HUBBELL Type C-Polymer Cutouts

Application

The primary purpose of any cutout is to provide protection to the lines of your system and the various apparatus on those lines such as transformers and capacitor banks. Hubbell Type C-Polymer cutouts provide reliable protection from low-level overloads that just melt the fuse link, intermediate faults, and very high faults, through maximum interrupt rating.

In addition, Type C-Polymer cutouts can also be used as a sectionalizing device. With the use of a portable loadbreak tool, Type C-Polymer cutouts can function much like an overhead disconnect switch. A 300 amp disconnect blade is also available for this purpose.

Quality Construction

Efficient Current Transfer

The Type C-Polymer cutout has an all copper current path. All contacts are silver-plated. Terminals are tin-plated bronze for use with copper or aluminum conductors.

Loadbreak Hooks

Galvanized steel hooks are standard on all Type C cutouts, except the arc chute version, for use with a portable loadbreak tool. These sturdy hooks are mounted on the top support and serve to guide the fuseholder into the latch socket.

Top Contact

The top contact is attached to the galvanized-steel hood by a stainless rivet to provide a smooth self-aligning action during closing even in severely corrosive environments. The top contact provides a socket-type cavity for latching the fuseholder and prevents any possible "over-travel" of the fuseholder. The top contact is made of a highly conductive copper strip with silver-plated embossments for efficient current transfer. The contacts are held under constant pressure designed to maintain firm contact with the fuseholder contact surface until fault interruption is accomplished.

Polymer Insulators

Type C Polymer Cutout Insulators are manufactured with Enhanced Silicone Polymer (ESP), the same material used in Ohio Brass PDV arresters and Hi*Lite Insulators. ESP is a polymer compound made by combining Silicone and EPDM Rubber. This special formulation offers the desirable toughness and resistance to tracking of our original EPR with the hydrophobic characteristics derived from low molecular weight silicone oils.

Hubbell Power Systems uses several tests to evaluate materials. Tracking, QUV, corona cutting, salt fog, oxidative stability and variations of differential thermal analysis tests confirm the quality of the material. For further information on our polymers, ask your Hubbell Power Systems representative for the publication "Polymer Materials for Insulator Weathersheds" EU1264-H.

Upgrades to Cutout Performance

The increased metal-to-metal leakage distance of Type C-Polymer Cutouts compares to their porcelain counterparts at 12.6" (319 mm) vs 8.7" (220 mm) for 15kV, 17.1" (420 mm) vs 12.6" (319 mm) for 27kV - 125kV BIL, and 23.6" (600 mm) vs 17.3" (440 mm) for 27kV - 150kV BIL .

Significantly lighter, Type C-Polymer Cutouts typically weigh only approximately half their porcelain counterparts. This ergonomic advantage makes them simple to install and, of course, far less fragile than porcelain. That means reduced or eliminated losses from routine shipping, storage and handling.

Hinge

The hinge on the Type C-Polymer cutout employs large pivot areas for the fuseholder's trunnion and is cast of a copper alloy chosen for its strength and corrosion resistance. The hinge contacts are highly conductive copper alloy stampings and are plated to assure low resistance current transfer from the trunnion casting. The parallel current paths are backed up by high strength cantilever springs and are riveted to the hinge castings. Fuseholder can be dropped into place and easily lifted up and out. No tricky maneuvering is required.

Fuseholders

The solid cap on the single vent fuseholder is silver-plated copper alloy, to provide efficient current transfer. An integral ring is provided in the top tube casting for opening and closing the fuseholder with an appropriate disconnect tool from the ground, from a bucket truck or from the pole.

The **toggle type trunnion** is a selective ***silver-plated bronze casting*** for efficient current transfer to the lower hinge contacts. A cam shaped projection on each side of the trunnion casting provides high pressure parallel current paths to the lower contacts. These projections, or pivot pins, are cast full round for smooth rotational operation in the hinge. The link ejector assists in arc interruption during low fault current or excessive overload conditions. A groove in the center of the link ejector allows the fuse link's pigtail to go directly from the fuse tube to the attachment nut. A curved ejector minimizes bending stresses in the pigtail to prevent broken strands. A stainless steel torsion spring on the link ejector helps to rapidly eject the link from the bore of the fuseholder during interruption. The 200 amp link ejector has a wider groove area and increased spring force to accommodate the larger links.

