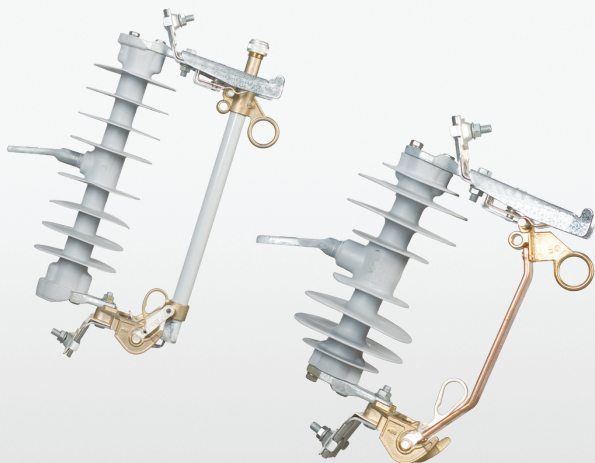


DISTRIBUTION CUTOUTS

## NCX

### Outdoor open type cutout



#### Product features

- 7.8/15 kV, 15 kV, 15/27 kV, 20/34.5 kV, 27 kV, and 38 kV
- 110, 125, 150, and 200 kV BIL
- 100 A, 200 A fused
- 300 A disconnect blade
- Porcelain, polymer concrete, or silicone insulators available
- Cutout/arrestor combo

#### Description

The NCX cutout has a long history of providing safe, reliable overcurrent protection to the industry. The NCX design provides overcurrent protection for equipment that may be damaged by system overload or fault conditions. Porcelain, polymer concrete, or silicone insulators and cutout/arrestor combinations are available on certain models.

#### Ratings

The NCX is offered in several frame sizes to properly match each system BIL. Each fuse support can accommodate a 100 A or 200 A fuseholder, or a 300 A disconnect blade.

#### Design features

The 100 A fuseholder will accommodate standard or removable buttonhead-type fuse links rated from 1 A

NCX non-interchangeable cutouts are used on overhead distribution systems to provide overcurrent protection and visible indication of fuse operation.

to 100 A. The 200 A fuseholder accommodates fuse links rated from 140 A to 200 A. The selection of the appropriate fuse link size and type for a particular application is a function of the continuous load current to be carried, the type of equipment to be protected, and the required coordination with other overcurrent protective equipment. Types of protective equipment include circuit breakers, power reclosers, and other fused cutouts.

The NCX offers a variety of fault current interrupting ratings. Rating flexibility is achieved through the use of solid caps, expulsion caps, or link extenders. The 100 A expulsion cap is designed to vent when subjected to a pressure of 2,000 psi. The 200 A expulsion cap is designed to vent when subjected to a pressure of 1,300 psi. The additional vent allows the NCX to more efficiently expel the ionized gases from the fuse tube and thus greatly improves its interrupting capability.

Link extender caps can be utilized for design configurations which require single venting. The link extender positions the fusible element lower inside the fuse tube, thereby reducing the amount of pressure which can build up in the tube. The net effect gives the tube a higher interrupting rating.

**Standards and design testing**

The NCX cutout meets or exceeds all applicable requirements of EEI, NEMA SG-2, and IEEE C37.41 and C37.42 standards.

**Silicone rubber**

Silicone is used for its superior performance, durability, and insulation properties. It has the unique ability to maintain its hydrophobicity and offers greater stability against heat and ultraviolet radiation compared to other polymers. In addition, silicone cutouts are 30%-50% lighter than porcelain units. Silicone insulators are available in all ratings up to 180 kV BIL.

**Polymer concrete**

Available in 110 and 125 kV BIL ratings, polymer concrete provides a safe, shatter-proof design with molded-in rods to prevent moisture penetration. Because it resists damage from freeze/thaw cycles, the material is an excellent alternative to porcelain in colder climates. Polymer concrete is a field-proven material that provides excellent electrical properties and dielectric strengths, as well as superior mechanical durability.

**Arrester combinations**

ABB offers a combination NCX cutout with an arrester option. This combination unit is pre-assembled at the factory and provides overall savings by reducing installation time and accumulated costs that result from independently purchased parts.

