** as the last character in the part number.

⑬ To add a CS series **sealing kit** or a SA series **adapter kit** to the 600 A connector kit, add a **"SA_"** or **"CS_"** at the end of the catalog number. Refer to **Table 37** or **Table 38**.

⑭ For use with tape shield, drain wire, linear corrugated, and UniShield cable.

600/900 A components and replacement parts

Table 35. CR5: Cable diameter (insulation) range

Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
BT625 BTP615 BTP625 TP615 TP625 POP615 POP625 CA625	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
	1.500–1.850	38.1–47.0	HH
	1.700–1.970	43.2–50.0	JJ

Table 36. CC4: Conductor size and type

Use for base number	Concentric or compressed		Compact or solid		Conductor code
	AWG or kcmil	mm²	AWG or kcmil	mm²	
BT625 BT635 BTP615 BTP625 BTP635 TP615 TP625 TP635 POP615 POP625 POP635 CC6A_U CC6C_T CC6C_U CDT_____	No connector				00
	#2	35	1	—	11
	#1	—	1/0	50	12
	1/0	50	2/0	70	13
	2/0	70	3/0	—	14
	3/0	—	4/0	95	15
	4/0	95	250	120	16
	250	120	300	—	17
	300	—	350	—	18
	350	—	400	185	19
	400	185	450	—	20
	450	—	500 ①	240	21
	500	240	600	300	22
	600	300	700	—	23
	650 ②	—	750 ③	—	24
	750 ④	—	900	—	25
	900	—	1000	500	26
	1000	500	—	—	27
	1250	630	—	—	28

① Also accepts 550 kcmil compact conductor.

② Also accepts 700 kcmil compressed conductor.

③ Also accepts 800 kcmil compact conductor.

④ Also accepts 700 kcmil concentric conductor.

Table 37. CJ3: Cable jacket range (outside diameter) for cold shrink rejacket kit

Use for base number	Cable jacket OD (inches)	Jacket code
CS	0.950–1.940	1
	1.280–2.670	2
	1.600–3.500	3

Table 38. CJ4: Cable jacket range (outside diameter) for cold shrink shield adapter kit

Use for base number	Cable Jacket OD (inches)	Jacket code
SA	0.590–1.050	1
	0.830–1.640	2
	1.270–2.170	3
	1.600–2.600	4

Table 39. CR6: Cable diameter (insulation) range

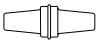
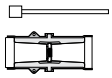
Use for base number	Cable diameter range		Cable range code
	Inches	Millimeters	
BT635 BTP635 TP635 POP635 CA635	0.875–0.985	22.2–25.0	D
	0.930–1.040	23.6–26.4	E
	0.980–1.115	24.9–28.3	F
	1.040–1.175	26.4–29.8	G
	1.095–1.240	27.8–31.5	H
	1.160–1.305	29.5–33.1	J
	1.220–1.375	31.0–34.9	K
	1.285–1.395	32.5–35.4	L
	1.355–1.520	34.4–38.6	M
	1.485–1.595	37.7–40.5	N
	1.530–1.640	38.9–41.7	P
	1.575–1.685	40.0–42.8	Q
	1.665–1.785	42.3–45.3	R
	1.755–1.875	44.6–47.9	S
	1.845–1.965	46.9–50.0	T
	1.960–2.210	49.8–56.1	U

Table 40. Shear bolt connectors

Cable conductor size				Shear bolt connector			
AWG or kcmil			mm²				
Compact	Compressed	Concentric	standard sized	Cable voltage class	Conductor code	Unthreaded catalog number	Threaded catalog number
1/0	1/0	1/0	50	15, 25, 35 kV	S1	**CDT630SB150**	**CDT630SB150T**
2/0	2/0	2/0	70				
3/0	3/0	3/0	—				
4/0	4/0	4/0	95				
250	250	250	120				
350	—	—	150				
—	350	350	185	15, 25, 35 kV	S3	**CDT630SB300**	**CDT630SB300T**
500	500	500	240				
600	600	600	300				
700	—	—	—				
—	700	700	—	15, 25, 35 kV	S4	**CDT630SB400**	**CDT630SB400T**
750	750	750	—				
800	800	—	400				
900	—	—	—				
—	—	800	—	15, 25 kV	S5	**CDT900SB500**	**CDT900SB500T**
—	900	900	—				
1000	1000	1000	500				
—	—	800	—	35 kV	S6	**CDT1250SB630**	**CDT1250SB630T**
—	900	900	—				
1000	1000	1000	500				
—	1100	1100	—				
—	1200	1200	—				
—	1250	1250	630				
—	1300	1300	—	35 kV	S8	**CDT1250SB800**	**CDT1250SB800T**
—	1400	1400	—				
—	1500	1500	800				

Note: Not available with PUSH-OP.

Table 41. 600/900 A replacement parts

	Catalog section	Description	kV class	Base part number	Notes
	CA650007EN CA650006EN	T-body	15/25 kV	DT625	① ②
			35 kV	DT635	① ②
	CA650007EN CA650006EN	Cap for insulating plug	15/25/35 kV	DIPCAP	
	CA650007EN CA650006EN	Insulating plug without stud (cap included)	15/25 kV	DIP625A (aluminum) DIP625C (copper)	③ ④ ⑤ ⑥
			35 kV	DIP635A (aluminum) DIP635C (copper)	③ ④ ⑤ ⑥
	CA650007EN CA650006EN	Connecting plug without stud	15/25 kV	DCP625A (aluminum) DCP625C (copper)	③ ④ ⑤ ⑥
			35 kV	DCP635A (aluminum) DCP635C (copper)	③ ④ ⑤ ⑥
	CA650007EN CA650006EN	BOL-T stud	15/25 kV	Stud-A (aluminum) Stud-C (copper)	④ ⑥
			35 kV	Stud635-A (aluminum) Stud635-C (copper)	④ ⑥
	CA650007EN CA650006EN	T-OP II stud	15/25/35 kV	Stud-T	⑦
	CA650007EN CA650006EN	11/16 inch unthreaded aluminum compression connector	15/25/35 kV	CC6A **CC4** U (see **Table 36**)	
	CA650007EN CA650006EN	15/16 inch threaded coppertop compression connector	15/25/35 kV	CC6C **CC4** T (see **Table 36**)	⑧
	CA650007EN CA650006EN	11/16 inch unthreaded coppertop compression connector	15/25/35 kV	CC6C **CC4** U (see **Table 36**)	⑧
	CA650003EN CA650008EN	Shear bolts	15/25 kV 15/25 kV 35 kV 35 kV	CDT630SB--- CDT900DB--- CDT630SB--- CDT1250SB--- CDT **CC4** (see **Table 36**)	
	CA650007EN CA650006EN	Cable adapter	15/25 kV 35 kV	CA625 **CR5** (see **Table 35**) CA635 **CR6** (see **Table 47**)	
	CA650007EN CA650006EN	T-OP II installation and torque tool	15/25 kV 35 kV	TQHD625 (15/25 kV-T-OP II only) TQHD635 (35 kV T-OP II only)	⑨
	CA650007EN CA650006EN	T-OP II combination operating, test, and torque tool (for single person hotstick operation)	15 kV	OTTQ615	⑩
			25 kV	OTTQ625	⑩
			35 kV	OTTQ635	⑩
	CA650007EN CA650006EN	T-WRENCH for BT-TAP/T-OP II	15/25/35 kV	TWRENCH	⑪
	CA650041EN CA650042EN CA650054EN	5/16-inch hex shaft with 3/8-inch socket drive tool	15/25 kV	HD625	⑫
			35 kV	HD635	⑫
		Bushing extender	15/25 kV	DBE625	②
			35 kV	DBE635	②
		Loadbreak reducing tap plug for T-OP II (Stud-T included)	15 kV	LRTP615	
			25 kV	LRTP625	
			35 kV	LRTP635	
		BOL-T loadbreak reducing tap plug for BT-TAP	15 kV	BLRTP615	⑬
			25 kV	BLRTP625	⑬
			35 kV	BLRTP635	

① To specify a test point, insert a **"T"** in the sixth digit.

② To add stud to kit, add a **"SA"** for an aluminum stud, or a **"SC"** for a copper stud as the last characters in the part number.

③ To add STUD to kit, add a **"S"** after the base part number. Material of stud supplied will match with material of the plug conductor ordered.

④ Specify aluminum for 600 A rating. Specify copper for 900 A rating when used with a coppertop compression connector or shear bolt and all-copper mating components.

⑤ Stud comes loose in kit, add a **"P"** as the last character for permanent factory installation.

⑥ Specify **"A"** for 600 A rating or **"C"** for 900 A rating.

⑦ Copper alloy stud for use with T-OP II connectors only.

⑧ To specify an all-copper connector, add **50** to the conductor code from **Table 36**). Example: CC6C11T becomes CC6C61T.

⑨ TQHD6_ allows for installation of T-OP II connector to 600 A bushing.

⑩ OTTQ6_ allows for installation and single hotstick operation of T-OP II connector.

⑪ T-WRENCH allows for installation of loadbreak reducing tap plug for BT-TAP or T-OP II connector.

⑫ HD6_ allows for installation of BLRTP6_ _ reducing tap plug and connecting plug in 600 A separable splices.

⑬ To add standard length stud to kit, add **"S"** to end of part number. To add an extended length stud to kit, add **"L"** to end of part number.

600/900 A connector systems

BOL-T connector system

Eaton designs its Cooper Power series BOL-T deadbreak connector system for use on applications that will not be operated, do not need grounding or arrester provisions, and do not require direct conductor testing or the use of a hotstick. It is a bolted design that is interchangeable with other manufacturers' bolted 600 A systems that require no special tools for installation.

The capacitive test point on the insulating plug provides a means of confirming an energized circuit without disturbing the bolted connection. In addition to the capacitive test point feature on the insulating plug, we offer a capacitive test point on the T-Body. This allows the use of our "TPR" faulted circuit indicators, and provides a means of confirming that a circuit is energized when used with high-impedance voltage sensing devices designed for test points.

Refer to **Figure 24** for BOL-T connector kit components.

Installation of BOL-T on a 600/900 A bushing

The BOL-T connector is installed on any 600/900 A bushing using a standard 1-inch socket. No special tools are required.

BOL-T specification information

To specify the BOL-T connector system, include in your specification:

- The system must fully comply with IEEE Std 386
- All cable adapters, insulating plugs, compression connectors and other component parts must be interchangeable with other manufacturers
- For 900 A rating, full copper current-carrying path with coppertop compression connector or shear bolt, copper stud and insulating plug with copper insert
- BOL-T connector system base part number BT625 for 15 kV and 25 kV systems and BT635 for 35 kV systems

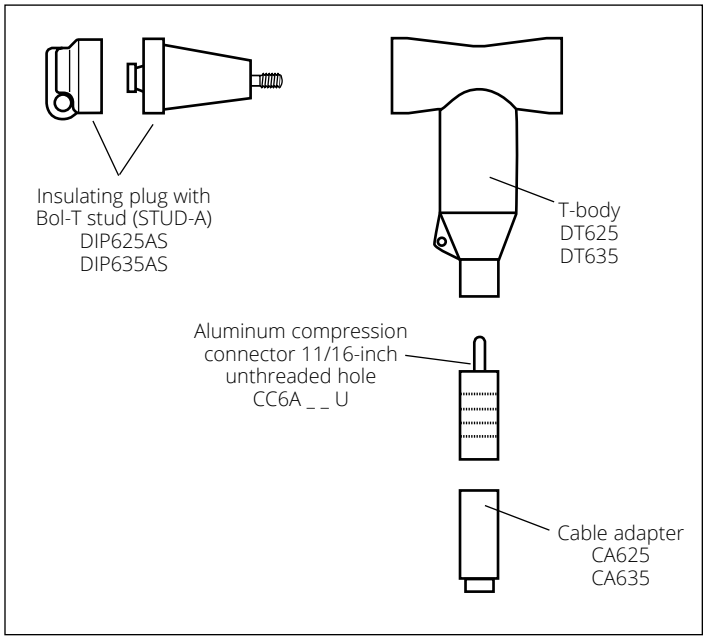


Figure 24. BOL-T connector kit (BT6_5) components (for more details, see catalog sections CA650003EN and CA650008EN)

BT-TAP connector system

The BT-TAP deadbreak connector system is designed for use on applications where a 200 A interface is required for testing, grounding, or overvoltage protection. It is primarily used in retrofit applications of existing 600 A or 900 A BOL-T installations (or other bolted systems that use unthreaded compression connectors).

The BT-TAP connector system uses the standard unthreaded compression connector, which makes it ideal for retrofitting existing BOL-T connector installations into a system with a 200 A tap.

The BT-TAP connector provides the following features:

- Visible ground and visible break
- 200 A interface for:
  - Addition of our deadfront elbow arrester for overvoltage protection
  - Addition of our grounding elbows
  - Access for direct conductor phasing and testing
  - Hipot testing of switch or cables

Refer to **Figure 25** for BT-TAP connector kit components.

Installation of BT-TAP on a 600 A bushing

The BT-TAP connector is installed on an apparatus bushing using a 600 A torque tool.

BT-TAP specification information

To specify a BT-TAP connector system, include in your specification:

- The system must fully comply with IEEE Std 386
- The connector system must provide operation with hot line tools, direct conductor phasing and testing
- It must provide a location to add overvoltage arresters and access for direct conductor phasing or hipot testing of switch or cables
- Must be easy to install with proper torque such that concern for cross threading is eliminated
- Loadbreak reducing tap plug must include latch indicator ring
- BT-TAP connector system base part number BTP615 (A) (C) for 15 kV, BTP625 (A) (C) for 25 kV and BTP635 for 35 kV

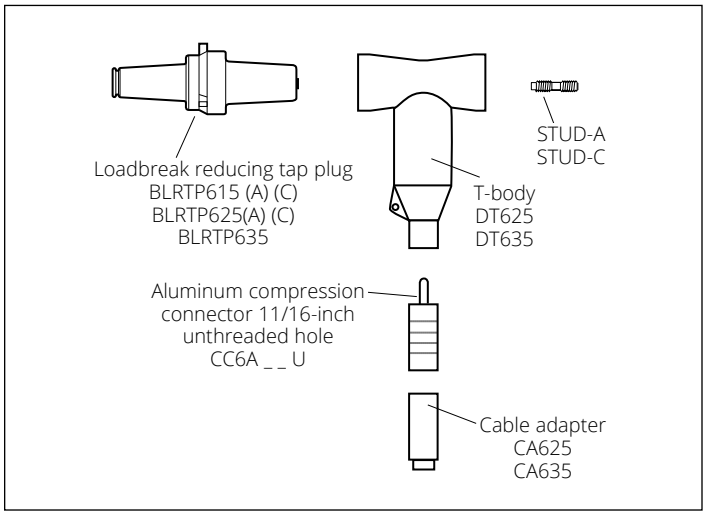


Figure 25. BT-TAP connector kit (BTP6_5_) components (for more details, see catalog sections CA650002EN, CA650001EN and CA650009EN)

T-OP II connector system

Eaton designs its Cooper Power series T-OP II deadbreak connector system for use on applications where a 200 A interface is required for testing, grounding, or overvoltage protection. It is single-person hotstick operable and is ideal for terminations that may require moving to achieve a visible open or visible ground. One person can move the T-OP II deadbreak terminator from the apparatus bushing to a standoff bushing using a hotstick and operating test and torque tool (OTTQ6_5).

The T-OP II connector system uses a threaded coppertop (bi-metal) compression connector for a threaded connection. It also has an alignment segment and internal rotating nut feature in the loadbreak reducing tap plug that, along with the extended length stud, eliminates cross threading and ensures proper torque.

The T-OP II system provides the following features:

- Single-person hotstick operable
- Mechanical assist
- Copper alloy current path and copper-top connector
- 900 A continuous current rating
- Visible ground and visible break
- 200 A interface for:
  - Addition of our M.O.V.E arresters for overvoltage protection
  - Addition of our grounding elbows
  - Access for direct conductor phasing and testing
  - Hipot testing of switch or cables

Refer to **Figure 26** for T-OP II connector kit components.

Installation of T-OP II on a 600/900 A bushing

The T-OP II connector is installed on an apparatus bushing using a T-Wrench and a 600 A torque tool.