The **link ejector** is pinned to the trunnion casting with a stainless steel pin to provide resistance to corrosive elements and provide smooth pivotal action. An interlocking feature between the link ejector and tube casting prevents excessive tension on the fuse link during closure, thereby preventing link breakage.

The **link ejector** employs a hammer effect to enhance toggle action of the trunnion during low fault and overload interruptions, hence dropout action is enhanced. The link ejector provides sufficient surface area to facilitate re-fusing by linemen wearing gloves.

Ratings/Specifications

STANDARD Type C-Polymer cutouts are maximum design voltage rated to eliminate application and selection confusion. There are **no restrictions** on application to grounded wye, ungrounded wye, or delta systems having maximum operating voltages (line-to-line) equal to or less than the cutout maximum design voltage rating. (See the LINKBREAK and LOADBREAK cutouts for their specifications.) Interruption tests have been performed at full system line-to-line voltage. 100-amp and 200-amp fuse tubes and 300-amp disconnect blades are available for each voltage class. They all fit into a common mounting assembly rated at 300 amps continuous.

HUBBELL Type C-Polymer Cutouts

Compare Hubbell quality and technical expertise

All Type C Cutouts meet or exceed ANSI/NEMA specifications.

15 kV product shown. 27kV-125kV BIL and 27kV-150kV BIL cutouts vary slightly in appearance.

COPPER ARC-SHORTENING ROD (ON SOME RATINGS)

TIN-PLATED BRONZE TERMINALS FOR USE WITH COPPER OR ALUMINUM CONDUCTOR

COPPER CURRENT PATH

GALVANIZED-STEEL ONE PIECE HOOD

POLYMER INSULATOR

STAINLESS STEEL BACKUP SPRING TO MAINTAIN CONTACT PRESSURE

SILVER-TO-SILVER CONTACTS

GALVANIZED STEEL HOOKS FOR LOADBREAK TOOL

CAST BRONZE TOP TUBE CASTING AND PULL RING

SYNTHETIC FUSE TUBE LINER

HIGH-STRENGTH FIBERGLASS FUSETUBE COATED WITH ULTRA-VIOLET INHIBITOR

COPPER CURRENT PATH

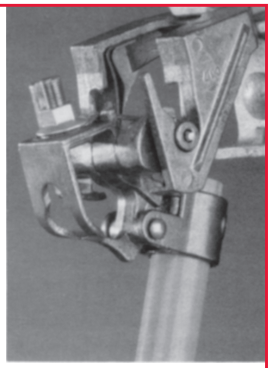
CAST BRONZE LOWER TUBE CASTING

STAINLESS-STEEL SPRING PROVIDES PROPER TOGGLE ACTION OF FUSELINK EJECTOR

CAST BRONZE HINGE FOR CORROSION RESISTANCE

FUSEHOLDER TOGGLE LATCH LIMITS TENSION OF FUSELINK

LARGE NUT OR SS NUT WITH CLAMP TO FASTEN FUSELINK WITHOUT BREAKING STRANDS.



MECHANICAL ASSIST:

FUSEHOLDER IS AVAILABLE WITH A TORSIONAL SPRING ON TRUNNION TO AID DROP OUT OPERATION IN CORROSIVE ENVIRONMENTS.

Type C-Polymer STANDARD Cutout

Interchangeability

Chance was the first to design a cutout that could interchange fuseholders and mounting assemblies with those of another manufacture. Standard Type C fuseholders and mounting assemblies are mutually interchangeable with S&C Type XS and ABB Type ICX cutouts. (within the same voltage class).

The Type C-Polymer Standard cutout is mutually interchangeable with Chance Type C Porcelain Standard cutout.

Synthetic Arc-Quenching Fusetube

The 1/2-inch inside diameter of the Type C-Polymer cutout's 100 ampere fusetube increases internal pressure giving superior and reliable expulsion action. During frequently encountered intermediate fault ranges this diameter also permits higher TRV (transient recovery voltage) values to be tolerated. This small bore design eliminates any concern related to high impedance phase-to-phase faults on ungrounded wye and delta systems.