NCX combination units are available with various mounting brackets to fulfill industry requirements. The combo units are equipped with normal duty, heavy duty, or riser pole polymer metal oxide arresters.

**Fuse tube construction**

The NCX cutouts utilize two different types of fuse tubes: a moisture-proof fuse tube or a horn fiber, high-strength glass fuse tube. The moisture-proof fuse tube is available on most 100 A designs and reduces swelling due to moisture absorption that can create problems with interruption.

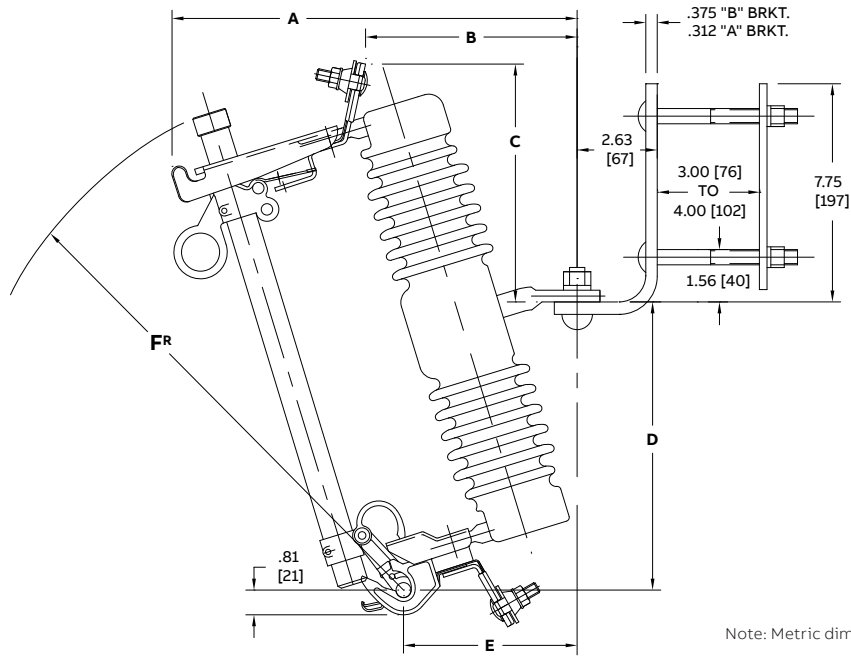
The 200 A design utilizes a high-strength glass fuse tube. This fuse tube is composed of a horn fiber liner surrounded by a glass filament wound outer shell. Both designs have a durable tube that withstands the rigors of high fault current interruptions. In addition, the tube is applied with paint to provide protection against the effects of ultraviolet rays.

**Voltage levels**

Single voltage rated cutouts can be applied on any single or three-phase system where the line-to-line voltage does not exceed the cutout rating. Dual voltage rated cutouts are suitable on single-phase circuits where maximum line-to-ground voltage does not exceed the value shown to the left of the slash (for example, does not exceed 15 kV in 15/27kV).

NCX dual voltage rated cutouts may be used on three-phase circuits that are solidly grounded and the maximum line-to-line voltage does not exceed the value shown to the right of the slash (for example, does not exceed 27 kV in 15/27 kV).

## Unit dimensions

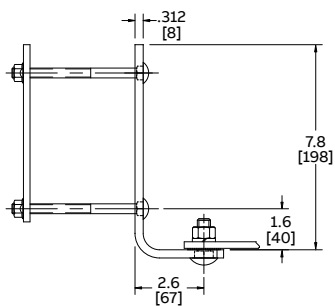


Note: Metric dimensions are displayed in [mm].

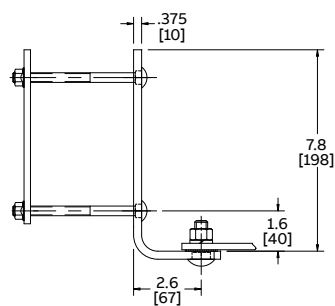
kVClass	BIL(kV)	Unit dimensions (in)						Creep (in)			Weight (lb)		
		A	B	C	D	E	FR	Porcelain	Silicone	Polymer concrete	Porcelain	Silicone	Polymer concrete
7.8/15 or 15	110	12.63	6.69	6.28	15.47	6.03	12.63	9.10	14.96	8.5	11.70	8.80	11.70
15/27 or 27	125	13.44	7.06	7.97	18.22	5.31	16.25	12.80	18.90	12	14.94	9.42	13.60
15/27 or 27	150	13.44	7.06	7.97	18.22	5.31	16.25	18.00	18.90	-	22.72	9.52	-
20/34.5 or 38	150	13.44	7.06	7.97	18.22	5.31	16.25	18.00	18.90	-	22.72	9.52	-