T-OP II specification information

To specify a 900 A T-OP II system, include in your specification:

- The system must fully comply with IEEE Std 386
- Must include an all-copper alloy current path and copper-top connector
- System must include disconnecting back-off feature
- The connector system must provide operation with live line tools, direct conductor phasing and testing, visible ground and visible break
- It must provide a location to add overvoltage arresters and access for direct conductor phasing or hipot testing of switch or cables
- Must be one-person hotstick operable and easy to install with proper torque such that concern for cross threading is eliminated
- Loadbreak reducing tap plug must include extended length stud, internal rotating nut and an alignment segment feature to eliminate cross threading of this compression connector and ensure proper torque
- Loadbreak reducing tap plug must include latch indicator ring
- T-OP II connector system base part number TP615 for 15 kV, TP625 for 25 kV and TP635 for 35 kV

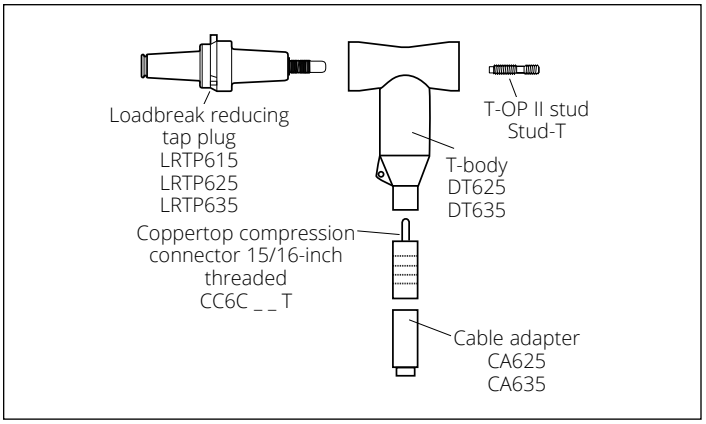


Figure 26. T-OP II connector kit (TP6_5_) components (for more details, see catalog sections CA650017EN, CA650059EN, CA650055EN)

600 A stacking dimensions

Dimensions in inches (mm)

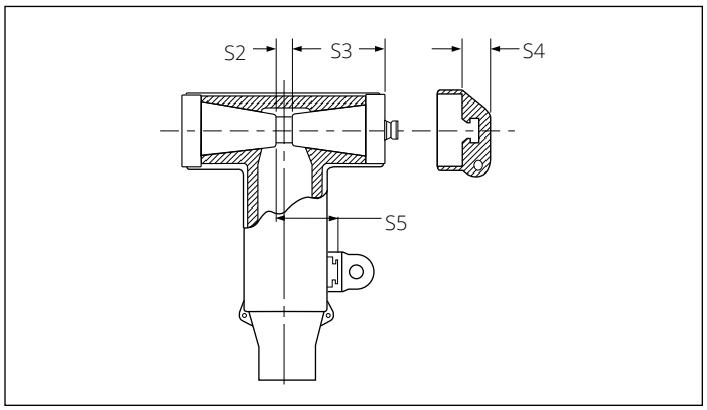


Figure 27. BOL-T deadbreak connector

Dimension	15/25 kV	35 kV
S2	0.50 (12.7)	0.50 (12.7)
S3	3.87 (98.3)	4.97 (126.0)
S4	1.50 (38.1)	1.50 (38.0)
S5	2.40 (61.0)	2.84 (72.0

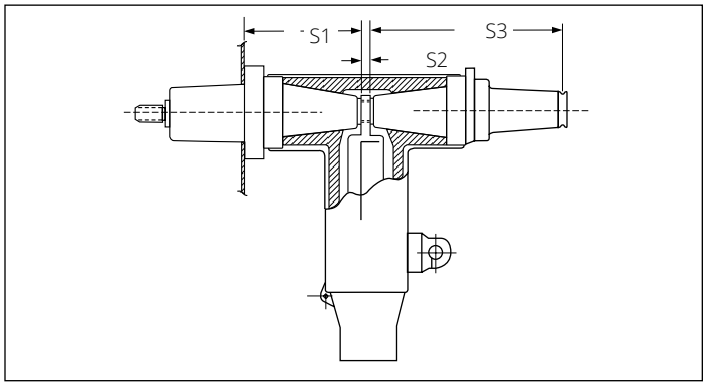


Figure 28. BT-TAP and T-OP II deadbreak connector 15 kV and 25 kV

Dimension	15/25 kV
S1	4.93 (125.2)
S2	0.50 (12.7)
S3	8.29 (210.6)

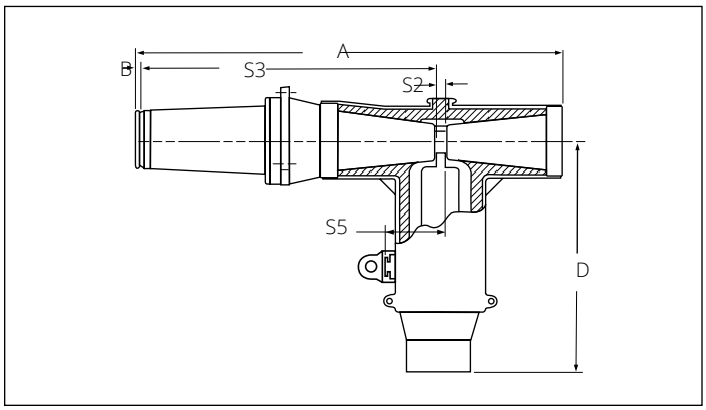


Figure 29. BT-Tap and T-OP II deadbreak connector 35 kV

Dimension	35 kV
A	18.10 (459.7)
B	0.22 (5.6)
D	12.89 (327.4)
S2	0.50 (12.7)
S3	12.46 (316.5)
S5	2.84 (72.1)

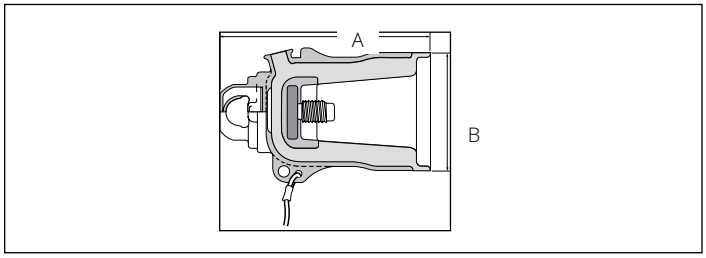


Figure 30. Standard protective cap

Dimension	15/25 kV	35 kV
A	7.60 (193.0)	8.66 (220.0)
B	3.25 (82.6)	3.25 (82.6)

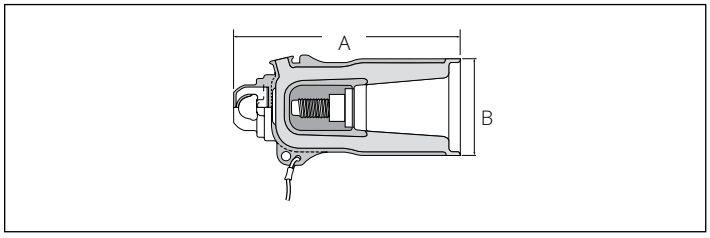


Figure 31. Protective cap for T-OP II and U-OP (15/25 kV shown)

Dimension	15/25 kV	35 kV
A	5.80 (147.3)	6.80 (173.0)
B	3.25 (82.6)	3.50 (88.9)

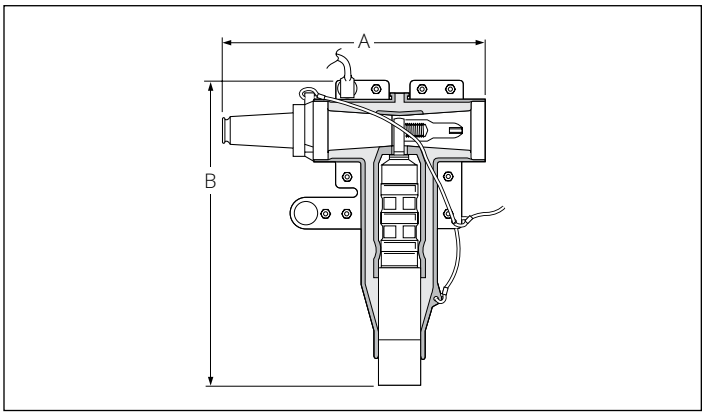


Figure 32. PUSH-OP deadbreak connector (15 kV shown)

Dimension	15 kV	25 kV	35 kV
A	12.80 (325.1)	15.50 (393.7)	17.90 (454.7)
B	14.05 (356.9)	14.05 (356.9)	—

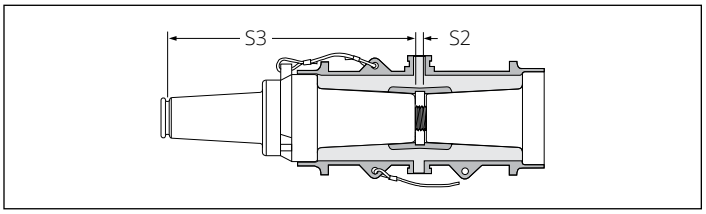


Figure 33. Bushing adapter with LRTP (15 kV shown)

Dimension	15/25 kV	35 kV
S2	0.50 (13.0)	0.50 (13.0)
S3	8.29 (210.6)	12.46 (316.5)

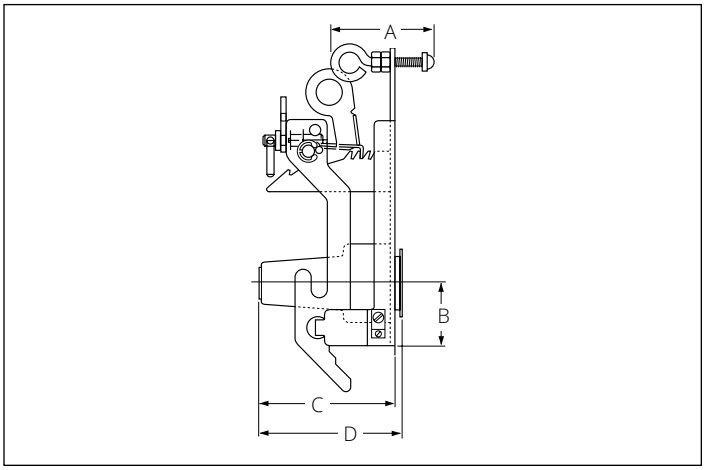


Figure 34. PUSH-OP standoff bushing (15/25 kV shown)

Dimension	15/25 kV	35 kV
A	4.00 (101.6)	5.80 (147.3)
B	2.37 (60.2)	2.88 (73.2)
C	5.25 (133.4)	6.00 (152.4)
D	5.50 (139.7)	6.27 (159.3)

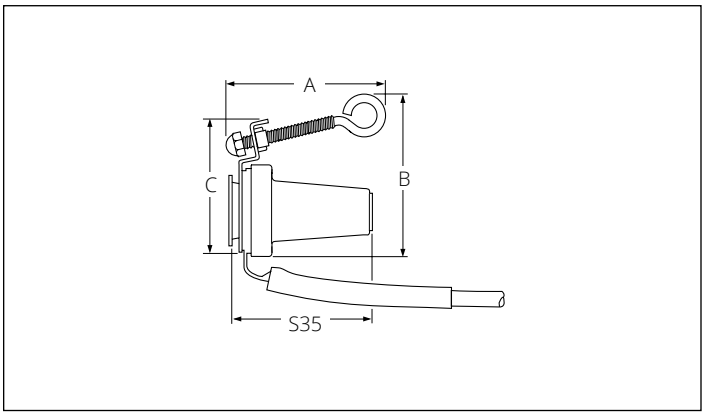


Figure 35. Standoff bushing

Dimension	15/25 kV	35 kV
A	5.40 (137.2)	5.40 (137.2)
B	5.60 (142.2)	5.60 (142.2)
C	4.40 (111.8)	4.40 (111.8)
S35	4.21 (106.9)	5.20 (132.1)

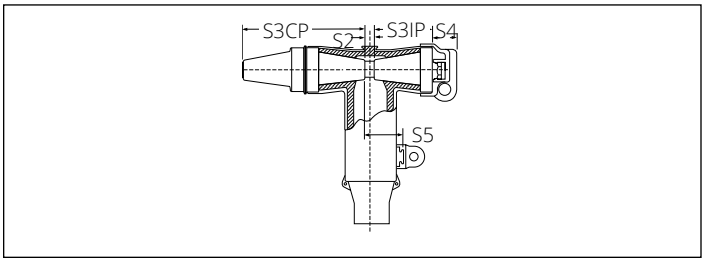


Figure 36. Separable splice

Dimension	15/25 kV
Overall length deadend	11.24 (285.0)
Overall length 2-way splice	19.97 (507.0)
Overall length 3-way splice	28.70 (729.0)
Overall length 4-way splice	37.43 (951.0)
S2	0.50 (12.0)
S3CP	8.23 (209.0)
S3IP	3.87 (98.0)
S4	1.50 (38.0)
S5	2.40 (61.0)

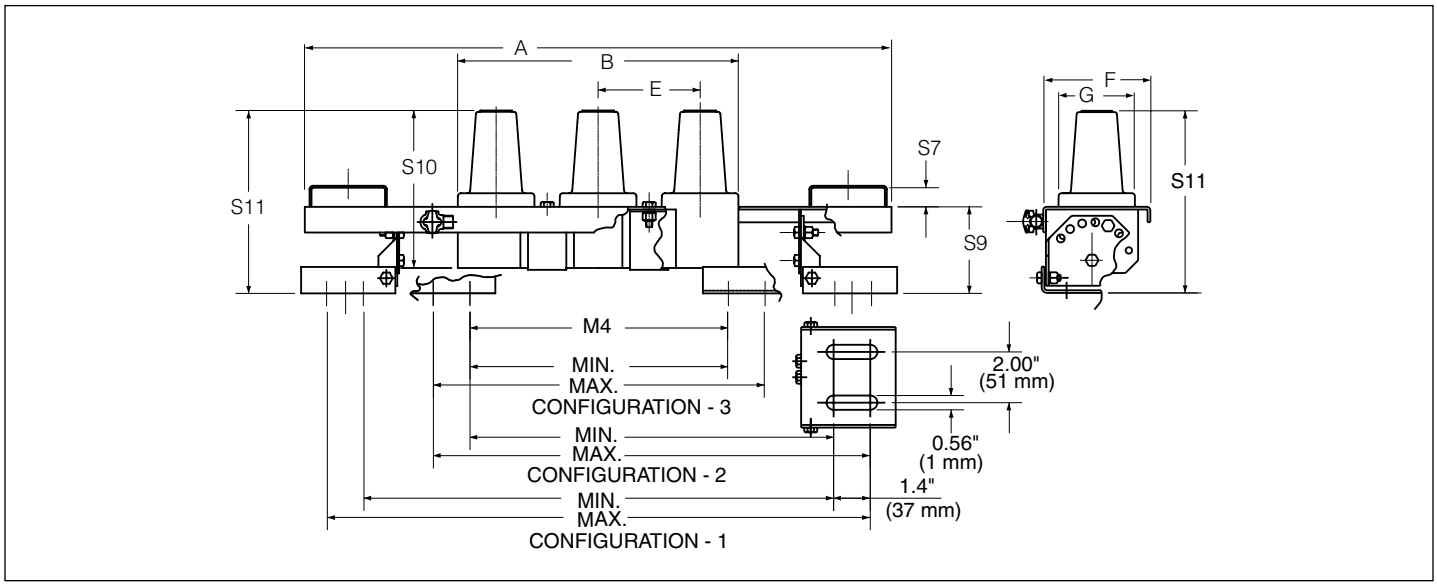


Figure 37. Deadbreak junction (15/25 kV shown)

Dimensions in inches (mm)	15/25 kV
E	4.00 (101.0)
F	4.10 (102.0)
G	3.00 (76.0)
S7	0.75 (19.0)
S9	3.40 (86.0)
S10	6.20 (157.0)
S11	7.20 (182.0)

Table 42. 15/25 kV

Number of interfaces	Physical dimensions in inches (mm)		M4 mounting dimensions in inches (mm)					
			Configuration 1 ①		Configuration 2 ②		Configuration 3 ③	
	A	B	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
2	19.00 (483.0)	7.00 (178.0)	14.10 (358.0)	16.90 (429.0)	9.70 (248.0)	12.50 (318.0)	5.60 (142.0)	8.40 (213.0)
3	23.00 (584.0)	11.00 (279.0)	18.60 (472.0)	21.40 (544.0)	14.20 (361.0)	17.00 (432.0)	10.10 (257.0)	12.90 (328.0)
4	27.10 (686.0)	15.00 (381.0)	24.10 (612.0)	26.90 (686.0)	19.70 (500.0)	22.50 (572.0)	15.60 (396.0)	18.40 (467.0)

① Configuration 1. Both feet turned out.

② Configuration 2. One foot turned out, the other in.

③ Configuration 3. Both feet turned in.

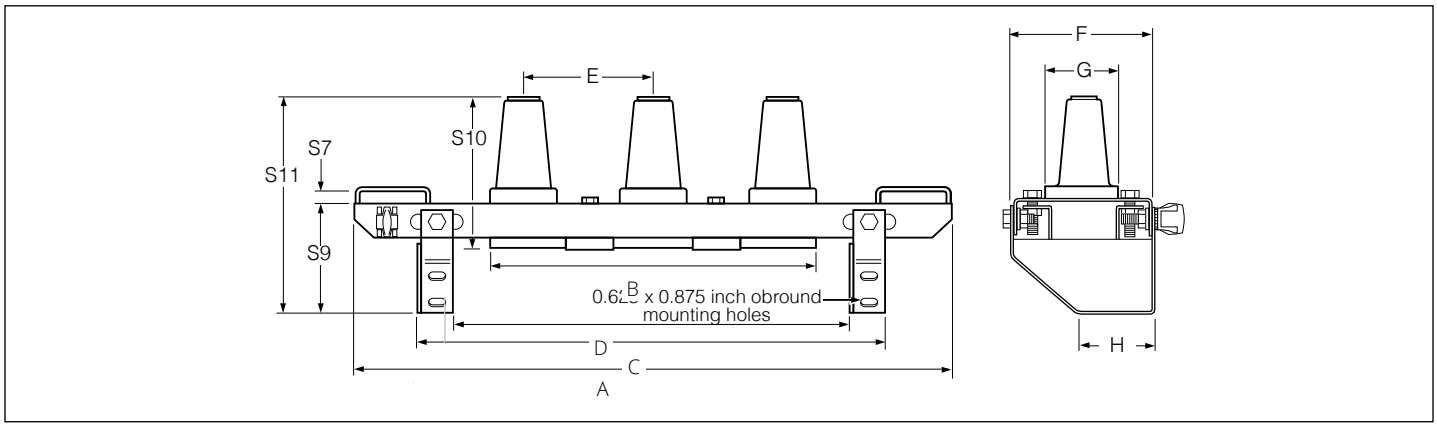


Figure 38. Deadbreak junction (35 kV shown)

Dimensions in inches (mm)	35 kV
E	6.00 (152.0)
F	6.20 (158.0)
G	3.00 (76.0)
H	3.80 (96.0)
S7	0.75 (19.0)
S9	5.55 (141.0)
S10	7.00 (178.0)
S11	10.40 (264.0)

Table 43. 35 kV

Number of interfaces	Physical dmensions in inches (mm)		Mounting dimensions in inches (mm)	
	A	B	C	D
2	21.50 (546.0)	9.00 (229.0)	15.50 (394.0	12.50 (318.0)
3	27.50 (699.0)	15.00 (381.0)	21.50 (546.0)	18.50 (470.0)
4	33.50 (851.0)	21.00 (533.0)	27.50 (699.0)	24.50 (622.0)

Note: C and D are minimum and maximum stud centerline separations for mounting.

Cold shrink cable accessories

Eaton's EZ Seal sealing kits allow for a reliable means to seal cable jackets at the end of medium-voltage power cables. They can be installed on either bare cable or along with cable accessories and connectors. The EPDM rubber sleeve is installed with mastic strips to create a tight seal around the cable's outer diameter. The mastic strips are used to help seal areas of inconsistent diameter, such as the location of neutral wires or other grounding methods.

The EZ Seal sleeve is an easy-to-install product utilizing cold shrink technology. The rubber sleeve comes expanded on a removable spiral core, ready for installation. After placing the mastic strips, the expanded sleeve should be positioned over the cable jacket and/or cable connector. Pulling the loose end of the plastic ripcord will unravel the spiral and allow the EZ Seal sleeve to shrink down onto the cable.

Each kit contains the necessary materials to seal one cable jacket end.