The inside liner is a synthetic arc-quenching formulation in part consisting of polyester fiber, epoxy and Aluminum Tri Hydrate. The liner is chemically bonded to the tube's glass-reinforced shell. This combination provides a moisture source to extinquish the arc during interrupt operations without absorption of atmospheric moisture leading to potential swelling and delamination, and provides a high bursting strength. It is protected from the weather and environment by a special ultra-violet resistant coating. For more information on the synthetic arc-quenching material, refer to Bulletin 10-0201.

The Hubbell fuse tube operates with fuselinks from all major suppliers.

100 amp or smaller fuselinks shall not be used in 200-amp fuseholders.

Brackets

Type C-Polymer cutouts come packed one per carton including a NEMA Heavy Duty "B" bracket with captive 1 1/2" bolt for crossarm mounting.

Type X brackets, also for crossarm mounting, provides 2 5/8" additional clearance between the crossarm and the cutout.

"D" brackets are used to mount cutouts and/or arresters directly to the pole. Three brackets may be used for three-phase application. Type D brackets provide a clean, quick mounting without crossarm or special pole bands.

All the above brackets are galvanized steel for long lasting service. Cutouts can be ordered without any brackets.

Higher Interrupt Capacities

By using a copper arc shortening rod inside the top of the fusetube, higher interrupt ratings are obtainable. An arc shortening rod is attached to the cap of some fusetubes and lowers the fuse link within the fusetube. This permits a much shorter arc, resulting in less arc energy, and higher interrupting capacities. For 200 A tubes, it allows for full voltage ratings.

It is necessary to use fuse links with removable buttonheads when arc shortening rods are employed.

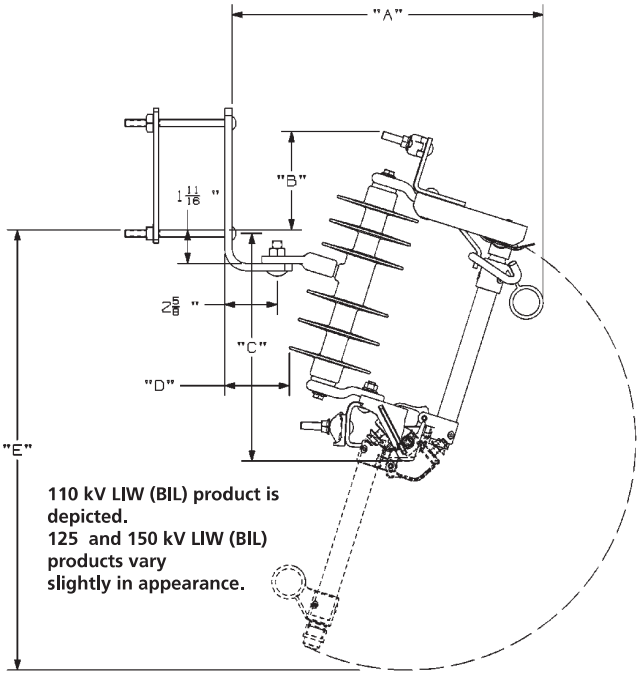
Terminals

Tin-plated bronze parallel groove type terminals are standard on Type C cutouts. They can accommodate aluminum or copper conductor sizes ranging from No. 6 (13.3 mm²) solid copper through 4/0 (160.6 mm²) ACSR or 250 (167.5 mm²) kcmil stranded copper. The parallel groove design is perfect for handling two different sizes of conductor as is the case when arresters are being used. Eyebolts are also available. See ordering data, page 10AA-11.

Extra Corrosion Protection

Type C cutouts are available with components of stainless steel brackets, hood and hardware, and copper alloy loadbreak hooks to offer greater corrosion resistance for environmental areas where corrosion can become a major factor. To order a stainless steel/copper alloy cutout add the suffix "S" to the end of the catalog number with the rating specifications desired. In additon, an optional spring assist may be provided to further enhance the toggle and drop out action in highly corrosive applications.