kVClass	BIL(kV)	Unit dimensions (mm)						Creep (mm)			Weight (kg)		
		A	B	C	D	E	FR	Porcelain	Silicone	Polymer concrete	Porcelain	Silicone	Polymer concrete
7.8/15 or 15	110	320.80	169.93	159.51	392.94	153.16	320.80	231.14	379.98	216	5.31	3.99	5.30
15/27 or 27	125	341.38	179.32	202.44	462.79	134.87	412.75	325.12	480.06	305	6.78	4.27	6.17
15/27 or 27	150	341.38	179.32	202.44	462.79	134.87	412.75	457.20	480.06	-	10.31	4.32	-
20/34.5 or 38	150	341.38	179.32	202.44	462.79	134.87	412.75	457.20	480.06	-	10.31	4.32	-

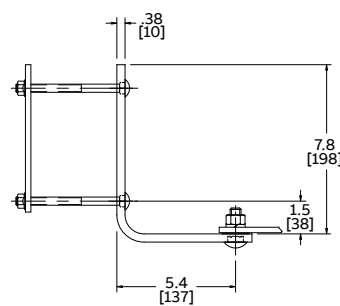
## Bracket dimensions



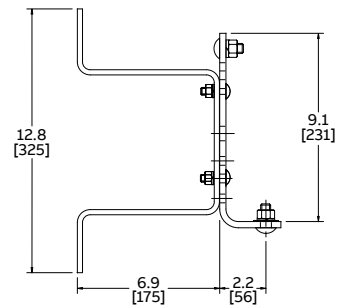
NEMA A bracket



NEMA B bracket



Extended bracket



Pole mounting bracket

## Ordering instructions for silicone NCX cutouts

### 7.8/15 kV and 15 kV NCX silicone

Digit	Description	Code	Definition
1	NCX cutout	W	7.8/15 kV and 15 kV
2	Insulator BIL	1	110 kV BIL
3	Fuse supports	J	Silicone
4	Terminal connectors	C	Clamshell
		E	Eyebolt
		N	None
		N	No bracket
		A	NEMA A
		B	NEMA B
5	Bracket	L	Extended
		C	Universal combo
		N	None
6	Special options	AM11	100 A, 12 kAIC, solid cap (rated 7.8/15 kV only)
		NA11	100 A, 20 kAIC, expendable cap (rated 7.8/15 kV only)
		DA21	200 A, 12 kAIC, solid cap (rated 7.8/15 kV only)
		PA21	200 A, 20 kAIC, expendable cap (rated 7.8/15 kV only)
		BM11	100 A, 10 kAIC, solid cap (rated 15 kV)
		QA11	100 A, 16 kAIC, expendable cap (rated 15 kV only)
		EA21	200 A, 8 kAIC, solid cap (rated 15 kV)
		GA21	200 A, 10 kAIC, link extender (rated 15 kV)
		UA21	200 A, 12 kAIC, expendable cap (rated 15 kV only)
		VA31	300 A, solid blade (rated for 7.8/15 kV and 15 kV)
		7-10	Fuseholder

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**15/27 kV and 27 kV NCX silicone**