Features

- Compatible with various cable insulation shield types
  - CS kits—jacketed concentric neutral (JCN)
  - SA kits—tape, longitudinally corrugated, wire, and UniShield
- SA kits include an integrated ground braid and bleeder wire assembly for easy grounding capabilities
- 5-year storage life from 32 °F to 104 °F (0° to 40 °C)
- Proper water seal is ensured if product is stored within these parameters
- Recyclable polypropylene core

Figure 39. EZ Seal cold shrink kit

Figure 40. EZ Seal shield adapter kit

Dimensional information

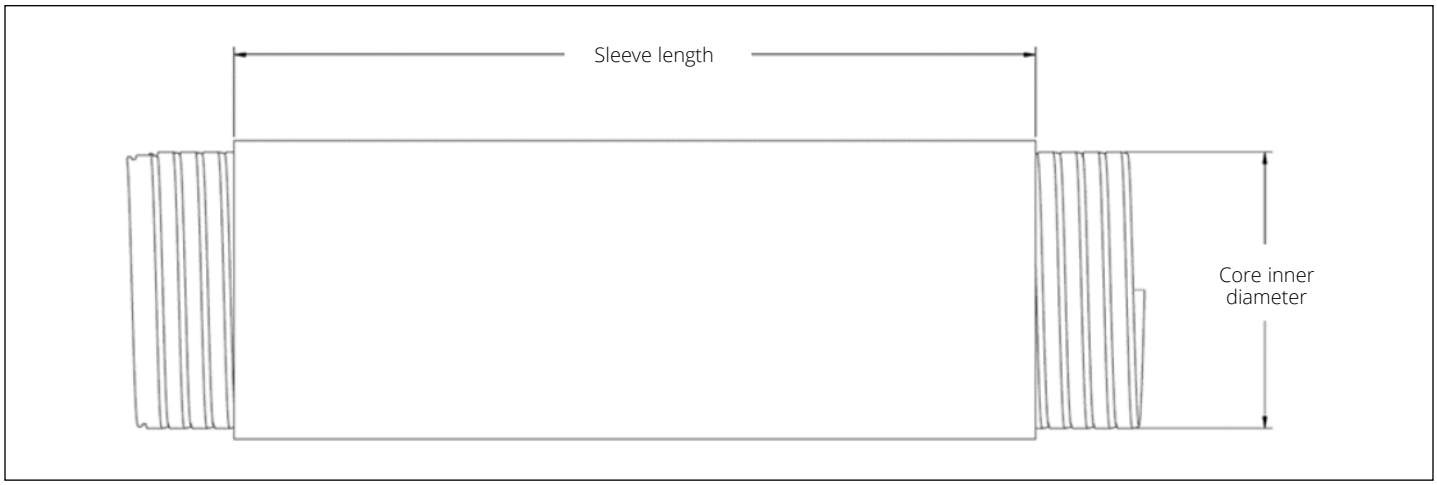


Figure 41. EZ Seal sleeve and core dimensions

Table 44. Typical sleeve and core dimensions

Catalog number	Typical expanded sleeve length on core inches (mm)	Typical relaxed sleeve length installed on cable inches (mm)	Core inner diameter inches (mm)
CS1	6.00 (152.0)	8.00 (203.0)	2.13 (54.0)
CS2	7.00 (17.08)	9.00 (230.0)	2.87 (73.0)
CS3	7.50 (190.0)	10.00 (254.0)	3.87 (98.0)
SA1	5.50 (140.0)	7.00 (178.0)	1.32 (34.0)
SA2	6.00 (152.0)	8.00 (203.0)	2.13 (54.0)
SA3	7.00 (178.0)	9.00 (230.0)	2.87 (73.0)
SA4	7.50 (190.0)	10.00 (254.0)	3.30 (84.0)

Table 45. Catalog numbering

Catalog section	Description	kV class	Base part number	Notes
CA650106EN	Cold shrink rejacket	N/A	CS **X**	See **X** below
	Metallic shield adapter kit	N/A	SA **Y**	See **Y** below

X = Cable jacket outer diameter, rejacket

Code	inches	mm
1	0.95–1.94	24–49
2	1.28–2.67	33–68
3	1.60–3.50	41–89

Y = Cable jacket outer diameter, shield adapter

Code	inches	mm
1	0.59–1.05	15–27
2	0.83–1.64	21–42
3	1.27–2.17	32–55
4	1.60–2.60	41–66

Splices

Eaton offers various types of splices for your underground needs on 200 A and 600 A systems. Eaton's Cooper Power series EZ II one-piece splices at 15, 25, and 35 kV include advantages for typical applications of repair, replacement, or extension of high-voltage underground cables. These all peroxide-cured EPDM rubber splices provide a highly reliable, permanent, fully shielded, and submersible cable joint with a current rating equal to that of the mating cable. EZ II splices can be installed in conduit, direct buried, or in vault applications. The EZ II splice line meets or exceeds all requirements of IEEE Std 404-1993.

We offer a full line of 600/900 A separable splice kits for application on feeder circuits. These use standard BOL-T type components along with a peroxide-cured EPDM rubber connecting plug that allows for installation of multiple-way splices. Separable splices are used to splice multiple cables or to deadend a single cable. The splices are rated for 600 A (900 A ratings are available) and are suitable for the repair or extension of underground feeders. Separable splice kits meet or exceed the requirements of IEEE Std 386-2016.

EZ II splices

The EZ II one-piece splices offer a number of features and benefits, including:

Easiest to install—The design features of the EZ II splice including the tapered cable entrance, smooth bore, relieved conductive insert, and reformulated rubber provide for easier field installation. EZ II splices have been shown to be 30% easier to install than other manufacturers' splices.

Wide range taking—The wide range taking cable entrances are sized to accept all common cable insulation diameters. The wider cable ranges increase installation flexibility.

Sure grip—The contoured EZ II splice body provides an easy gripping location during installation.

Long-term reliability—The EZ II splice has successfully passed all requirements of the IEEE Std 404-1993 and our exclusive field-proven multi-stress test to show the long-term reliability of the design.

EZ II splice specification information

To ensure you have the most reliable, economical, installation friendly premolded one-piece splice available, your specification for EZ II splice should include:

- Manufactured in full compliance with applicable IEEE Std 404-1993
- Manufactured from peroxide-cured EPDM rubber
- Tapered ribs of the inside diameter of the conductive insert
- Molded in compression connector diameters
- Conductive insert ends encapsulated with insulating rubber

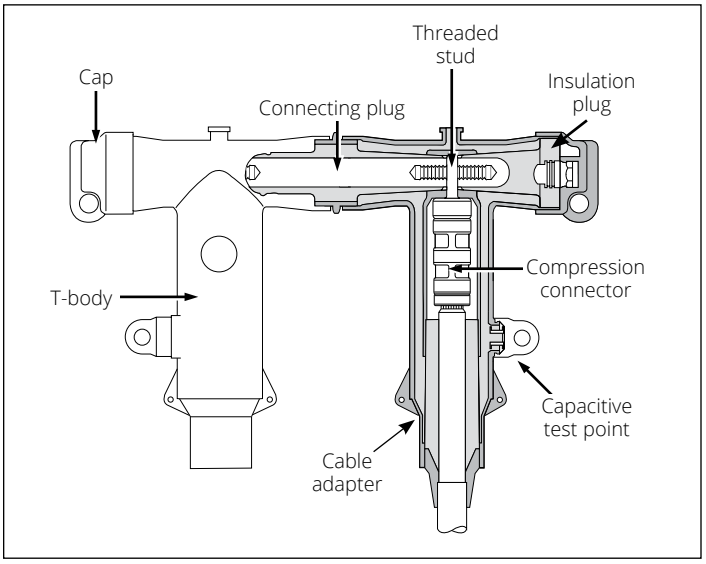


Figure 42. Typical components of a 600 A 2-way separable splice

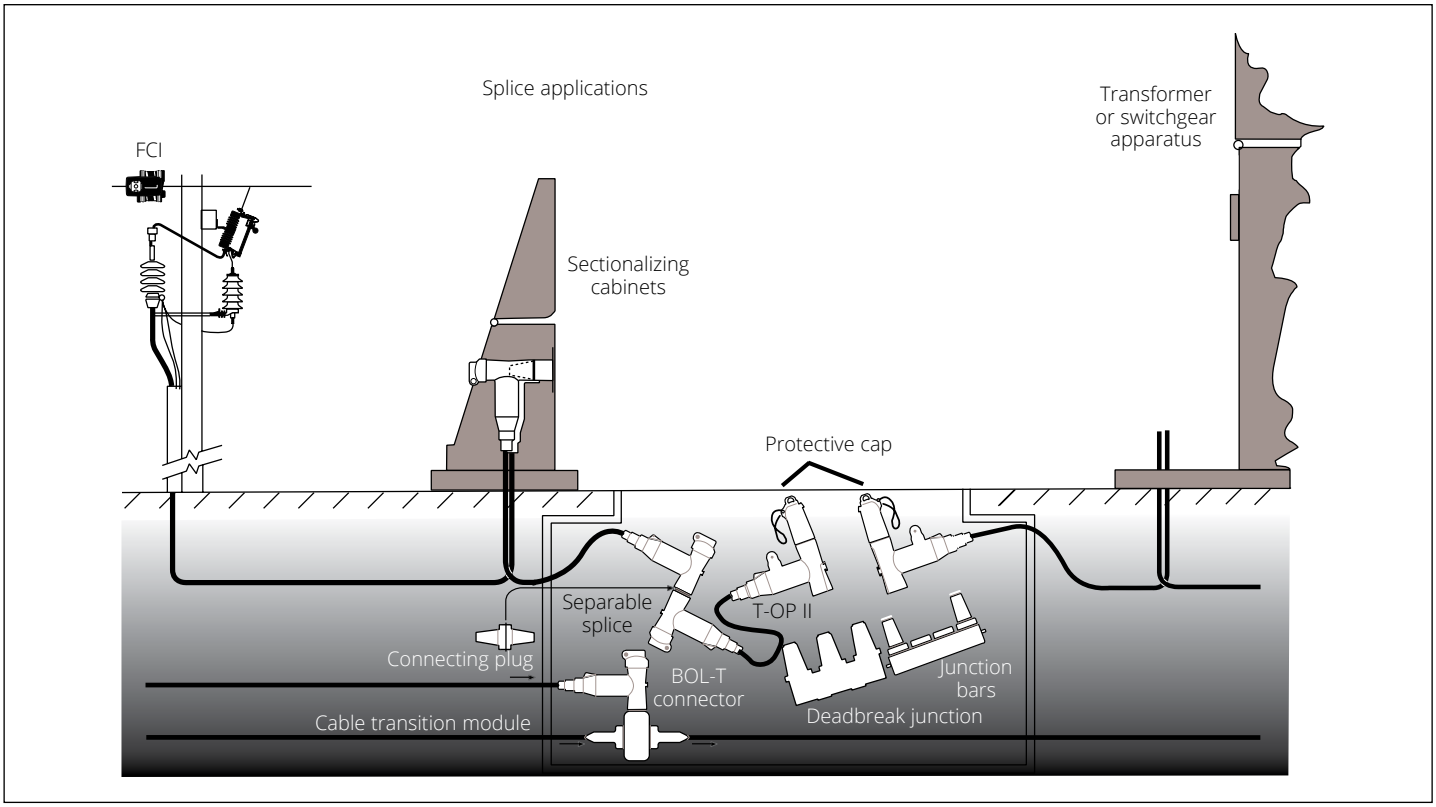
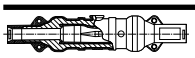
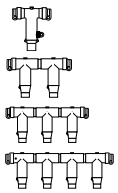
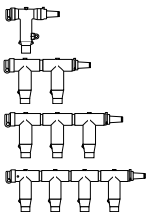


Figure 43. Splice application components

Table 46. Splice base part numbers

	Catalog section	Description	kV class	Base part number	Notes
	CA650020EN	EZ II splice	15 kV	SP15 **CR6 CC5** (see **Table 47** and **Table 48**)	① ② ③ ④
			25 kV	SP25 **CR6 CC5** (see **Table 47** and **Table 48**)	① ② ③ ④
			35 kV	SP35 **CR6 CC5** (see **Table 47** and **Table 48**)	① ② ③ ④
	CA650051EN CA650050EN	600 A separable splices (kits do not include cable adapters or compression connector, refer to 600 A replacement parts **page 37**)	15/25 kV		
			Deadend kit	SSPL625A1	⑤ ⑥ ⑦ ⑧
			2-way splice kit	SSPL625A2	⑤ ⑥ ⑦ ⑧
			3-way splice kit	SSPL625A3	⑤ ⑥ ⑦ ⑧
			4-way splice kit	SSPL625A4	⑤ ⑥ ⑦ ⑧
			35 kV		
			Deadend kit	SSPL635A1	⑤ ⑥ ⑦ ⑧
			2-way splice kit	SSPL635A2	⑤ ⑥ ⑦ ⑧
			3-way splice kit	SSPL635A3	⑤ ⑥ ⑦ ⑧
			4-way splice kit	SSPL635A4	⑤ ⑥ ⑦ ⑧
	CA650051EN CA650050EN	T-OP II 600 A separable splices with 200 A tap (kits do not include required threaded and unthreaded compression connectors or cable adapters, refer to 600 A replacement parts **page 37**)	15 kV		
			T-OP II deadend kit	SSPLT615A1	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 2-way splice kit	SSPLT615A2	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 3-way splice kit	SSPLT615A3	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 4-way splice kit	SSPLT615A4	⑤ ⑥ ⑦ ⑧ ⑨
			25 kV		
			T-OP II deadend kit	SSPLT625A1	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 2-way splice kit	SSPLT625A2	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 3-way splice kit	SSPLT625A3	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 4-way splice kit	SSPLT625A4	⑤ ⑥ ⑦ ⑧ ⑨
			35 kV		
			T-OP II deadend kit	SSPLT635A1	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 2-way splice kit	SSPLT635A2	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 3-way splice kit	SSPLT635A3	⑤ ⑥ ⑦ ⑧ ⑨
			T-OP II 4-way splice kit	SSPLT635A4	⑤ ⑥ ⑦ ⑧ ⑨

① For an all-copper connector, change digit **6** from a **"0"** to a **"C"**.

② For a splice with a single-piece rejacketing kit, insert a **"S"** or for a 2-piece rejacketing kit, insert a **"D"** as the ninth character in the part number.

③ For individually packaged product in a corrugated cardboard box, insert an **"X"** as the last character in the part number.

④ To splice different sized cables, refer to transition splice information in catalog section CA650020EN.

⑤ For 900 A rating (copper components), replace the **"A"** with a **"C"**.

⑥ For T-bodies with test points, insert a **"T"** directly after the base part number.

⑦ Studs are bagged and loose in kit. To have studs permanently installed at the factory, add a **"P"** after the test point designation (if applicable) or after the base part number.

⑧ Installation requires a standard 5/16-inch hex key (HD625).

⑨ To include 200 A loadbreak protective cap, add a **"C"** as the last character in the part number.

Table 47. CR6 cable diameter (insulation) range

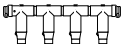
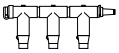
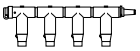
Use for base number	Cable diameter range		Voltage class (kV)	Conductor range	Cable range code
	Inches	mm			
SP15 SP25 SP35	0.640–0.910	16.3–23.1	15	#3 str—3/0 compact	**A**
	0.750–1.010	19.1–25.7	15 and 25	#3 str—3/0 compact	**B**
	0.890–1.140	22.6–29.0	15 and 25	#3 str—250 stranded	**C**
	0.840–1.110	21.3–28.2	25 and 35	#3 str—250 stranded	**D**
	1.000–1.310	25.4–33.3			**E**
	1.140–1.450	29.0–36.8	35	#3 str—250 stranded	**F**

Table 48. CC5 conductor size and type

Use for base number	Stranded or compressed		Compact or solid		Conductor code
	AWG	mm²	AWG	mm²	
SP15 SP25 SP35	#3	25	#2	35	**001**
	#2	35	#1	—	**002**
	#1	—	1/0	50	**003**
	1/0	50	2/0	70	**004**
	2/0	70	3/0	—	**005**
	3/0	—	4/0	95	**006**
	4/0	95	250	120	**007**
	250 ①	120	—	—	**008**

① Compressed stranding only

Table 49. Separable splice kits

		Splice kit contents					Order separately (refer to page 37)		
									
	Assembly	**T-body**	**Insulating plug with cap**	**Insulating plug with cap and stud**	**Connecting plug with stud**	**Loadbreak reducing tap plug (includes STUD-T)**	**Cable adapter**	**Unthreaded compression connector**	**Threaded coppertop connector**
	Deadend	1	1	1	—	—	1	1	—
	2-way splice	2	1	1	1	—	2	2	—
	3-way splice	3	1	1	2	—	3	3	—
	4-way splice	4	1	1	3	—	4	4	—
	T-OP II deadend	1	1	—	—	1	1	–	1
	T-OP II 2-way splice	2	1	—	1	1	2	1	1
	T-OP II 3-way splice	3	1	—	2	1	3	2	1
	T-OP II 4-way splice	4	1	—	3	1	4	3	1

Underground surge arresters

Eaton provides shielded deadfront arrester protection with its Cooper Power series metal oxide varistor elbow and parking stand arresters used in pad-mounted transformer and entry cabinets, vaults, switching enclosures and other installations. These arresters are designed for use with 200 A loadbreak interfaces to limit overvoltages to acceptable levels, protect equipment and extend cable life.

POSI-BREAK elbow arrester

The POSI-BREAK arrester provides the same safety benefits of the POSI-BREAK connector system with over-voltage protection. The POSI-BREAK elbow arrester is available for 9–21 kV for 25 kV class interfaces.

M.O.V.E. DirectConnect elbow arrester

M.O.V.E. DirectConnect elbow arresters are used on underground systems in pad-mounted transformer and entry cabinets, vaults, switching enclosures and other installations to provide shielded deadfront arrester protection. They are designed for use with 600 A, 35 kV Class deadbreak interfaces that conform to IEEE Std 386 to limit overvoltages to acceptable levels, protect equipment and extend cable life.