**100 Amp –
Single Vent
15 kV/110 kV LIW (BIL)**



**110 kV LIW (BIL) product is depicted.
125 and 150 kV LIW (BIL) products vary slightly in appearance.**

STANDARD Type C-Polymer Cutout with NEMA Type B Bracket

kV LIW (BIL)	A	B	C	D	E
110	15 5/8"	4 7/8"	11 5/8"	3 1/4"	22 1/16"
	395 mm	125 mm	295 mm	82 mm	561 mm
125	16 1/16"	6 5/8"	13 1/16"	2 7/8"	27"
	408 mm	167 mm	332 mm	72 mm	686 mm
150	16 1/16"	6 5/8"	13 1/16"	2 7/8"	27"
	408 mm	167 mm	332 mm	72 mm	686 mm

Type C-Polymer STANDARD Cutouts

Specifications and Ordering Information

All Type C Cutouts meet or exceed ANSI/NEMA specifications.

See page 10AA-14 for Arrester Cutout Combinations
See page 10AA-15 for Accessories.
See page 10AA-16 for Complete Catalog Numbering

15kV - 110kV LIW (BIL) RUS LISTED

*Base Catalog No.	*Option suffixes below	Maximum Design Voltage	Nominal System Voltage	Continuous Curent (Amps)	Interrupt Capacity (Asym Amps)	Leakage to Ground Metal to Metal (minimum)		*Weight (lb./kg.)	Replacement Fusetube Cap/ Cap Assembly	Arc Shortening Rod
CP710112	1 2 3	15 kV	Thru 14.4 kV	100	10,000	12.6"	319 mm	9.6/4.4	P7001535P	No
CP710114	1 2 3	15 kV	Thru 14.4 kV	100	16,000	12.6"	319 mm	9.8/4.5	E7001767P	Yes‡
CP710143	1 2 3	15 kV	Thru 14.4 kV	200	12,000	12.6"	319 mm	10.4/4.7	E7002146P	Yes‡
CP710133	1 2 3	15 kV	Thru 14.4 kV	300	12,000**	12.6"	319 mm	9.9/4.5	P7001535P	N/A

27kV - 125kV LIW (BIL)

CP710211	1 2 3	27 kV	Thru 24.9 kV	100	8,000	17.1"	420 mm	11.0/5.0	P7001535P	No
CP710213	1 2 3	27 kV	Thru 24.9 kV	100	12,000	17.1"	420 mm	11.0/5.0	E7001768P	Yes‡
CP710242	1 2 3	27 kV	Thru 24.9 kV	200	10,000	17.1"	420 mm	11.6/5.3	E7002479P	Yes‡
CP710243	1 2 3	27 kV	Thru 24.9 kV	200	12,000	17.1"	420 mm	11.6/5.3	PSE7002706	Yes‡
CP710233	1 2 3	27 kV	Thru 24.9 kV	300	12,000**	17.1"	420 mm	11.2/5.1	P7001535P	N/A

27kV - 150kV LIW (BIL)

CP710311	1 2 3	27 kV		100	8,000	23.6"	600 mm	10.7/4.8	P7001535P	No
CP710313	1 2 3	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5kV	100	12,000	23.6"	600 mm	10.7/4.8	E7001768P	Yes‡
CP710342	1 2 3	27 kV		200	10,000	23.6"	600 mm	11.3/5.1	E7002479P	Yes‡
CP710343	1 2 3	27 kV		200	12,000	23.6"	600 mm	11.3/5.1	PSE7002706	Yes‡
CP710333	1 2 3	27 kV		300	12,000**	23.6"	600 mm	10.9/4.9	P7001535P	N/A

*Adjust total weight when selecting Options **Momentary rating - Solid blade. ‡Must use removable buttonhead fuse links.

†For application on single-phase to neutral or three-phase solidly grounded wye-connected circuits where recovery voltage does not exceed the maximum design voltage of the device.

*Option Suffix 1
Terminal Variations

Suffix 1	Description	*Weight (lb./kg.)
P	Parallel-groove clamps	0.33/0.15
E	Small eyebolts	0.16/0.07
L	Large eyebolts	0.31/0.14
R	Lower PG Clamp Rotated 90°	0.33/.015

Must specify one selection for Option 1.