Digit	Description	Code	Definition
1	NCX cutout	W	15/27 kV and 27 kV
		2	125 kV BIL
		4	150 kV BIL, 600 mm creep (silicone only)
2	Insulator BIL	5	150 kV BIL
3	Fuse supports	J	Silicone
		C	Clamshell
		E	Eyebolt
4	Terminal connectors	N	None
		N	No bracket
		B	NEMA B
		L	Extended
5	Bracket	C	Universal combo
6	Special options	N	None
		BM12	100 A, 10 kAIC, solid cap (rated 15/27 kV only)
		QA12	100 A, 16 kAIC, expendable cap (rated 15/27 kV only)
		FA22	200 A, 10 kAIC, solid cap (rated 15/27 kV only)
		HA22	200 A, 16 kAIC, link extender (rated 15/27 kV only)
		CM12	100 A, 6 kAIC, solid cap (rated 27 kV or 20/34.5 kV)
		TA12	100 A, 12 kAIC, expendable cap (rated 20/34.5 kV)
		SA12	100 A, 12 kAIC, expendable cap (rated 27 kV)
		KM12	100 A, 12 kAIC, link extender (rated 27 kV or 20/34.5 kV)
		VA32	300 A, solid blade (rated 15/27 kV and 27 kV)
		7-10	Fuseholder

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**20/34.5 kV and 38 kV NCX silicone**

Digit	Description	Code	Definition
1	NCX cutout	W	20/34.5 kV and 38 kV
		4	150 kV BIL, 600 mm creep (silicone only)
2	Insulator BIL	5	150 kV BIL
3	Fuse supports	J	Silicone
		C	Clamshell
		E	Eyebolt
4	Terminal connectors	N	None
		N	No bracket
		B	NEMA B
		L	Extended
5	Bracket	C	Universal Combo
6	Special options	N	None
		CM12	100 A, 6 kAIC, solid cap
		TA12	100 A, 12 kAIC, expendable cap
		KM12	100 A, 12 kAIC, link extender
		VA32	300 A, solid blade (rated 15/27 kV and 27 kV)
7-10	Fuseholder	0000	Fuse support only (no tube)

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**NCX cutout arrester combination**

Digit	Description	Code	Definition		
1	NCX cutout arrester combination	N	Combo		
		1	15 kV		
		2	27 kV		
2	Voltage level	3	38 kV (use 150 kV BIL insulator)		
		1	110 kV BIL		
		2	125 kV BIL		
3	Insulator BIL	5	150 kV BIL		
		S	100 A solid cap		
		E	100 A expendable cap		
		L	100 A link extender (only for 27 kV or 20/34.5 kV units)		
		T	200 A solid cap		
4	Cutout cap	F	200 A expendable cap		
5	Bracket	U	Standard combo (contact factory for other options)		
		C	Polymer normal duty		
		H	Polymer heavy duty		
6	Arrester type	R	Polymer riser pole		
		03	3 kV		
		06	6 kV		
		09	9 kV		
		10	10 kV		
		12	12 kV		
		15	15 kV		
		18	18 kV		
		21	21 kV		
		24	24 kV		
		7-8	Arrester voltage	27	27 kV
		9	Cutout terminals	1	Clamshell
2	Eyebolt				
1	None				
10	Special options	8	12" lead		
		B	Arrester bird guard		
		X	No arrester but in combo box		
11	Cutout insulator material	Blank	Porcelain		
		J	Silicone		
		Z	Polymer concrete (110 kV BIL only)		

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**Porcelain NCX cutout style numbers**