M.O.V.E. DirectConnect elbow arrester specification information

Design tests

- IEEE Std 386, separable insulated connector systems
- IEEE Std C62.11, metal oxide surge arresters for AC power circuits

M.O.V.E. DirectConnect elbow arrester

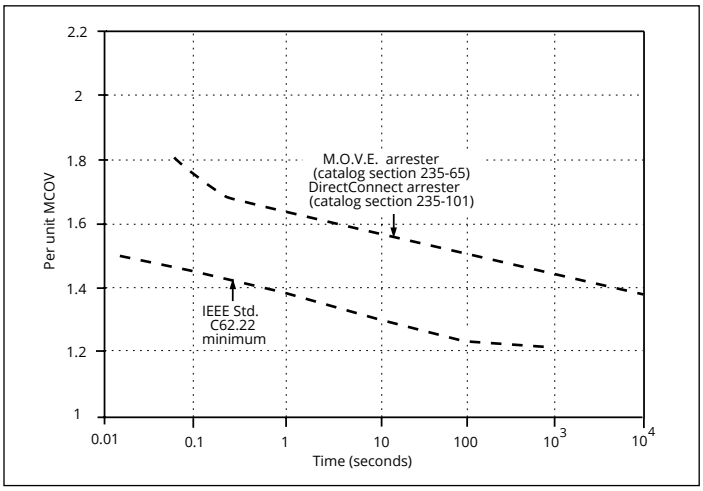
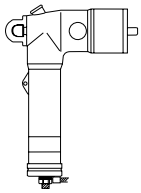
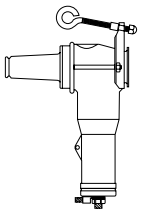
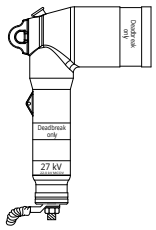


Figure 44. Temporary overvoltage curve—no prior duty at 85 °C ambient

Table 50. Commonly applied voltage ratings of elbow and parking stand arresters

System voltage (kV rms)		Commonly applied arrester duty-cycle (MCOV) voltage rating (kV rms) on distribution systems		
Nominal voltage	**Maximum voltage range B**	**Four-wire multi-grounded neutral wye**	**Three-wire low impedance grounded**	**Three-wire high impedance grounded**
2400	2540	—	—	3 (2.55)
4160 Y/2400	4400 Y/2540	3 (2.55)	6 (5.1)	6 (5.1)
4160	4400	—	—	6 (5.1)
4800	5080	—	—	6 (5.1)
6900	7260	—	—	9 (7.65)
8320 Y/4800	8800 Y/5080	6 (5.1)	9 (7.65)	—
12,000 Y/6930	12,700 Y/7330	9 (7.65)	12 (10.2)	—
12,470 Y/7200	13,200 Y/7620	9 (7.65) or 10 (8.4)	15 (12.7)	—
13,200 Y/7620	13,970 Y/8070	10 (8.4)	15 (12.7)	—
13,800 Y/7970	14,520 Y/8380	10 (8.4) and 12 (10.2)	15 (12.7)	—
13,800	14,520	—	—	18 (15.3)
20,780 Y/12,000	22,000 Y/12,700	15 (12.7)	21 (17.0)	—
22,860 Y/13,200	24,200 Y/13,970	18 (15.3)	24 (19.5)	—
23,000	24,340	—	—	30 (24.4)
24,940 Y/14,400	26,400 Y/15,240	18 (15.3)	27 (22.0)	—
27,600 Y/15,935	29,255 Y/16,890	21 (17.0)	30 (24.4)	—
34,500 Y/19,920	36,510 Y/21,080	27 (22.0)	36 (29.0)	—
46,000 Y/26,600	48,300 Y/28,000	36 (29.0)	—	—

Table 51. Elbow arrester base part numbers

	Catalog section	Description	kV class	Base part number	MCOV (kV)
	CA235025EN	Metal oxide elbow (M.O.V.E.) arrester	15 kV	3238018C03M 3238018C06M 3238018C09M 3238018C10M 3238018C12M 3238018C15M 3238018C18M	2.55 5.1 7.65 8.4 10.2 12.7 15.3
			25 kV	3238019C09M 3238019C10M 3238019C12M 3238019C15M 3238019C18M 3238019C21M	7.65 8.4 10.2 12.7 15.3 17.0
			25 kV POSI-BREAK elbow arrester	PLEA225N03 PLEA225N06 PLEA225N09 PLEA225N10 PLEA225N12 PLEA225N15 PLEA225N18 PLEA225N21	2.55 5.1 7.65 8.4 10.2 12.7 15.3 17.0
			35 kV (interface 1A Large interface per IEEE Std 386 -2006)	3238020C18M 3238020C21M 3238020C24M 3238020C27M 3238020C30M 3238020C33M 3238020C36M	15.3 17.0 19.5 22.0 24.4 27 29
	CA235027EN	Metal oxide (MOV) parking stand arrester	15 kV	3237686C03M 3237686C06M 3237686C09M 3237686C10M 3237686C12M 3237686C15M 3237686C18M	2.55 5.1 7.65 8.4 10.2 12.7 15.3
			25 kV	3237758C09M 3237758C10M 3237758C12M 3237758C15M 3237758C18M 3237758C21M	7.65 8.4 10.2 12.7 15.3 17.0
	CA235026EN	M.O.V.E. DirectConnect elbow arrester	35 kV	DCEA635M27 DCEA635M30 DCEA635M33 DCEA635M36	22.0 24.4 27.0 29.0

The following notes apply to all part numbers on this page.

- Digits 9 and 10 designate duty cycle voltage rating, for other protective characteristics, refer to **Table 50** for M.O.V.E. and parking stand arresters and **Table 53** for DirectConnect elbow arresters
- Refer to **page 21** for dimensional information or referenced catalog section.

Table 52. M.O.V.E surge arrester and MOV parking stand arrester protective characteristics

Duty cycle voltage rating (kV)	MCOV (kV)	Equivalent front-of-wave ① (kV crest)	Maximum discharge voltage (kV crest) 8/20 µs current wave				
			1.5 kA	3 kA	5 kA	10 kA	20 kA
3	2.55	11.0	9.0	9.7	10.7	11.4	13.0
6	5.1	22.0	18.0	19.4	20.8	22.7	26.0
9	7.65	31.7	26.0	28.0	30.0	32.8	37.4
10	8.4	33.0	27.0	29.1	31.2	34.1	38.9
12	10.2	41.5	33.9	36.6	39.2	42.9	48.9
15	12.7	51.8	42.4	45.7	49.0	53.6	61.1
18	15.3	62.2	50.9	54.9	58.8	64.3	73.4
21	17.0	66.0	54.0	58.2	62.4	68.2	77.9
24	19.5	77.0	63.0	67.9	72.8	79.6	90.8
27	22.0	87.2	71.4	76.9	82.4	90.1	103.0
30	24.4	97.1	79.5	85.7	91.8	100.0	115.0
33	27.0	108.0	87.8	95.1	102.0	112.0	127.0
36	29.0	116.0	95.3	103.0	110.0	120.0	137.0

① Equivalent front-of-wave voltage is the expected discharge voltage of the arrester when tested with a 5 kA current surge cresting in 0.5 µs.

Table 53. M.O.V.E. DirectConnect elbow arrester electrical ratings and characteristics

Duty cycle voltage rating (kV)	MCOV (kV)	Equivalent front-of-wave ① (kV crest)	Maximum discharge voltage (kV crest) 8/20 µs current wave				
			1.5 kA	3 kA	5 kA	10 kA	20 kA
27	22.0	105.0	75.0	82.0	87.4	96.2	110.0
30	24.4	112.0	79.5	85.7	91.8	100.0	115.0
33	27.0	108.0	87.8	95.1	102.0	112.0	127.0
36	29.0	116.0	95.3	103.0	110.0	120.0	137.0

① Equivalent front-of-wave voltage is the expected discharge voltage of the arrester when tested with a 5 kA current surge cresting in 0.5 µs.

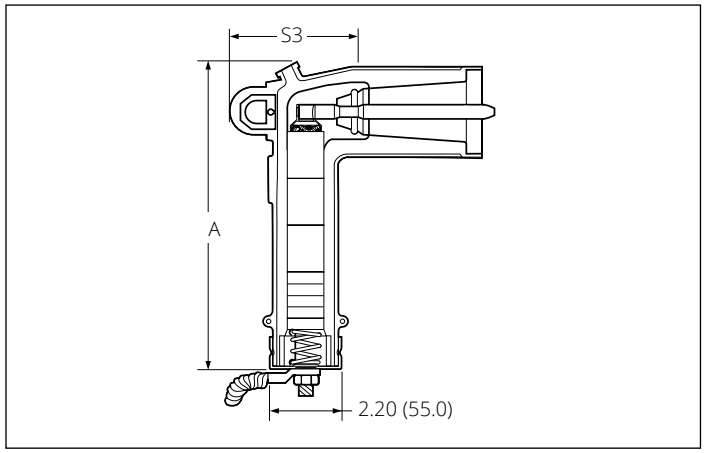


Figure 45. Underground surge arrester

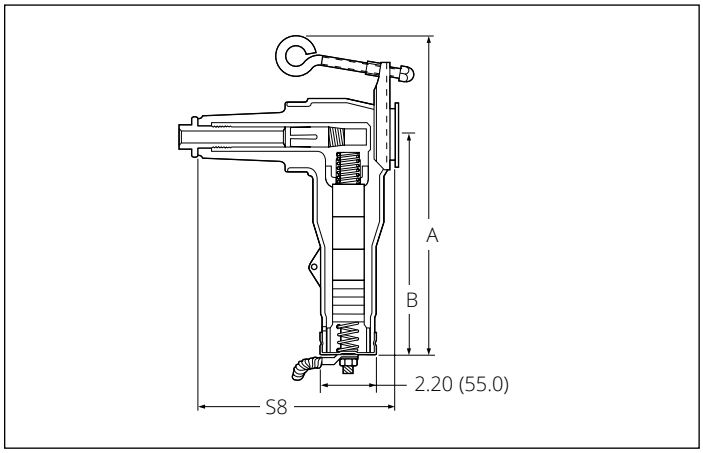


Figure 46. Parking stand arrester

Table 54. Deadfront elbow arrester

Dimension	Duty cycle (kV)	15 kV/25 kV	35 kV
A	3–27	8.50 (216.0)	13.30 (338.0)
	9–15	8.50 (216.0)	—
	18–27	10.90 (276.0)	13.30 (338.0)
S3	3–27	4.20 (107.0)	4.70 (120.0)
	9–27	4.20 (107.0)	4.70 (120.0)

Table 55. MOV parking stand arrester

Dimension	Duty cycle (kV)	15 kV	25 kV
A	3–21	11.90 (302.0)	11.90 (302.0)
	9–15	11.90 (302.0)	11.90 (302.0)
	18–21	14.50 (368.0)	14.50 (368.0)
B	3–21	8.00 (203.0)	8.00 (203.0)
	9–15	8.00 (203.0)	8.00 (203.0)
	18–21	10.60 (269.0)	10.60 (269.0)
S8	3–21	7.40 (188.0)	7.40 (188.0)
	9–21	7.40 (188.0)	7.40 (188.0)

Tools and maintenance

Eaton's Cooper Power series Kearney operation offers a wide variety of Hi-Line™ tools and maintenance equipment including insulated sticks, Fit-On™ tools, tree trimmers, fuse pullers, cover-up equipment, jumpering/grounding equipment, compression tools, cutters and accessories.

Kearney also offers a wide range of connectors. Products include:

- Aqua Seal™ and Airseal™ insulating and sealing material
- Compression Squeezon™ connectors, tee-taps, stirrups, terminals, grounding lugs, spacers
- Secondary terminal connectors, and a wide variety of sleeves

Catalog number	
O-tool dies	
30554CPS	B
26994	D
48410	J
40495CPS	K
26993	O
30611CPS	P
40493CPS	T
30084	737
30450	781
30124	840
36181CPS	3/16
30154	1/4
30043	5/16
30042	3/8
30041	1/2
26958	9/16
30914	19/32
26992CPS	5/8-1
40114CPS	11/16
Non-bow dies	
100625CPS	500
100600CPS	510
100613	620
100601	635
100618CPS	702
100602	747
100609	845
100606	980
EEI dies	
100603-7	7A
100603-9	9A
100603-11	11A
Other dies and accessories	
30744	BU-C
49341	Orange ③
36559	Plum ③
Wire cutter die for 2/0 ACSR Max	
30500CPS	

Note: The following are non-bow equivalents of standard dies: 737–747, 840–845, 1/2–500, 5/8-1–620.

Catalog number	
WH2, WH3, WH4, BH4, PH2 and PH13 dies	
36457	D
36459 ①	N
36467 ②	O
36472	U
36474 ②	15/16
36476 ②	840
36478 ②	781
36480 ②	737
36482CPS ②	635
36484CPS ②	5/8-1
36486CPS ②	19/32
36488 ②	9/16
36490CPS ②	1/2
36494CPS ②	3/8
36496 ②	5/16
36498 ②	1/4
36828CPS ②	P
36830CPS	C
36832CPS ②	B-K-T
36834CPS ②	747
36836 ②	572
36838 ②	510
40063 ②	727
40151CPS ②	11/16
40517	1 1/4 (hex)
49435 ②	3/4 (hex)
49437 ②	29/32 (hex)
100370CPS	15/16 (hex)
100399	1-2 (hex)
100400	1 1/8-2 (hex)
100433CPS	1 5/16 (hex)
100434CPS	1 1/2 (hex)
100455	9/16 wide
100456	840 wide

① For WH3 tool, use 36469-3.

② These dies may be used with adapter #100096CPS in PH3, PH4, PH14, PH15 and RH15 tools.

③ Nicopress die designation.

Catalog number	
PH4, PH15 and RH15 dies	
100472CPS	D
100473CPS	N
100474	U
100057	R
100470CPS	1-2
100471CPS	1-1/8-2
100440CPS	1-5/16
100460CPS	1-1/2
100459	1-5/8
100075CPS	1-3/4
100096CPS	Adapter
PH25 dies	
100006-16	1- 1/8-1
100006-7	727
100006-12	840
100007-3	1 1/2 (hex)
100007-4	1 5/8 (hex)
100007-6	1 3/4 (hex)
100007-9	2 1/8 (hex)
100007-23	R

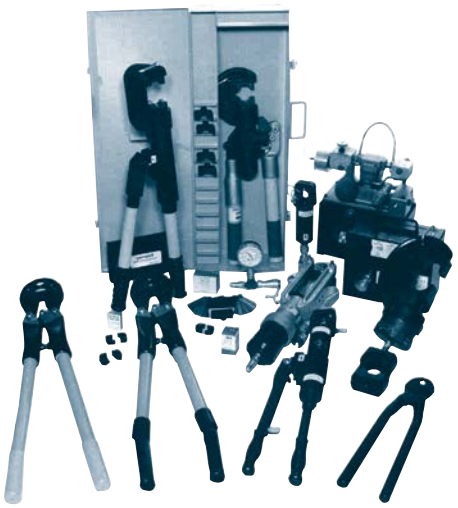
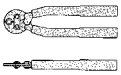


Table 56. Cases for O-tools

For tool model	Description	Catalog number	Net weight each
O–60 series	Die case	**30642CPS**	1 lb

Table 57. Tool and clampstick base part numbers

	Catalog section	Description	kV class	Base part number	Notes
Type "OS" tools					
	CA325006EN	5/8 fixed die		OS50	
		620 fixed die		OS-620	
Type O-62 tools 5/8-inch fixed nose die					
	CA325006EN	17-inch straight handles—non-insulated head		O-62F	① ④ ⑥
		21-inch straight handles—non-insulated head		O-62-21F	② ④ ⑥
		17-inch bent handles—non-insulated head		O-62-50F	③ ④ ⑥
Type O-63 tools with fixed "O" nose die					
	CA325006EN	17-inch straight handles—non-insulated head		O-63F	④ ⑤ ⑥
		21-inch straight handles—non-insulated head		O-63-21F	② ④ ⑥
		17-inch bent handles—non-insulated head		O-63-50F	③ ④ ⑥
Type O-65 tools with fixed 5/8-inch and "D" die					
	CA325006EN	17-inch straight handles—non-insulated head		O-65FB	⑥ ⑦
		21-inch straight handles—non-insulated head		O-65-21FB	② ⑥
		17-inch bent handles—non-insulated head		O-65-50FB	③ ⑥
Type O-68 tools with fixed "O" and "D" die					
	CA325006EN	17-inch straight handles—non-insulated head		O-68FB	⑥ ⑧
		21-inch straight handles—non-insulated head		O-68-21FB	② ⑥
		17-inch bent handles—non-insulated head		O-68-50FB	③ ⑥
PH13 series 12-ton remote hydraulic tool					
	CA325006EN	12 ton, 4,000 PSI remote hydraulic tool with case—13-inch length		PH13-4	⑨
Hand-operated cutters					
	CA325006EN	General purpose center cut		0190fC 0113D (cutter head)	
		Ratchet—type soft cable		8690FSK 8613FSK (cutter head)	
		Ratchet—type hard cable		8690FH 8613FH (cutter head)	
		Ratchet—type guy strand		8690CK 8613CK (cutter head)	
		Ratchet—type wire rope		8690TN 8613TN (cutter head)	
		ACSR wire rope and cable		0290FHJ	
		Shear—type hand operated		0290FCS 0213CSS (cutter head)	
		Compact electric cable		0890CSJ	
		Compact ratcheting cable		6990FHL	
Clampsticks					
	CA325005EN	Clampstick		See **Table 58**	
		Clampstick, Cam-EL™		See **Table 58**	
		Clampstick, hinged		See **Table 58**	
		Clampstick leverage tool		CS125UFLTOOL	

① For an insulated head, insert a **"-3"** between the **"2"** and the **"F"**. Example: 0-62-3F.

② For an insulated head, replace the **"1"** with a **"2"**.

③ For an insulated head, replace the **"50"** with a **"53"**.

④ To include **"D"** insert die, add a **"B"** as the last character in the part number.

⑤ For an insulated head, insert a **"-3"** between the **"3"** and the **"F"** Example: 0-63-3F.

⑥ Accepts Burndy® Type **"W"** dies.

⑦ For an insulated head, insert a **"-3"** between the **"5"** and the **"F"**. Example: 0-65-3FB.

⑧ For an insulated head, insert a **"-3"** between the **"8"** and the **"F"**. Example: 0-68-3FB.

⑨ For tool without case, insert a **"K"** as the first character in the part number.

18-inch fit-on leverage tool provides mechanical advantage during loadbreak switching

Note: Use external rod clampsticks only.

Table 58. Clampstick significant digit catalog numbering system

CS125 E 128 C UF

HEAD??
CS125 = Clampstick 1.25-inch pole

Stick type
E = External
I = Internal
H = Hinged

Length	Approximate folded length for hinged sticks
048 = 4 feet 8 inches ①	N/A
060 = 6 feet	3 feet
080 = 8 feet	4 feet
100 = 10 feet	5 feet
120 = 12 feet	6 feet
128 = 12 feet 8 inches ①	N/A

Clamp type
C = Cam-EL
S = Standard

End fitting
EC = Rubber end cap
UF = (Universal) Fit-on head ②

① Not available in the hinged type stick.

② Adds 2 inches to the length of the stick.

Table 59. Grounding kits and elbow accessory base part numbers

	Catalog section	Description	kV class	Base part number	Notes
Temporary grounding sets					
	CA325004EN	Single-phase Three-clamp set Pad-mounted		133040 (1/0 black cable)	
		Three-phase Four-clamp set Pad-mounted		133040-1 (1/0 black cable) 133040-2 (2/0 yellow cable)	
		Single replacement Clamp for 1/0 cable		133045CPS	
		Single replacement Clamp for 2/0 cable		133045Z20	
Grounding elbows					
	CA325004EN	15 kV		GE2151Y06-1/0 cable GE2152Y06-2/0 cable	①
		25 kV		GE2251Y06-1/0 cable GE2252Y06-2/0 cable	①
		35 kV		GE2351Y06-1/0 cable GE2352Y06-2/0 cable	①
Grounding kit					
	CA325004EN	15 kV		GE2151Y06K1 GE2152Y06K1 GE2151Y06K3 GE2152Y06K3	② ③ ④ ⑤
		25 kV		GE2251Y06K1 GE2252Y06K1 GE2251Y06K3 GE2252Y06K3	② ③ ④ ⑤
		35 kV		GE2351Y06K1 GE2352Y06K1	⑥ ⑦
Cleer grounding elbows					
	CA650013EN	Cleer grounding elbow	15/25	GE600 **A B CC DDD EE FF**	⑧
Insulating and sealing materials					
	CA325003EN	Aqua seal 3-3/4 inch x 3-3/4 inch pads—25 per box 3-3/4 inch x 10 ft roll		 104742-2 104742	 ⑨ ⑨
		Air seal 4 inch x 4 inch pads—25 per box 4 inch x 10 ft roll		 18415-8 18415-3	 ⑨ ⑨
Kearnalex™ inhibitor					
		Specification 118 (non-petroleum base) 4 oz plastic dispenser bottle 8 oz plastic dispenser bottle 8 oz plastic dispenser bottle—gritless		 30584-25 30584-3 30584-30	
Conductor cleaning brushes					
	CA325005EN	Fit-on head model V-brush with handle and guard Replacement element for both models e.g., 4455-62 or 118004		4455-62 118004 19100-S6	

① Clamp and ferrule are not included with the grounding elbow.