*Option Suffix 2
Bracket Variations

Suffix 2	Description	*Weight (lb./kg.)
B	NEMA Heavy Duty "B" bracket for crossarm (1 1/2" bolt)	2.84/1.29
X	Extended type bracket for crossarm (Horizontal section is 2 5/8" longer than Type B bracket)	3.75/1.70
D	D-shape bracket (pole)	7.67/3.48
Z	No bracket (must be used with M in Option 3)	—
Blank	No bracket (cannot use with M in Option 3)	—
V	Easy-On Bracket for crossarm (Height: 4 1/8" to 5 5/32" Width: 2 3/4" to 4")	2.9/1.32

*Option Suffix 3
Mechanical Assist Fuseholder

Suffix 3	Description
Blank	No option (may not be used with Z in Option 2)
M	Mechanical Assist Fuseholder (may not be used with Blank in Option 2)
F	Fargo cutout cover (may not be used with Blank in Option 2)
S	Anti-corrosion stainless steel/copper alloy cutout

STANDARD Fuseholders and Mounting Assemblies

15kV - 110kV LIW (BIL)

Cutout Base Catalog Number	Fuseholder/ Blade Catalog Number	Fuseholder/ Blade Weight	Mounting Assembly *Base Catalog Number	*Mounting Assembly Weight
CP710112	T710112T	1.8 lb./0.76 kg.	TP7101MM	8.0 lb./3.6 kg.
CP710114	T710114T	2.0 lb./0.79 kg.		
CP710143	T710143T	2.6 lb./1.18 kg.		
CP710133	T710133T	2.1 lb./0.95 kg.		

*Mounting assembly Catalog Number must include suffix for terminal variation. Adjust total weight when selecting Option suffixes above.

100A Fuseholders 200A Fuseholders 300A Blade

◀ 15 kV 12.6" leakage

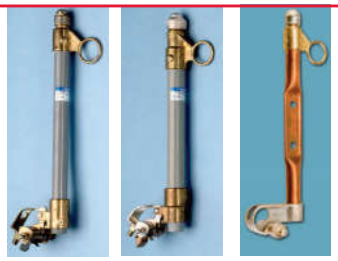
*Catalog No. TP7101MMPB

Mounting Assembly only

27kV - 125kV LIW (BIL)

CP710211	T710211T	1.9 lb./0.86 kg.	TP7102MM	9.16 lb./4.1 kg.
CP710213	T710213T	2.0 lb./0.91 kg.		
CP710242	T71024T	2.5 lb./1.13 kg.		
CP710243	T710243T	2.5 lb./1.13 kg.		
CP710233	T710233T	2.1 lb./0.97 kg.		

*Mounting assembly Catalog Number must include suffix for terminal variation. Adjust total weight when selecting Option suffixes above.



100A Fuseholders 200A Fuseholders 300A Blade

◀ 27 kV - 17.1" leakage TP7102MMPB

Mounting Assembly only

27kV - 150kV LIW (BIL)

CP710311	T710311T	1.9 lb./0.86 kg.	TP7103MM	9.51 lb./4.31 kg.
CP710313	T710313T	2.0 lb./0.91 kg.		
CP710242	T710242T	2.5 lb/1.13 kg.		
CP710343	T710343T	2.5 lb./1.13 kg.		
CP710333	T710333T	2.1 lb./0.97 kg.		

*Mounting assembly Catalog Number must include suffix for terminal variation. Adjust total weight when selecting Option suffixes above.

100A Fuseholders 200A Fuseholders 300A Blade

◀ 27 kV - 23.6" leakage TP7103MMPB

Mounting Assembly only

Universal Cutout Tool

Ideal for Standard and Linkbreak 100 amp fuse holders (ABB, Chance S&C) to easily lift out, place, *open and close. Inverted, secure method also fits Chance Electronic Sectionalizers.

Cat. No. **PSC4033484 (Wt. 4 oz.)** See Tools Catalog Section 2100.

When opening a cutout, follow all work rules and OSHA regulations.* ***Not for use with Loadbreak cutouts.*