② Single-phase kit (K1) with one elbow with 1/0 cable, one portable feedthru, one protective cap, one temporary protective cap and one test probe in a carrying bag.

③ Single-phase kit (K1) with one elbow with 2/0 cable, one portable feedthru, one protective cap, one temporary protective cap and one test probe in a carrying bag.

④ Three-phase kit (K3) with three elbows with 1/0 cable, three portable feedthrus, three protective caps, three temporary protective caps and one test probe in a carrying bag.

⑤ Three-phase kit (K3) with three elbows with 2/0 cable, three portable feedthrus, three protective caps, three temporary protective caps and one test probe in a carrying bag.

⑥ Single-phase kit (K1) with one elbow with 1/0 cable, one portable feedthru, one protective cap and one test probe in a carrying bag.

⑦ Single-phase kit (K1) with one elbow with 2/0 cable, one portable feedthru, one protective cap and one test probe in a carrying bag.

⑧ See Cleer grounding elbows (**Table 60**).

⑨ Other material sizes available.

Table 60. Cleer grounding elbows

A = Conductor size

Code	Description
2	2/0 cable
4	4/0 cable

B = Cable insulation color

Code	Description
Y	Yellow
C	Clear

CC = Cable length

Code	Description
06	6 feet
08	8 feet
10	10 feet

EE = Phase option

Code	Description
K1	Single-phase kit
K3	Three-phase kit
—	Only grounding elbow

FF = Voltage class

Code	Description
15	15 kV
25	25 kV
35	35 kV

DDD = Clamp

Clamp style	Material	Clamp range	Cable range	ASTM rating 15 cycle withstand	Eye screw thread	Ferrule thread type	Catalog number
000	No clamp	—	—	—	—	—	—
01C	Bronze	#8 Sol. to 1-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5 inch thru hole	**3668-1-S6**
02C	Bronze	#8 Sol. to 1-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3668-100-S6**
04C	Aluminum	#8 Sol. to 1-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3654-100-S6**
07C	Bronze	#8 Sol. to 2-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3669-100-S6**
08C	Aluminum	#8 Sol. to 2-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5 inch thru hole	**3655-1-S6**
09C	Aluminum	#8 Sol. to 2-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3655-100-S6**
21C	Bronze	#8 Sol. to 1.375-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3620-2-S6**
22C	Bronze	#8 Sol. to 1-inch diameter	#2 to 4/0	4 (34 kA)	Fine	0.5–13	**3620-3-S6**
15C	Aluminum	#8 Sol. to 1-inch diameter	#2 to 250 kcmil	5 (43 kA)	Acme	0.5–13	**133035-2AL-S6**
16C	Bronze	#8 Sol. to 1-inch diameter	#2 to 250 kcmil	5 (43 kA)	Acme	0.5–13	**133035-2BRZ-S6**
20C	Aluminum	#8 Sol. to 5-inch diameter	#2 to 4/0	5 (43 kA)	Acme	0.5–13	**3688-2-S6**
11C	Aluminum	#8 Sol. to 2-inch diameter	#2 to 250 kcmil	6 (54 kA)	Acme	0.5–13	**133034-2AL-S6**
12C	Bronze	#8 Sol. to 2-inch diameter	#2 to 250 kcmil	6 (54 kA)	Acme	0.5–13	**133034-2BRZ-S6**
01F	Aluminum	#8 Sol. to 1.5-inch diameter	# 2 to 4/0	4 (34 kA)	Fine	0.5–13	**3659-S6**
02F	Bronze	#8 Sol. to 1.50inch diameter	# 2 to 4/0	4 (34 kA)	Fine	0.5–13	**3672-100-S6**
03F	Aluminum	#8 Sol. to 1.5-inch diameter	# 2 to 4/0	4 (34 kA)	Fine	0.5–13	**3673-100-S6**
04F	Aluminum	#8 Sol. to 2-inch diameter	# 2 to 250 kcmil	4 (34 kA)	Acme	0.625–11	**133036-8AL-S6**
05F	Bronze	#8 Sol. to 2-inch diameter	# 2 to 250 kcmil	4 (34 kA)	Acme	0.625–11	**133036-8BRZ-S6**
06F	Aluminum	#8 Sol. to 2-inch diameter	# 2 to 250 kcmil	4 (34 kA)	Acme	0.625–11	**133042-8AL-S6**
07F	Bronze	#8 Sol. to 2-inch diameter	# 2 to 250 kcmil	4 (34 kA)	Acme	0.625–11	**133042-8BRZ-S6**
1LP	Steel	0.25- to 1.25-inch diameter	1/0 to 2/0	—	—	Bolted	**133045-S6**

Note: Electrical ratings are rms symmetrical.

Bushings

Eaton has a full line of one-piece bushings, bushing wells, bushing well inserts, and feed-thru inserts in its Cooper Power series products for installation on transformers and/or sectionalizing cabinets. The 15 kV and 25 kV class bushing inserts use a knurled piston, providing maximum copper-to-copper current transfer and maximum thermal stability. After fault close operation, it locks the piston in the outward position, providing a visible indication against dangerous repetitive fault closure.

Table 61. Primary bushing ratings

Type primary bushings	Current rating (A)	Voltage rating (kV)
Bushing wells	200	15, 25, 35
Integral loadbreak bushing three-phase rated	200	35
Deadbreak apparatus bushing	600	15/25, 35
Deadbreak PUSH-OP apparatus bushing	600	15/25, 35

Specification information

200 A integral loadbreak bushing

- 200 A, 35 kV three-phase rated integral loadbreak bushing meeting the requirements of IEEE Std 386 No. 1A (large 35 kV class interface)
- Voltage and current ratings in accordance with IEEE Std 386

600 A PUSH-OP deadbreak bushing

- 600 A deadbreak apparatus bushing shall be compatible with 600 A PUSH-OP connectors
- Complete with plated copper finger contacts to accept PUSH-OP probe, to achieve a non-bolted connection
- Voltage and current ratings in accordance with IEEE Std 386

200 A HTN tri-clamp bushing well

- Molded-in semi-conductive shield
- 35 kV, 150 kV BIL
- HTN material
- Removable stud shall have provisions for easy removal of broken parts from both the bushing well and insert
- Voltage and current ratings in accordance with IEEE Std 386

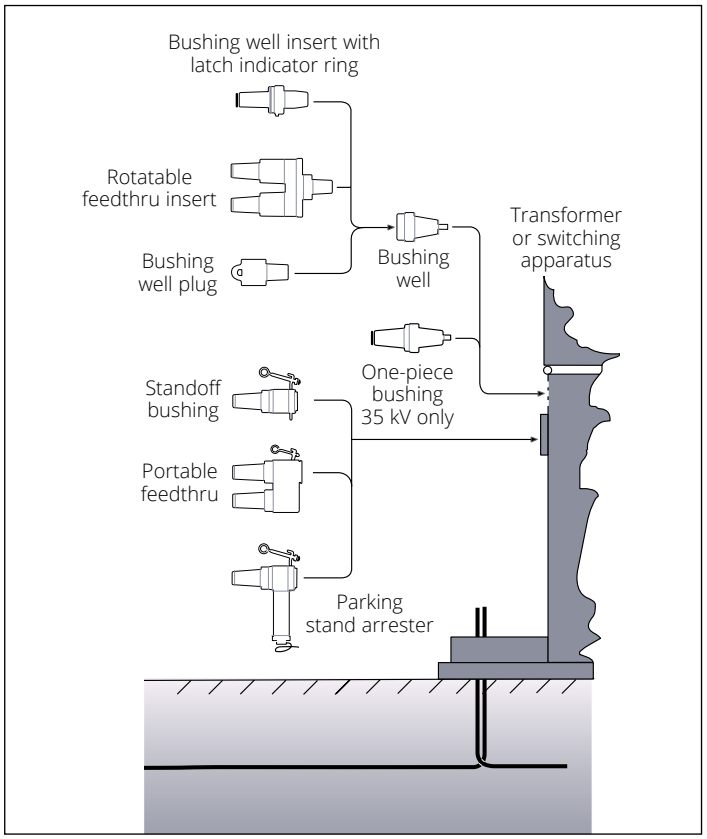


Figure 47. 200 A applications

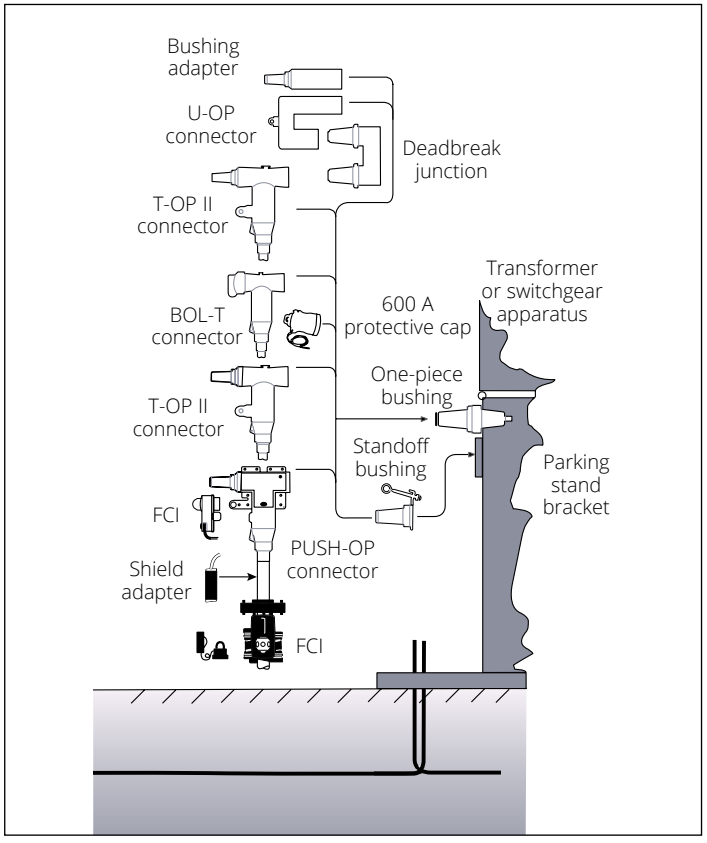
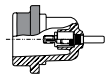


Figure 48. 600 A applications

Table 62. Bushing and clamps base part numbers

	Catalog section	Description	kV class	Base part number	Notes
	CA800016EN	200 A plastic (HTN) TRI-clamp bushing well 2-9/16 inch diameter hole size	15/25/35 kV	BW150F (with fixed stud) BW150R (with removable stud)	②
	CA800014EN	200 A plastic (HTN) bushing well 2-9/16 inch diameter hole size	15/25/28 kV	2638372C01 (with fixed stud) 2638372C02R (with removable stud)	① ② ⑤ ① ② ⑤
	CA800015EN	200 A epoxy bushing well 2-9/16 inch diameter hole size	15/25/28 kV	2603973B02T (with fixed stud) 2603973B02R (with removable stud)	① ② ① ②
	CA800021EN	200 A three-phase integral loadbreak bushing	35 kV	LB235B150 (externally clamped—2-3/4 inch)	③
	CA800025EN CA800020EN	600 A deadbreak bushing (externally clamped without stud)	15/25 kV	DB625B125 (aluminum)	③
			15/25 kV	DB925B125 (copper)	③
			35 kV	DB635B150 (150 kV BIL) DB635B200 (200 kV BIL)(aluminum) (2-9/16 inch)	③
			35 kV	DB935B150 (150 kV BIL) DB935B200 (200 kV BIL) (copper) (2-9/16 inch)	③
	CA800022EN CA800028EN	600 A deadbreak PUSH-OP bushing (externally clamped)	15/25 kV	DB625B125SP (2-9/16 inch)	④
			35 kV	DB635B150P	④
3-stud clamps					
	CA800022EN CA800028EN	4.688 B.C. with flange 4 bail tabs	15/25/35 kV	2085399A01 2085399A02 (stainless steel)	
4-stud clamps					
	CA800022EN CA800028EN	3.25 C-C	15/25/28 kV	2606821A01	
		3.25 C-C 2 bail tabs	15/25/28 kV	2606823A02	
		3.25 C-C 4 bail tabs	15/25/28 kV	2606823A04	
		3.90 C-C	35 kV	2603989B01	
		3.43 C-C (600 A)	15/25/35 kV	2637023B01	
		2-9/16 inch diameter hole gasket	15/25/28/35 kV	0537980C22	
		2-9/16 inch diameter hole gasket	15/25 kV	0537980C07	
		2-3/4 inch diameter hole gasket	35 kV	0537980C12	
		2-9/16 inch diameter hole gasket	15/25/35 kV	0537980C06	
		Red shipping cap	15/25/35 kV	2638640C01	
		Red shipping cap	35 kV	2606754A03	
		Red shipping cap Red shipping cap Red shipping cap	15/25 kV 35 kV 35 kV	2637700B02 2610082P01 2610082P01	
		Removable stud (well) Replacement kit	15/25/28/35 kV	2639081B01B	
		Removable threaded stud (600 A bushings)	15/25 kV	STUD-A (aluminum) STUD-C (copper)	
			35 kV	STUD635-A (aluminum) STUD635-C (copper)	
		Contact tube assembly	35 kV	2637407B03B	
		Contact tool replacement tool	35 kV	2637585B01	
		PUSH-OP bail bracket assembly	15/25/35 kV	2638772B03M	⑥
		PUSH-OP bracket alignment fixture	15/25/35 kV	2637904C01	
		Grounding tab	15/25/35 kV	0739658A02	

① Clamp must be ordered separately.

② Bushing includes gasket and shipping cap.

③ Clamp and gasket must be ordered separately.

④ Clamp, gasket, and bracket assembly must be ordered separately.

⑤ For 35 kV (150 kV BIL), add **"S"** to end of the part number.

⑥ Latch handle standard on left side. For latch handle on right side, change digit **10** from a **"3"** to a **"5"**.

Fusing

Eaton offers Cooper Power series fuses under multiple trade names: Cooper, Kearney, McGraw-Edison and Combined Technologies™. We have the broadest range of overcurrent protective devices to meet your application needs.

Bay-O-Net fuse assembly

In the late 1960s, we introduced the Bay-O-Net assembly and links to the industry for pad-mounted transformer protection. The Bay-O-Net fuse has grown into the industry standard protection package for single- and three-phase transformers. The assembly combines the ease of hotstick operation with the safety of deadfront construction and is used with an isolation link to prevent line personnel from closing into a fault when replacing a blown Bay-O-Net link. Alternately, a back-up, current-limiting fuse can be used in place of the isolation link to increase interrupting ratings to 50 kA.

Flapper™ valve Bay-O-Net assembly specification information

Bay-O-Net assembly shall include a valve that will shut when the inner holder is removed from the housing and minimize oil from spilling out of the Bay-O-Net assembly.

TransFusion™ coordination program

This free, web-based, easy-to-use coordination tool makes transformer protective device selection for pad-mounted transformers effortless. By simply inputting a few pieces of data and selecting the desired level of protection, you can quickly find the right Eaton product within its Cooper Power series fuse product line, whether it's the ELSP fuse, Bay-O-Net fuse, or MagneX interrupter suitable for your application. The TransFusion coordination program provides you the flexibility of trying various combinations before deciding on the one that best fits your application needs. A simple click of the print button allows you to print your TCC curves and part numbers.

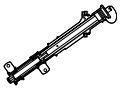
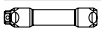
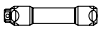
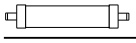
Go to this site for your coordination program **www.coopertransfusion.com**.

Table 63. ELSP fuse combinations ①

Voltage (kV)	Current rating (A)	ELSP part numbers	Description
8.3	30	CBUC08030C100	8.3 kV 30 A
	40	CBUC08040C100	8.3 kV 40 A
	50	CBUC08050C100	8.3 kV 50 A
	65	CBUC08065C100	8.3 kV 65 A
	80	CBUC08080C100	8.3/9.9 kV 80 A
	100	CBUC08100C100	8.3/9.9 kV 100 A
	125	CBUC08125C100	8.3 kV 125 A
	150	CBUC08150D100	8.3 kV 150 A
	165	CBUC08165D100	8.3 kV 165 A
	180	CBUC08180D100	8.3 kV 180 A
	250	CBUC08250D100	8.3 kV 250 A
9.9	30	CBUC09030C100	9.9 kV 30 A
	40	CBUC09040C100	9.9 kV 40 A
	50	CBUC09050C100	9.9 kV 50 A
	65	CBUC09065C100	9.9 kV 65 A
15.5	30	CBUC15030C100	15.5 kV 30 A
	40	CBUC15040C100	15.5 kV 40 A
	50	CBUC15050C100	15.5 kV 50 A
	65	CBUC15065C100	15.5 kV 65 A
	80	CBUC15080C100	15.5/17.2 kV 80 A
	100	CBUC15100C100	15.5/17.2 kV 100 A
	125	CBUC15125C100	15.5/17.2 kV 125 A
	150	CBUC15150D100	15.5 kV 150 A
	165	CBUC15165D100	15.5 kV 165 A
	180	CBUC15180D100	15.5 kV 180 A
17.2	30	CBUC17030C100	17.2 kV 30 A
	40	CBUC17040C100	17.2 kV 40 A
	50	CBUC17050C100	17.2 kV 50 A
	65	CBUC17065C100	17.2 kV 65 A
23	30	CBUC23030C100	23 kV 30 A
	40	CBUC23040C100	23 kV 40 A
	50	CBUC23050C100	23 kV 50 A
	65	CBUC23065C100	23 kV 65 A
	80	CBUC23080C100	23 kV 80 A
	100	CBUC23100C100	23 kV 100 A
	125	CBUC23125D100	23 kV 125 A
	150	CBUC23150D100	23 kV 150 A
	165	CBUC23165D100	23 kV 165 A
38	50	CBUC38050D100	38 kV 50 A
	65	CBUC38065D100	38 kV 65 A
	80	CBUC38080D100	38 kV 80 A
	100	CBUC38100D100	38 kV 100 A
	120	CBUC38120D100	38 kV 120 A
	140	CBUC38140D100	38 kV 140 A

① Catalog CA132013EN provides detailed information for the ELSP current-limiting back-up fuse.

Table 64. Bay-O-Net fuse assembly and link base part numbers

	Catalog section	Description	kV class	Base part number	Notes
Side- and cover-mounted Bay-O-Net fuse assembly					
	CA132015EN	Flapper side wall-mount	23 kV	4000361C99FV	
		Side wall		4000361C99MC	
		Without flapper valve			
		Cover-mount (short)		4001177B51MC	
		Cover-mount (long)		4001177B53MC	
		Silver-plated	38 kV	4038380B03M	
Current sensing Bay-O-Net fuse link					
	CA132009EN	6 A		4000353C04	① ③ ④
		10 A		4000353C06	① ③ ④
		15 A		4000353C08	① ③ ④
		25 A		4000353C10	① ③ ④
		40 A		4000353C12	① ③ ④
		65 A		4000353C14	① ③ ④
		100 A		4000353C16	① ③ ④
		140 A		4000353C17	① ③ ④
Dual sensing Bay-O-Net fuse link					
	CA132010EN	3 A		4000358C03	① ③ ④
		8 A		4000358C05	① ③ ④
		15 A		4000358C08	① ③ ④
		25 A		4000358C10	① ③ ④
		50 A		4000358C12	① ③ ④
		65 A		4000358C14	① ③ ④
		100 A		4000358C16CB	① ③ ④
		140 A		4000358C18CB	① ③ ④
Dual element Bay-O-Net fuse link					
	CA132011EN	5 A		4038108C03	① ③ ④
		6 A		4038108C04	① ③ ④
		8 A		4038108C05	① ③ ④
		12 A		4038108C06	① ③ ④
		15 A		4038108C07	① ③ ④
		25 A		4038108C09	① ③ ④
		40 A		4038108C11	① ③ ④
		50 A		4038108C12	① ③ ④
		65 A		4038108C14	① ③ ④
High ampere overload Bay-O-Net fuse link					
	CA132007EN	65 A		4038361C03CB	② ③ ④
		100 A		4038361C04CB	② ③ ④
		125 A		4038361C05CB	② ③ ④
		Shorting bar (solid link)		4038361C10CB	② ③ ④
Bay-O-Net fuse link					
	CA132006EN	10 A	38 kV	4000380C06CB	
		15 A		4000380C08CB	
		25 A		4000380C10CB	
		30 A		4000380C11CB	
		40 A		4000380C12CB	
		65 A		4000380C14CB	
Isolation link 23 kV (maximum)					
	CA132012EN			3001861A_ _ _	③
ELSG full range					
	CA132020EN	Current-limiting fuse		359_ _ _ _M_ _M	
ELSP backup					
	CA132013EN	Current-limiting fuse		CBUC_ _ _ _ _ _ (see **Table 63**)	

① Add suffix **"B"** to order individual fuse; add **"M"** to order bag of 50.

② When ordering high ampere overload Bay-O-Net fuse link, a silver-plated Bay-O-Net fuse assembly, part number **4038804B03M**, must be ordered.

③ To coordinate an isolation link with a Bay-O-Net fuse when an ELSP fuse is not used, see catalog section 240-47.

④ For recommended ELSP backup CLF ratings, see catalog section 240-98 or TransFusion Coordination Program.

MagneX single-phase interrupter

Eaton offers a solution to the utility sector wanting to eliminate oil exposure in the field when operation occurs due to transformer overloads with its Cooper Power series MagneX™ single-phase interrupter. There is no need for replacement fuse links, resulting in economic value to the user. In addition, a MagneX interrupter in series with a back-up, current-limiting fuse offers additional protection.

Table 65. Voltage ratings and characteristics

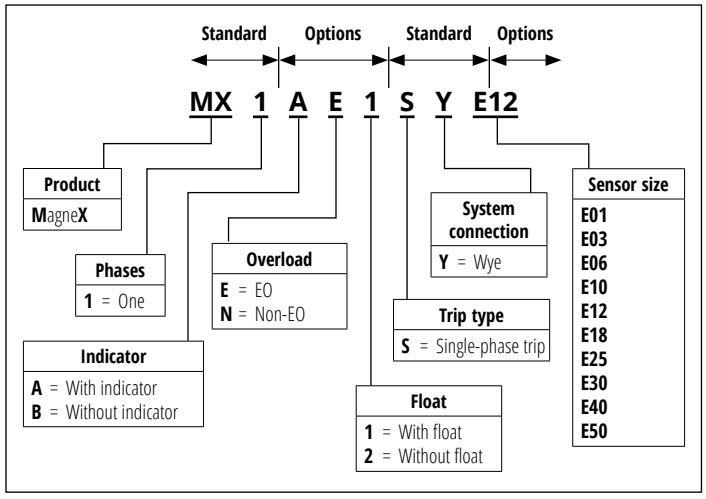
Description	Rating
Impulse 1.2x50 microsecond wave	150 kV
60 Hz-1 minute voltage withstand	50 kV
Continuous current rating	42 A
Switching load currents, 200 times	42 A
Magnetizing current switching	200 times

Note: Continuous current ratings and dielectric testing are in accordance with ANSI/IEEE Std C57.12™. Switching and Fault Close IEEE Std C37.41™. Overload Protection IEEE Std C57.41™.

Table 66. Interrupting rating

Voltage kV-LG	rms symmetrical (A)	rms asymmetrical (A)
8.3	2800	4200
15.5	1500	2250
23.0	500	750

Table 67. MagneX significant digit catalog number system



Example: To order a single-phase MagneX interrupter without indicator, single-phase trip, with float and E12 sensor, the catalog number would be **MX1BN1SYE12** (refer to catalog section 240-34).

To select the correct isloation link, use **Table 68** to cross reference the isolation link to the selected MagneX sensor. An isolation link is required if the MagneX is not in series with a current-limiting fuse.

Table 68. Isolation link—MagneX correlation chart

Sensor number	Isolation link
E01	3637803B01
E03	3637803B08
E06	3637803B02
E10	3637803B09
E12	3637803B10
E18	3637803B03
E25	3637803B03
E30	3637803B05
E40	3637803B05
E50	3637803B05

Ordering information

Use **Table 70** to determine the correct MagneX interrupter suffix (sensor number) for the application.

Use **Table 67** to determine the catalog number.

When ordering a MagneX interrupter with a standard handle, a hardware kit must be ordered separately. Use **Table 69** to determine the hardware kit catalog number.

To select the correct isolation link, use **Table 68** to cross reference the isolation link to the selected MagneX interrupter. An isolation link is required if the MagneX is not in series with a current-limiting fuse.

Example: MagneX interrupter with an emergency overload, indicator, and a float in series with an ELSP current-limiting fuse for a single-phase, 7.2 kV phase-to-ground, 25 kVA transformer, specify:

- 1—40 A ELSP fuse 3543040M61M
- 1—MagneX interrupter MX1AE1SYE06
- 1—Hardware kit (with emergency overload, indicator, and no adapter) 3638535A05

See the following catalog sections for further information:

ELSP fuse holder: TD132003EN

ELSP current-limiting backup fuse: CA132013EN

MagneX with current-limiting fuse

To order a MagneX interrupter and current-limiting fuse combination, see **Table 69**.

Table 69. Hardware kits

Description	Catalog number
Without emergency overload	**3638535A04**
With emergency overload	**3638535A05**
With adapter without emergency overload	**3638535A07**
With adapter with emergency overload	**3638535A08**
Hotstick adapter only	**3639585A01**

Using TCC curves

To determine or confirm the MagneX interrupter will coordinate with upstream and downstream system requirements, use the time-current characteristic curves (see R240-91-310). For full size TCC curves, contact your Eaton representative.

Table 70. Single-phase transformer (phase-to-ground) applications correlation chart

Primary voltage kV															
kVA/kV	**2.4**	**4.16**	**4.8**	**6.9**	**7.2**	**7.62**	**7.97**	**8.32**	**12.00**	**12.47**	**13.2**	**13.8**	**14.4**	**16.34**	**19.92**
10	E06	E06	E03	E03	E03	E03	E03	E03	E01	E01	E01	E01	E01	E01	E01
15	E10	E06	E06	E03	E03	E03	E03	E03	E03	E03	E03	E03	E03	E01	E01
25	E18	E10	E10	E06	E06	E06	E06	E06	E03	E03	E03	E03	E03	E03	E03
37.5	E25	E18	E12	E10	E10	E10	E10	E10	E06	E06	E06	E06	E06	E03	E03
50	E30	E18	E18	E12	E12	E12	E12	E10	E06	E06	E06	E06	E06	E06	E06
75	E50	E30	E25	E18	E18	E18	E18	E18	E10	E10	E10	E10	E10	E06	E06
100	E50	E40	E30	E25	E18	E18	E18	E18	E12	E12	E12	E12	E12	E10	E10
167	—	E50	E50	E40	E40	E40	E40	E30	E18	E18	E18	E18	E18	E18	E12
250	—	—	—	E50	E50	E50	E50	E50	E30	E30	E30	E30	E30	E25	E18
333	—	—	—	—	—	—	—	E50	E40	E40	E40	E40	E40	E30	E25
500	—	—	—	—	—	—	—	—	E50	E50	E50	E50	E50	E50	E40

Notes: Recommendations are based on:

- Minimum trip curves, and maximum trip and clear curves, R240-91-310
- Deration factor of 0.5% per °C above 25 °C
- Allowable loading greater than 140% for four hours in accordance with ANSI/IEEE Std C57.91.1981™ guide for loading distribution transformers, Table 6

Table 71. Recommended MagneX interrupter sensor and ELSP current-limiting fuse combinations

	8.3 kV			**15.5 kV**		**23 kV**
Nominal single-phase (kV phase-to-ground)	**2.4**	**4.16–4.8**	**6.9–8.0**	**12.0–14.4**	**16.34**	**19.92**
10 kVA						
ELSP rating with emergency overload	30	30	30	30	30	30
MagneX element	E06	E03	E03	E01	E01	E01
15 kVA .						
ELSP rating with emergency overload	50	30	30	30	30	30
MagneX element	E10	E06	E03	E03	E01	E01
25 kVA						
ELSP rating with emergency overload	80	50	30	30	30	30
MagneX element	E18	E10	E06	E03	E03	E03
37.5 kVA						
ELSP rating with emergency overload	100	80	50	30	30	30
MagneX element	E18	E12	E10	E06	E03	E03
50 kVA						
ELSP rating with emergency overload	150	100	50	30	30	30
MagneX element	E30	E18	E12	E06	E06	E03
75 kVA						
ELSP rating with emergency overload	150	125	100	40	30	30
MagneX element	E40	E25	E18	E10	E06	E06
100 kVA						
ELSP rating with emergency overload	250	165	100	50	40	30
MagneX element	E50	E40	E18	E12	E10	E06
167 kVA						
ELSP rating with emergency overload	—	180	150	80	80	50
MagneX element	—	E50	E40	E18	E18	E12

Notes: Table shows minimum recommended ELSP fuse ratings. Recommended ELSP backup fuse (described in catalog section CA132013EN) will coordinate with the MagneX interrupter and melt on internal transformer faults. The MagneX interrupter recommendations are based on:

- Minimum trip curves, and maximum trip and clear curves R240-91-310
- Deration factor of 0.5% per °C above 25 °C
- Allowable loading greater than 140% for four hours in accordance with IEEE Std C57.41™-1981 guide for loading distribution transformers, Table 6.

MagneX three-phase interrupter

The three-phase MagneX interrupter offers a solution to the utility wanting to eliminate oil exposure in the field when operation occurs due to transformer overloads. There is no need for replacement fuse links, resulting in economic value to the user. In addition, a MagneX interrupter in series with a back-up, current-limiting fuse offers additional protection.

MagneX interrupter specification information

- Breaker shall be installed on the primary side of transformer
- Breaker shall have the capability to energize and de-energize the three-phase transformer by one hotstick operation

Table 72. Voltage ratings and characteristics

Description	kV	Rating
Impulse 1.2x50 microsecond wave	150	—
60 Hz-1 minute voltage withstand	50	—
Continuous current rating	—	42
Switching load currents	—	42

Note: Continuous current ratings and dielectric testing are in accordance with IEEE Std C57.12™. Switching and fault close IEEE Std C37.41™. Overload protection IEEE Std C57.41™.

Table 73. Interrupting rating

Voltage kV-LG	rms symmetrical (A)	rms asymmetrical (A)
8.3	2800	4200
15.5	1500	2250
23.0	500	750

Table 74. Hardware kits

Description	Catalog number
Standard handle kit and hardware without emergency overload	**3638535A09**
Hotstick adapter	**3639585A01**

Ordering information

Use **Table 75** to determine the catalog number.

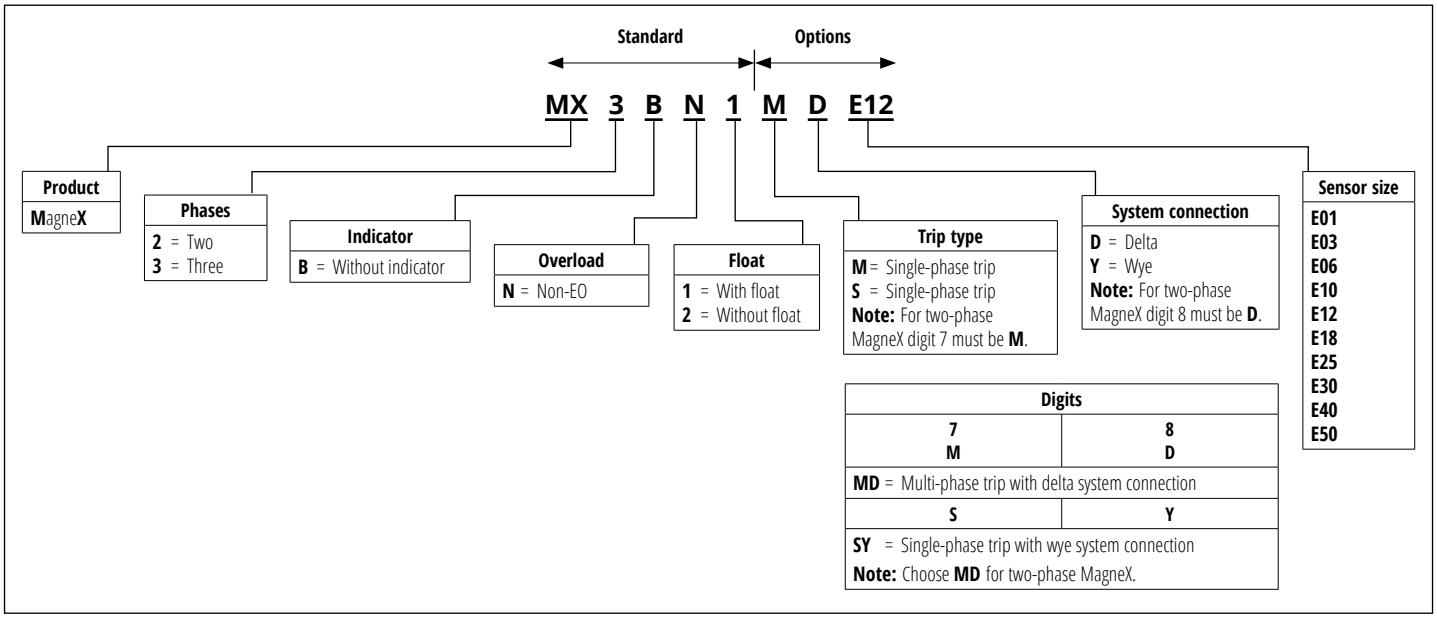
When ordering a MagneX interrupter with a standard handle, a hardware kit must be ordered separately. Use **Table 74** to determine the hardware kit catalog number.

TransFusion coordination program

This free, web-based, easy-to-use coordination tool makes transformer protective device selection for pad-mounted transformers effortless. By simply inputting a few pieces of data and selecting the desired level of protection, you can quickly find the right Eaton product within its Cooper Power series fuse product line, whether it's the ELSP fuse, Bay-O-Net fuse, or MagneX interrupter suitable for your application. The TransFusion coordination program provides you the flexibility of trying various combinations before deciding on the one that best fits your application needs. A simple click of the print button allows you to print your time current curves and part numbers.

Go to this site for your coordination program **www.coopertransfusion.com**.

Table 75. MagneX significant digit catalog number system



Example: To order a two- or three-phase MagneX interrupter without indicator, single- and three-phase trip, with float and E12 sensor, the catalog number would be **MX3BN1SYE12** (refer to catalog section 240-33).

Two- and three-phase MagneX interrupter operation

Figure 49 demonstrates the circuit diagram for the three-phase MagneX interrupter with single-phase sensor, single-phase trip. The three-phase MagneX interrupter with single-phase sensor, single-phase trip contains one sensor per phase. It reacts to fault currents on one phase and will cause tripping of that phase only. The MagneX interrupter then can be reset via the single operating handle by opening all three phases and closing all phases back in simultaneously.

Figure 50 demonstrates the circuit diagram for the three-phase MagneX interrupter with single-phase sensor, three-phase trip, containing one sensor in two of the three phases. This product should only be applied to delta-connected primary transformers, where any fault current flow in one phase will also flow in an adjacent phase. It reacts to fault currents on one phase and will cause tripping of all three phases. The MagneX interrupter then can be reset via the single operating handle by opening all three phases and closing all phases back in simultaneously.

The three-phase MagneX interrupter with single-phase sense, three-phase trip should always be used in series with at least one backup current-limiting fuse in each of the three phases.

The backup current-limiting fuses (see ELSP catalog section 240-98) provide high-current interruption capability.

Figure 51 shows the circuit diagram for the two-phase MagneX interrupter. The two-phase MagneX interrupter was specifically designed for single-phase, two bushing transformers, where disconnection of both bushings is desired following fault/overload detection. The MagneX interrupter will react to a fault sensed in either leg of the transformer primary. Interruption takes place in both interruption chambers simultaneously, disconnecting both legs of the transformer from the circuit.

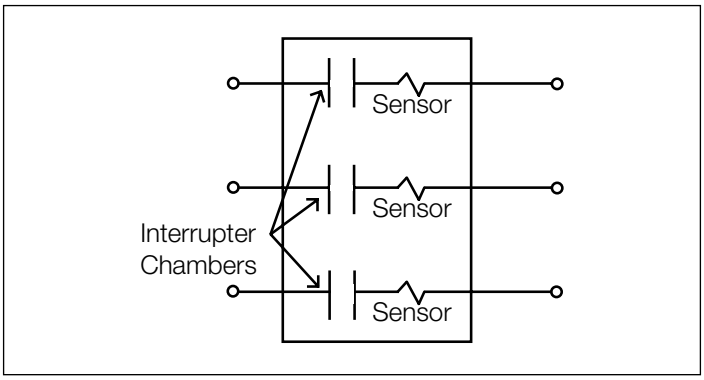


Figure 49. Three-phase MagneX interrupter, single-phase sensor, single-phase trip

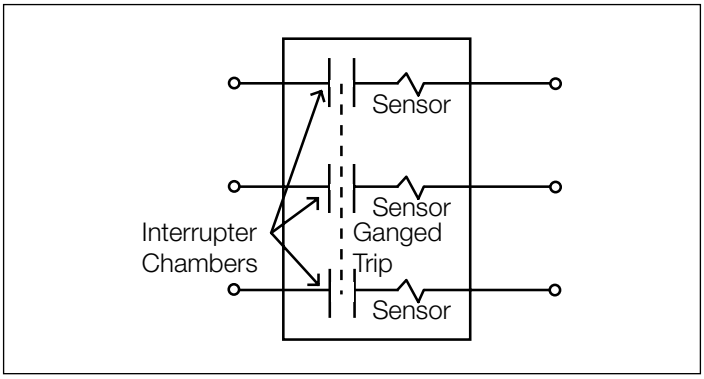


Figure 50. Three-phase MagneX interrupter, single-phase sensor, three-phase trip

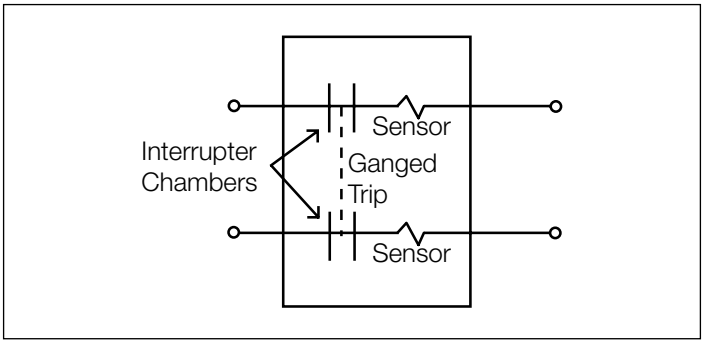


Figure 51. Two-phase MagneX interrupter

Faulted circuit indicators

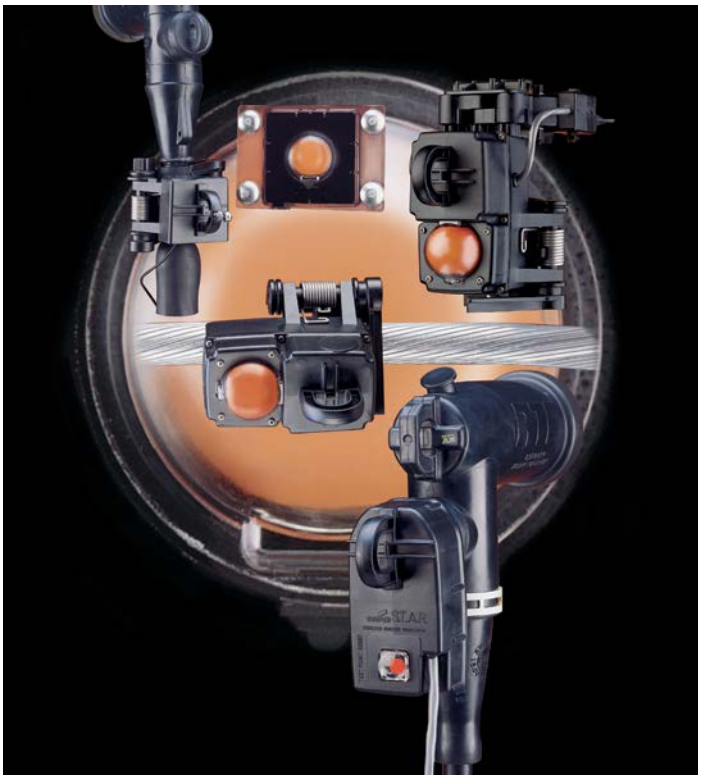
Eaton offers a wide variety of faulted circuit indicators (FCIs) ranging from basic circuitry models in its Cooper Power series delayed reset style to the more sophisticated circuitry of the test point reset and electrostatic reset types. Eaton's Cooper Power series S.T.A.R.™ faulted circuit indicator product line offers six basic types of FCIs and each unit is tailored to be the most reliable for the intended application. Each type varies by reset method and the type of system it connects to.

Standard S.T.A.R. features include:

- **LO/HI trip rating selection**—Innovative trip ratings greatly simplify FCI selection application
- **Current transformer sensing design**—For maximum trip accuracy and elimination of false tripping on adjacent cable events
- **Inrush restraint**—Eliminates false tripping by ignoring inrush currents caused by reclosing operations of protective devices on the system. A dead time of 200 ms will activate the inrush restraint feature
- **Low-pass filter technology**—Prevents false tripping due to capacitive cable discharge
- **Design tested to IEEE Std 495™ and manufactured in ISO® 9001 facility**—To ensure highest performance and quality

In addition to the above features, Eaton's Cooper Power sries PATHFINDER™ FCIs include:

- **Variable trip technology**—Single trip rating for one-size-fits-all application
- **Auto adjusting trip technology**—Detects average load current over time above or below 75 A and adjusts trip rating to 200 A or 800 A automatically
- **Self adjusting reset restraint (test point mounted model)**—"Learns" your system voltage and won't allow false resetting due to backfeed voltage
- **BLOC™**—Battery life optimization circuitry for maximizing battery life
- **Remote fiber optic cable (test point mounted model)**—Optional remote for convenient remote indication



PATHFINDER test point faulted circuit indicator specification information

- Fault indication on minimum 200 A di/dt within 100 ms (variable trip)
- Response time of 3 rms or less, for coordination with current-limiting fuses (fixed trip)
- Inrush restraint to prevent false tripping due to current inrush conditions
- Low pass filter specifically tuned to prevent false tripping on high frequency transients, but to allow proper indication on systems using current-limiting fuses
- Temperature compensation for accurate and reliable performance over a temperature range of –40 °C to +85 °C
- Reset restraint to prevent false reset due to excessive voltage feedback levels up to 80% of nominal system voltage (STVT)
- Installation using single hotstick

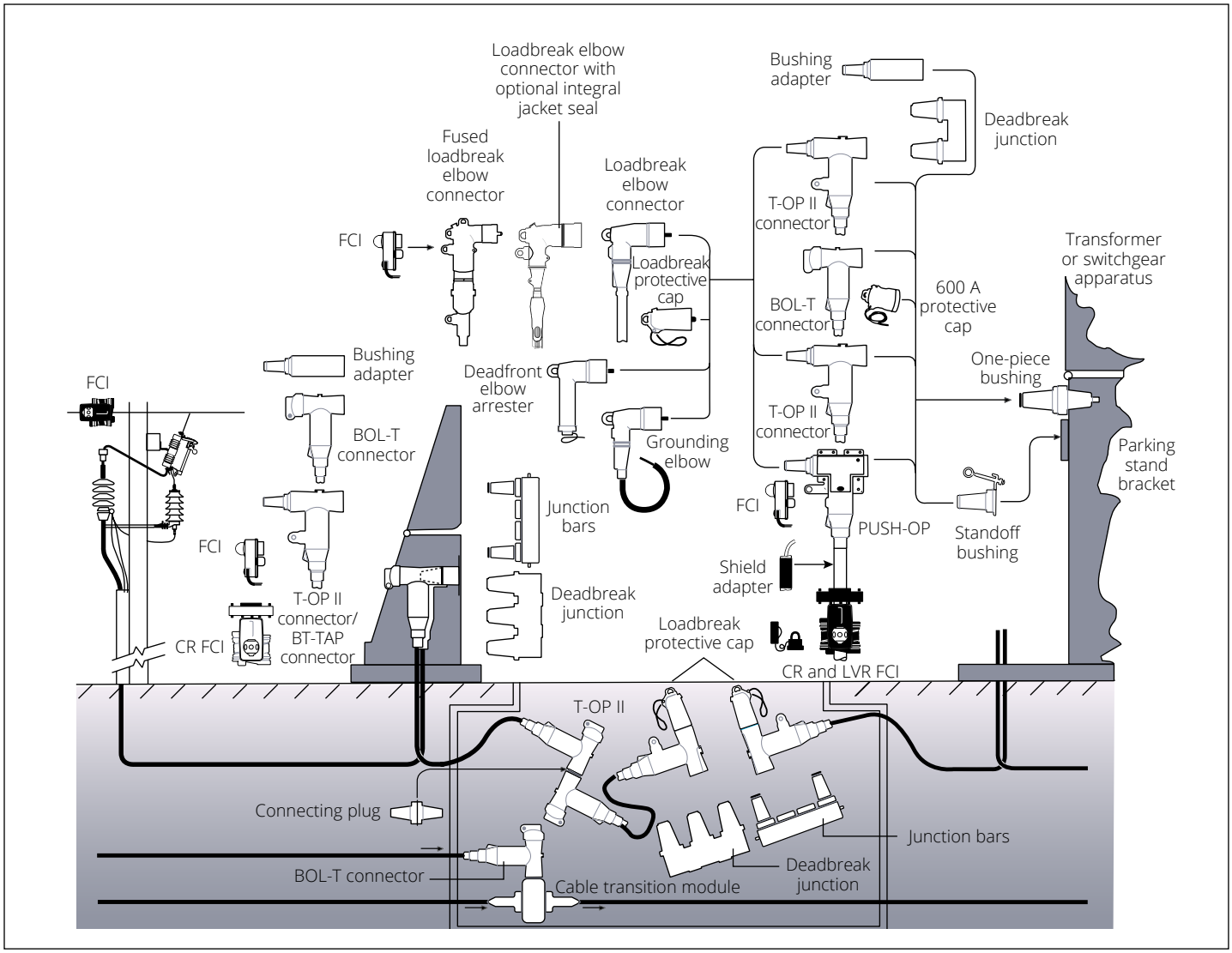
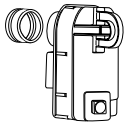
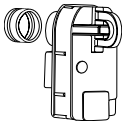
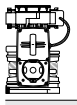
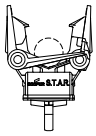


Figure 52. Bushing and connector features

Table 76. For 15 kV, 25 kV and 35 kV Class

	Catalog section	Description	Base part number	Notes
Test point reset				
	CA320002EN	Adapter kit	STAK	④
		High (HI) trip	STHI	①
		High (HI) trip with auxiliary contact	STHIA	①
		High (HI) trip with adapter kit	STHIK	
		Low (LO) trip	STLO	①
		Low (LO) trip with auxiliary contact	STLOA	①
		Low (LO) trip with adapter kit	STLOK	
Pathfinder test point reset				
	CA320003EN	Variable trip	STVT	
		Variable trip with auxiliary contact	STVTA	
		Fiber optic remote cable (6 ft)	SFOC	②
		Reset tool	SMRT	④
		Adapter kit	STAK	④
Low-voltage reset				
	CA320004EN	High (HI) trip	SLHI	③
		High (HI) trip with auxiliary contact	SLHIA	③
		Low (LO) trip	SLLO	③
		Low (LO) trip with auxiliary contact	SLLOA	③
Electrostatic reset				
	CA320005EN	High (HI) trip	SEHI	
		High (HI) trip with LED (light emitting diode) indication	SEHIL	
		Low (LO) trip	SELO	
		Low (LO) trip with LED (light emitting diode) indication	SELOL	
Current reset				
	CA320008EN	High (HI) trip	SCHI	①
		Low (LO) trip	SCLO	①
		High (HI) trip with auxiliary contacts	SCHIA	①
		Low (LO) trip with auxiliary contacts	SCLOA	①
Pathfinder current reset				
	CA320009EN	Variable trip	SCVT	①
Test point hot line indicator				
	CA320010EN	Hot line indicator	STHL	
		Adapter kit	STAK	④
Programmable delayed reset				
	CA320011EN	Auto adjusting trip, programmable reset 2-, 4-, 8-, 24-hour reset	SDOH	
		Reset tool	SMRT	④

① To add remote FISHEYE™ display, add an **"R"** as the last character in the part number, or a **"S"** for the small remote display.

② SFOC (Star Fiber Optic Cable) standard length is 6 ft. Add **"09F"** for 9 ft fiber optic display, **"12"** for 12 ft, **"25"** for 25 ft.

③ To add universal power supply (120, 208 or 277 Vac power connection), add a **"U"** as the last character in the part number.

④ Accessories to be ordered separately.

Faulted circuit indicators

Table 77. Faulted circuit indicators

Type description	Typical system application	Physical mounting location	Voltage/current requirements
Test point reset	Underground	On the test point of the connector	Minimum 5 kV L-G (2.4 kV for Pathfinder)
Low-voltage reset	Underground	On the URD shielded cable below the connector	A secondary voltage source (minimum 105 V)
Electrostatic reset	Overhead	On bare or insulated non-shielded cable	Minimum 6.9 kV L-G
Programmable delayed reset	Overhead	On overhead bare or insulated non-shielded cable	None (Lithium battery powered with programmable reset)
Current reset	Underground and overhead	On the URD shielded cable below the connector and on overhead bare or insulated non-shielded cable	Minimum 2.4 A continuous

Table 78. Faulted circuit indicator significant digit catalog number system

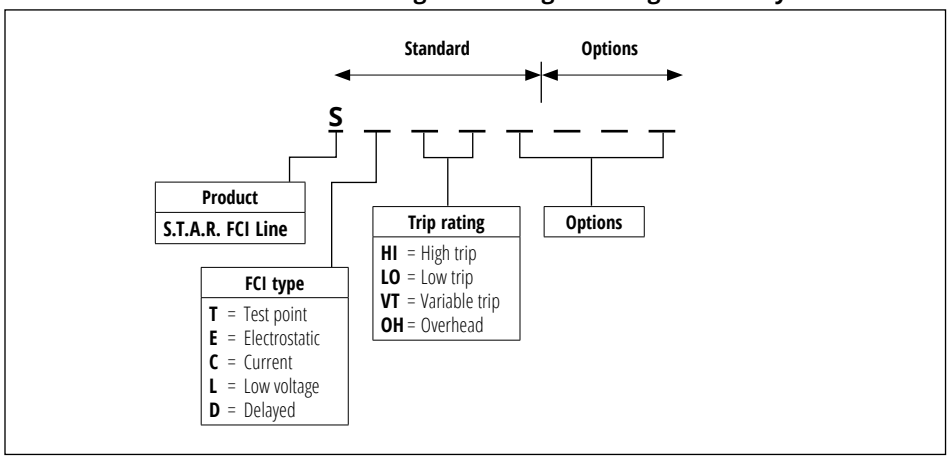


Table 79. S.T.A.R. faulted circuit indicators features

Model/type	Test point reset	Pathfinder test point	Low-voltage reset	Electrostatic reset	Programmable delayed reset	Current reset	Pathfinder current reset
Base part numbers	**STLO STHI**	**STVT**	**SLLO SLHI**	**SELO SEHI**	**SDOH**	**SCLO SCHI**	**SCVT**
Catalog section	**CA320002EN**	**CA320003EN**	**CA320004EN**	**CA320005EN**	**CA320011EN**	**CA320008EN**	**CA320009EN**
Application							
Overhead				•	•	•	•
Underground/pad-mounted	•	•	•			•	•
Trip rating							
High/low trip rating	•		•	•		•	
Variable trip rating (PATHFINDER)		•					•
Auto adjusting trip					•		
Standard features							
Inrush restraint	•	•	•	•	•	•	•
Temperature compensation	•	•	•	•			
Low pass filter	•	•	•	•	•	•	•
Battery life optimization circuitry		•			•		
Reset restraint		•	•				
Single hot-stick installation	•	•	•	•	•	•	•
Automatic reset	•	•	•	•	•	•	•
Open-core CT design	•	•	•	•	•		
Closed-core CT design						•	•
Display type							
LED display		•		Optional	•		
FISHEYE display			•	•		•	•
Flag display	•						
Available options							
Auxiliary contacts for SCADA	•	•	•				•
Remote FISHEYE display	•		Standard			•	•
Small remote display	•					•	•
Remote fiber optic display		•					
Manual testing/reset tool		•			•		
Test point adapter kit	•	•					
Universal power supply			•				
Power requirements							
Battery powered		•			•		
Line powered	•			•		•	•
Secondary source			•				
Externally replaceable battery							
Reset requirements							
2.4 kV L-G		•					
5 kV L-G	•						
7.2 kV L-G				•			
90 Vac			•				
2.4 A continuous						•	
2.0 A continuous							•
Other					Programmable		

Sectionalizing cabinets

Eaton's Cooper Power series versatile single- and three-phase SecTER™ sectionalizing terminals are designed as cable sectionalizing centers, or as permanent or temporary transformer pad covers.

The aesthetic low-profile design provides unobtrusive installations for sectionalizing, tapping or terminating underground cable.

The top-hinged diagonally cut removable cover and cabinet are designed for easy one man opening. Recessed door and low sill provides improved access to interior terminations. A door stop prevents the door from accidentally closing.

TGIC powder coating exceeds ANSI coating requirements.

Standard Munsell Green 7GY3.29/1.5 12-gauge mild steel designs with standard stainless steel hardware are available. For highly corrosive environments, stainless steel or aluminum are also available. Continuous seam welding ensures a sturdy smooth cabinet.

Multiple configurations are available. A parking lot design is available on most SecTER cabinets, which provides multiple locations for parking standoffs, portable feedthrus, and other cable accessories. A welded-on ground nut is also provided for each phase.

Universal mounting plates are painted light grey for optimum visibility and accept 200 A or 600/900 A, two-, three-, or four-position junctions with u-straps and Eaton's Cooper Power series Cleer 600 A loadbreak connectors. Standard SecTER designs are available in a variety of sizes to suit typical applications and can also be ordered with junctions factory installed.

Optional features

- 200 A loadbreak junctions installed
- 600 A deadbreak junctions installed
- Cleer 600 A loadbreak connectors installed
- Available in grey, tan, or brown colors
- Angled mounting plates
- 3/8-inch copper ground rod installed
- Mild steel base extensions
- Fiberglass ground sleeves

Ordering information

Select size of SecTER cabinet from **Table 80** based on junctions required.

Build SecTER catalog number from **Table 82** based on size selected from **Table 80** and options required.

Fiberglass ground sleeves are ordered separately. If ground sleeve is required, select catalog number from **Table 84**.

Mild steel base extensions are ordered separately. If base extension is required, select catalog number from **Table 85**.

Note: Width and depth dimensions of ground sleeves or base extensions must be matched to SecTER cabinet selected

Table 80. SecTER cabinet matrix

		Single-phase		Three-phase				
	Cabinet size	**24**	**30**	**48**	**6A**	**66**	**84**	**98**
	Junctions							
Loadbreak								
15 kV	2-way	O	S	S	O	O	O	O
	3-way	O	S	O	S	O	O	O
	4-way	O	S			O	S	O
25 kV	2-way	O	S	O	S	O	O	O
	3-way	O	S	O	S	O	O	O
	4-way	O	S			O	S	O
35 kV	2-way		S			O	S	O
	3-way		S			O	S	O
	4-way		S				O	S
Deadbreak								
15/25 kV	2-way	O	S	O	S	O	O	O
	3-way	O	S	O	O	O	S	O
	4-way	O	S			O	S	O
35 kV	2-way		S			O	S	O
	3-way		S			O	S	O
	4-way							S
Cleer								
15 kV			S			S	O	O
25/28 kV			S			S	O	O
Variable junction								
15/25 kV	2-way	O	S	O		S	O	O
	3-way	O	S	O		O	S	O
	4-way	O	S			O	S	O
	5-way	O	S			O	O	S
			S				O	S

"S" = Standard. Recommended for best balance of size (footprint) and operability (frontplate space and standoff pockets) for typical applications.
"O" = Optional. Also available if the application requires compromise in size and/or operability.

Note: Width and depth dimensions of ground sleeves or base extensions must be matched to SecTER cabinet selected.

Table 81. Standoff pocket placement

	Standoff pocket placement	
Cabinet size	**Below mtg. plates**	**In-line with mtg. plates**
24	Yes	No
30	Yes	Yes
48	Yes	No
6A	Yes	Yes
66	Yes	No
84	Yes	Yes
98	Yes	Yes
Variable junction cabinet		
24	Yes	No
30	Yes	No
48	Yes	No
6A	N/A	N/A
66	Yes	No
84	Yes	No
98	Yes	No

Table 82. SecTER significant digit catalog numbering system

SEC _ _ _ _ _ 3 _ _ _ _ _ _ _ _ _ _

SEC	
SEC	

Phases	
1	= Single-phase
3	= Three-phase

Width	
24	= 24 inches (single-phase only)
30	= 30 inches (single-phase only)
48	= 48 inches (three-phase only)
66	= 66 inches (three-phase only)
6A	= 66 inches (three-phase only)
84	= 84 inches (three-phase only)
98	= 98 inches (three-phase only)

Depth	
2	= 22 inches
3	= 30 inches (98 inches wide only)

Height	
3	= 30 inches

Mounting plate	
F	= Flat (standard)

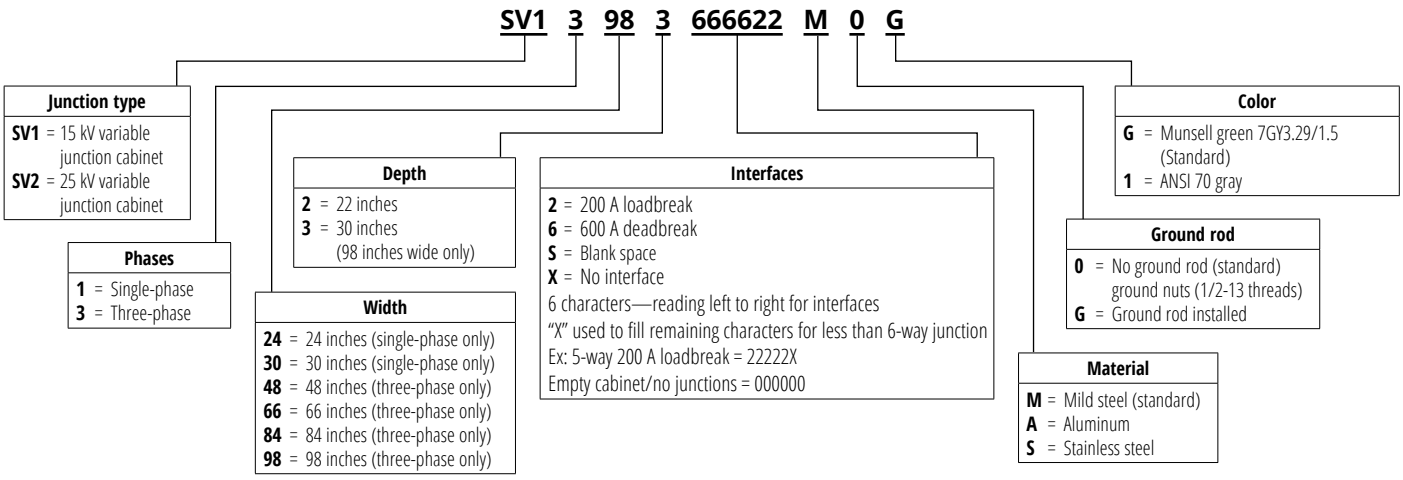
Junctions	
0000	= No junctions (standard)
2152	= 15 kV, 2-way 200 A junctions w/U-straps
2153	= 15 kV, 3-way 200 A junctions w/U-straps
2154	= 15 kV, 4-way 200 A junctions w/U-straps
2252	= 25 kV, 2-way 200 A junctions w/U-straps
2253	= 25 kV, 3-way 200 A junctions w/U-straps
2254	= 25 kV, 4-way 200 A junctions w/U-straps
2282	= 28 kV, 2-way 200 A junctions w/U-straps
2283	= 28 kV, 3-way 200 A junctions w/U-straps
2284	= 28 kV, 4-way 200 A junctions w/U-straps
2352	= 35 kV, 2-way 200 A junctions w/U-straps
2353	= 35 kV, 3-way 200 A junctions w/U-straps
2354	= 35 kV, 4-way 200 A junctions w/U-straps
6252	= 15/25 kV, 2-way 600 A junctions w/U-straps
6253	= 15/25 kV, 3-way 600 A junctions w/U-straps
6254	= 15/25 kV, 4-way 600 A junctions w/U-straps
6352	= 35 kV, 2-way 600 A junctions w/U-straps, 150 kV BIL
6353	= 35 kV, 3-way 600 A junctions w/U-straps, 150 kV BIL
6354	= 35 kV, 4-way 600 A junctions w/U-straps, 150 kV BIL
6382	= 35 kV, 2-way 600 A junctions w/U-straps, 200 kV BIL
6383	= 35 kV, 3-way 600 A junctions w/U-straps, 200 kV BIL
6384	= 35 kV, 4-way 600 A junctions w/U-straps, 200 kV BIL
9252	= 15/25 kV, 2-way 900 A junctions w/U-straps
9253	= 15/25 kV, 3-way 900 A junctions w/U-straps
9254	= 15/25 kV, 4-way 900 A junctions w/U-straps
9352	= 35 kV, 2-way 900 A junctions w/U-straps, 150 kV BIL
9353	= 35 kV, 3-way 900 A junctions w/U-straps, 150 kV BIL
9354	= 35 kV, 4-way 900 A junctions w/U-straps, 150 kV BIL
9382	= 35 kV, 2-way 900 A junctions w/U-straps, 200 kV BIL
9383	= 35 kV, 3-way 900 A junctions w/U-straps, 200 kV BIL
9384	= 35 kV, 4-way 900 A junctions w/U-straps, 200 kV BIL
CL15	= 15 kV, Cleer 600 A loadbreak junctions
CL25	= 25 kV, Cleer 600 A loadbreak junctions
CL28	= 28 kV, Cleer 600 A loadbreak junctions

Material	
M	= Mild steel (standard)
A	= Aluminum
S	= Stainless steel

Ground rod	
0	= No ground rod (standard) ground nuts (1/2-13 threads)
G	= Ground rod installed

Color	
G	= Munsell green 7GY3.29/1.5 (Standard)
1	= ANSI 70 gray

Table 83. Variable junction cabinet configurator



Note: Standard height is 30 inches and mounting plate is flat.

Fiberglass ground sleeves

Lightweight, corrosive-free ground sleeves provide ground level mounting base and underground cable compartment, allowing unrestricted movement of terminations.

Table 84. Fiberglass ground sleeve dimensional information in inches

Catalog number	Height	Width	Depth
18 inches high			
GS182422	18.0	24.0	22.0
GS183022	18.0	30.0	22.0
GS184822	18.0	48.0	22.0
GS186622	18.0	66.0	22.0
GS188422	18.0	84.0	22.0
GS189830	18.0	98.0	30.0
30 inches high			
GS302422	30.0	24.0	22.0
GS303022	30.0	30.0	22.0
GS304822	30.0	48.0	22.0
GS306622	30.0	66.0	22.0
GS308422	30.0	84.0	22.0
GS309830	30.0	98.0	30.0

Steel base extensions

Mild and stainless steel base extensions provide pad-mounted above ground cable compartment and can also be used with ground sleeves in applications where raising the SecTER cabinet to a greater height is required.

Table 85. Steel base extension dimensional information in inches

Catalog number	Height	Width	Depth
18 inches high			
SBE182422	18.0	24.0	22.0
SBE183022	18.0	30.0	22.0
SBE184822	18.0	48.0	22.0
SBE186622	18.0	66.0	22.0
SBE188422	18.0	84.0	22.0
SBE189830	18.0	98.0	30.0
24 inches high			
SBE242422	24.0	24.0	22.0
SBE243022	24.0	30.0	22.0
SBE244822	24.0	48.0	22.0
SBE246622	24.0	66.0	22.0
SBE248422	24.0	84.0	22.0
SBE249830	24.0	98.0	30.0

Note: Width and depth dimensions of ground sleeves or base extensions must be matched to SecTER cabinet selected.
To specify stainless steel base extension, add **"SS"** to the end of the catalog number.

Catalog and manual number guide by part prefix

Table 86. Part number catalog and manual references

Base part number/prefix	Product type	Sub-product	Catalog section	Manual
STAK	Faulted circuit indicator	FCI adapter kit	CA320002EN	—
STLO/STHI	Faulted circuit indicator	Test point reset	CA320002EN	MN320002EN
STVT	Faulted circuit indicator	Pathfinder test point reset	CA320003EN	MN320003EN
SFOC	Faulted circuit indicator	Pathfinder test point reset	CA320003EN	MN320004EN
SLLO/SLHI	Faulted circuit indicator	Low voltage reset	CA320004EN	MN320005EN
SELO/SEHI	Faulted circuit indicator	Electrostatic reset	CA320005EN	MN320006EN
SCLO/SCHI	Faulted circuit indicator	Current reset	CA320008EN	MN320009EN
SCVT	Faulted circuit indicator	Pathfinder current reset	CA320009EN	MN320010EN
STHL	Faulted circuit indicator	Test point hot line indicator	CA320010EN	MN320011EN
SDOH	Faulted circuit indicator	Programmable delayed reset	CA320011EN	MN320001EN
SMRT	Faulted circuit indicator	Reset tool	CA320011EN	—
323801	Underground surge arresters	15/25/35 kV deadfront elbow surge arrester	CA235025EN	S235-55-1
PLEA	Underground surge arresters	25 kV POSI-BREAK deadfront elbow surge arrester	CA235028EN	S235-55-1
3237	Underground surge arresters	15/25 kV MOV parking stand surge arrester	CA235027EN	MN235024EN
DCEA635	Underground surge arresters	35 kV Class deadfront elbow DirectConnect™ arrester	CA235026EN	MN235002EN
LE215	200 A loadbreak connectors	15 kV elbow	CA650062EN	MN650008EN
LEJ215	200 A loadbreak connectors	15 kV elbow with jacket seal	CA650062EN	MN650008EN
LE225	200 A loadbreak connectors	25 kV elbow	CA650098EN	MN650008EN
LEJ225	200 A loadbreak connectors	25 kV elbow with jacket seal	CA650098EN	MN650008EN
PLE225	200 A loadbreak connectors	25 kV POSI-BREAK elbow	CA650100EN	MN650008EN
PLEJ225	200 A loadbreak connectors	25 kV POSI-BREAK elbow with jacket seal	CA650100EN	MN650008EN
LE235	200 A loadbreak connectors	35 kV elbow	CA650068EN	MN650010EN
LPC215	200 A loadbreak connectors	15 kV elbow with jacket seal	CA650076EN	MN650035EN
LPC225	200 A loadbreak connectors	15 kV insulated protective cap	CA650085EN	MN650035EN
PLPC	200 A loadbreak connectors	25 kV POSI-BREAK insulated protective cap	CA650083EN	MN650035EN
LPC235	200 A loadbreak connectors	35 kV insulated protective cap	CA650087EN	MN650035EN
LJ215	200 A loadbreak connectors	15 kV loadbreak junction	CA650102EN	MN650015EN
LJ225	200 A loadbreak connectors	25 kV loadbreak junction	CA650081EN	MN650015EN
LJ235	200 A loadbreak connectors	35 kV loadbreak junction	CA650014EN	MN650040EN
LBI215	200 A loadbreak connectors	15 kV loadbreak bushing insert	CA650073EN	MN650013EN
LBI225	200 A loadbreak connectors	25 kV loadbreak bushing insert	CA650074EN	MN650013EN
ISB215	200 A loadbreak connectors	15 kV insulated standoff bushing	CA650089EN	MN650039EN
ISB225	200 A loadbreak connectors	25 kV insulated standoff bushing	CA650004EN	MN650039EN
ISB235	200 A loadbreak connectors	35 kV insulated standoff bushing	CA650088EN	MN650039EN
LFI215	200 A loadbreak connectors	15 kV loadbreak rotatable feedthru insert	CA650078EN	MN650034EN
LFI225	200 A loadbreak connectors	25 kV loadbreak rotatable feedthru insert	CA650077EN	MN650034EN
LPF215	200 A loadbreak connectors	15 kV loadbreak portable feedthru	CA650072EN	MN650037EN
LPF225	200 A loadbreak connectors	25 kV loadbreak portable feedthru	CA650092EN	MN650037EN
LPF235	200 A loadbreak connectors	35 kV loadbreak portable feedthru	CA650015EN	MN650037EN
IBWP225	200 A loadbreak connectors	15/25 kV bushing well insulated plug	CA650094EN	MN650038EN
LTC	200 A loadbreak connectors	15/25 kV loadbreak temporary bushing cap	CA650105EN	MN650071EN
LFEP215TFEC	200 A loadbreak connectors	15 kV fused loadbreak elbow connector	CA650069EN	MN650014EN
LFEP225TFEC	200 A loadbreak connectors	25 kV fused loadbreak elbow connector	CA650070EN	MN650014EN
FECC	200 A loadbreak connectors	Fused loadbreak elbow compression connector	CA650069EN	MN650014EN
FEF083	200 A loadbreak connectors	15 kV fused loadbreak elbow fuse	CA650069EN	MN132021EN
FEF155	200 A loadbreak connectors	25 kV fused loadbreak elbow fuse	CA650070EN	MN132021EN
VJ	Mixed 200/600 A loadbreak and 600 A deadbreak connectors	15/25 kV class variable junctions	CA650104EN	MN650065EN
CVJ	600 A loadbreak connectors	15/25 kV class multi-point variable junctions	CA650104EN	MN650076EN
LCN2DLJ615	600 A loadbreak connectors	15 kV Cleer loadbreak connector system	CA650010EN	MN650019EN
PS600	600 A loadbreak connectors	Cleer loadbreak standoff bushing	CA650010EN	S6001003
LCN2DLJ625	600 A loadbreak connectors	25 kV Cleer loadbreak connector system	CA650011EN	MN650019EN
LCN625	600 A loadbreak connectors	25 kV Loadbreak "C" Connector	CA650011EN	MN650019EN

Table 86. Part number catalog and manual references, continued

Base part number/prefix	Product type	Sub-product	Catalog section	Manual
LPC625	600 A loadbreak connectors	25 kV Insulated loadbreak protective cap	CA650011EN	MN650020EN
DT625	600 A deadbreak connectors	15/25 kV T-body kit	CA650017EN	MN650060EN
BT625	600 A deadbreak connectors	15/25 kV BOL-T T-body kit	CA650003EN	MN650017EN
BT635	600 A deadbreak connectors	35 kV BOL-T T-body kit	CA650008EN	MN650002EN
BTP615	600 A deadbreak connectors	15 kV BT-TAP T-body kit	CA650002EN	MN650017EN
BTP625	600 A deadbreak connectors	25 kV BT-TAP T-body kit	CA650001EN	MN650017EN
BTP635	600 A deadbreak connectors	35 kV BT-TAP T-body kit	CA650009EN	MN650002EN
BLRTP615	600 A deadbreak connectors	15 kV BOL-T loadbreak reducing tap plug	CA650002EN	MN650004EN
BLRTP625	600 A deadbreak connectors	25 kV BOL-T loadbreak reducing tap plug	CA650001EN	MN650004EN
BLRTP635	600 A deadbreak connectors	35 kV BOL-T loadbreak reducing tap plug	CA650009EN	MN650003EN
TP615	600 A deadbreak connectors	15 kV T-OP II T-body kit	CA650017EN	MN650017EN
TP625	600 A deadbreak connectors	25 kV T-OP II T-body kit	CA650059EN	MN650017EN
TP635	600 A deadbreak connectors	35 kV T-OP II T-body kit, 150 kV BIL	CA650055EN	MN650002EN
LRTP615	600 A deadbreak connectors	15 kV loadbreak reducing tap plug	CA650017EN	MN650048EN
LRTP625	600 A deadbreak connectors	25 kV loadbreak reducing tap plug	CA650059EN	MN650048EN
LRTP635	600 A deadbreak connectors	35 kV loadbreak reducing tap plug	CA650055EN	MN650051EN
DIP625	600 A deadbreak connectors	15/25 kV insulating plug	CA650007EN	MN650005EN
DIP635	600 A deadbreak connectors	35 kV insulating plug	CA650006EN	MN650002EN
CA625	600 A deadbreak connectors	15/25 kV cable adapter	CA650007EN	—
CA635	600 A deadbreak connectors	35 kV cable adapter	CA650006EN	—
PDBA615	600 A deadbreak connectors	15 kV class PUSH-OP insulated adapter cap	CA650019EN	MN650050EN
PDBA625	600 A deadbreak connectors	25 kV class PUSH-OP insulated adapter cap	CA650103EN	MN650050EN
PDBA635	600 A deadbreak connectors	35 kV class PUSH-OP insulated adapter cap	CA650056EN	MN650050EN
POP615	600 A deadbreak connectors	15 kV class PUSH-OP deadbreak connector	CA650016EN	MN650057EN
POP625	600 A deadbreak connectors	25 kV class PUSH-OP deadbreak connector	CA650018EN	MN650057EN
POP635	600 A deadbreak connectors	35 kV class PUSH-OP deadbreak connector	CA650052EN	MN650011EN
DBA615	600 A deadbreak connectors	15 kV bushing adapter	CA650041EN	MN650058EN
DBE625	600 A deadbreak connectors	15/25 kV bushing extender	CA650041EN	MN650053EN
DBA625	600 A deadbreak connectors	25 kV bushing adapter	CA650042EN	MN650058EN
DBA635	600 A deadbreak connectors	35 kV bushing adapter, 150 kV BIL	CA650054EN	MN650058EN
PDBA625	600 A deadbreak connectors	25 kV PUSH-OP insulated adapter cap	CA650103EN	MN650050EN
PDBA635	600 A deadbreak connectors	35 kV PUSH-OP bushing adapter	CA650056EN	MN650050EN
ISB625	600 A deadbreak connectors	15/25 kV standoff bushing	CA650066EN	MN650036EN
ISB635	600 A deadbreak connectors	35 kV standoff bushing	CA650057EN	MN650036EN
PISB625	600 A deadbreak connectors	15/25 kV PUSH-OP insulated standoff bushing	CA650043EN	MN650055EN
PISB635	600 A deadbreak connectors	35 kV PUSH-OP insulated standoff bushing	CA650049EN	MN650055EN
DPC625	600 A deadbreak connectors	15/25 kV insulated protective cap	CA650060EN	MN650054EN
DPC635	600 A deadbreak connectors	35 kV insulated protective cap	CA650058EN	MN650054EN
DJ625	600 A deadbreak connectors	15/25 kV deadbreak junction	CA650096EN	MN650044EN
DJ635	600 A deadbreak connectors	35 kV deadbreak junction	CA650053EN	MN650044EN
CC6	Deadbreak accessories, tools, and replacement parts	Compression connector	CA650006EN/CA650007EN	TD650031EN
CDT	Deadbreak accessories, tools, and replacement parts	Shear bolt	CA650006EN/CA650007EN	PA650012EN

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