Ratings					Style number			
Voltage		Current		Cap type on fuseholder	Clamshell terminal connectors		Eyebolt terminal connectors	
Voltage	BIL (kV)	Current rating (A)	Interrupting rating (kA)		with NEMA brkt	without NEMA brkt	with NEMA brkt	without NEMA brkt
7.8/15	110	100	12	Solid	W1NCANAM11	W1NCNNAM11	W1NEANAM11	W1NENNAM11
7.8/15	110	100	20	Expendable	W1NCANNA11	W1NCNNNA11	W1NEANNA11	W1NENNNA11
7.8/15	110	200	12	Solid	W1NCBNDA21	W1NCNND A21	W1NEBNDA21	W1NENNDA21
7.8/15	110	200	20	Expendable	W1NCBNPA21	W1NCNNPA21	W1NEBNPA21	W1NENNPA21
15	110	100	10	Solid	W1NCANBM11	W1NCNNBM11	W1NEANBM11	W1NENNB M11
15	110	100	16	Expendable	W1NCBNQA11	W1NCNNQA11	W1NEANQA11	W1NENNQA11
15	110	200	8	Solid	W1NCBNEA21	W1NCNNEA21	W1NEBNEA21	W1NENNEA21
15	110	200	10	Link extender	W1NCBNGA21	W1NCNNGA21	W1NEBNGA21	W1NENNGA21
15	110	200	12	Expendable	W1NCBNUA21	W1NCNNUA21	W1NEBNUA21	W1NENNUA21
15	110	300	Disconnect	Blade	W1NCBNVA31	W1NCNNVA31	W1NEBNVA31	W1NENNVA31
15/27	125	100	10	Solid	W2NCBNBM12	W2NCNNBM12	W2NEBNBM12	W2NENNB M12
15/27	125	100	16	Expendable	W2NCBNQA12	W2NCNNQA12	W2NEBNQA12	W2NENNQA12
15/27	125	200	10	Solid	W2NCBNFA22	W2NCNNFA22	W2NEBNFA22	W2NENNFA22
15/27	125	200	16	Link extender	W2NCBNHA22	W2NCNNHA22	W2NEBNHA22	W2NENNHA22
20/34.5	150	100	6	Solid	W5NCBNCM12	W5NCNNCM12	W5NEBNCM12	W5NENNL M12
20/34.5	150	100	12	Expendable	W5NCBNTA12	W5NCNNTA12	W5NEBNTA12	W5NENNTA12
20/34.5	150	100	12	Link extender	W5NCBNKM12	W5NCNNKM12	W5NEBNKM12	W5NENNK M12
20/34.5	200	100	12	Link extender	W9NCLNMM13	W9NCNNMM13	W9NELNMM13	W9NENNMM13
27	125	100	12	Expendable	W2NCBNSA12	W2NCNNSA12	W2NEBNSA12	W2NENNSA12
27	125	100	12	Link extender	W2NCBNKM12	W2NCNNKM12	W2NEBNKM12	W2NENNK M12
27	200	100	12	Link extender	W9NCLNKM13	W9NCNNKM13	W9NELNKM13	W9NENNK M12
27	125	300	Disconnect	Blade	W2NCBNVA32	W2NCNNVA32	W2NEBNVA32	W2NENNVA32

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Optional parts and accessories

**Replacement fuseholders**

Style number	Voltage rating (kV)	BIL (kV)	Current rating (A)	Interrupting rating (kA)	Cap type
279C606A03MP	7.8/15	110	100	12	Solid
279C606A04	7.8/15	110	100	20	Expendable
279C606A05	7.8/15	110	200	12	Solid
279C606A06	7.8/15	110	200	20	Expendable
279C606A10MP	15	110	100	10	Solid
279C606A11	15	110	100	16	Expendable
279C606A12	15	110	200	8	Solid
279C606A30	15	110	200	10	Link extender
279C606A13	15	110	200	12	Expendable
279C606A14	15	110	300	-	Solid disconnect blade
279C606A17MP	15/27	125 or 150	100	10	Solid cap
279C606A18	15/27	125 or 150	100	16	Expendable
279C606A19	15/27	125 or 150	200	10	Solid cap
279C606A48	15/27	125 or 150	200	16	Link extender
279C606A21	15/27	125 or 150	300	-	Solid disconnect blade
279C606A49MP	15/27	200	100	10	Link extender
279C606A50	15/27	200	100	10	Expendable
279C606A22MP	20/34.5	150	100	6	Solid cap
279C606A23	20/34.5	150	100	12	Expendable
279C606A31MP	20/34.5	150	100	12	Link extender
279C606A32MP	20/34.5	200	100	12	Link extender
279C606A21	20/34.5	150	300	-	Solid disconnect blade
279C606A53	27	125 or 150	100	12	Expendable
279C606A25MP	27	125 or 150	100	12	Link extender
279C606A35MP	27	200	100	12	Link extender
279C606A21	27	125 or 150	300	-	Solid disconnect blade
279C606A40	38	150	100	2	Solid
279C606A54	38	150	100	10	Link extender
279C606A56	38	200	100	10	Link extender
279C606A21	38	150	300	-	Solid disconnect blade

**Replacement fuseholder caps**

Style number	Current rating (A)	Cap type
162A775A01	100	Solid
162A775A03	200	Solid
3A09870A05	200	Link ext. (110 kV BIL only)
3A09870A01	100	Link ext. (27 kV, 25 or 150 kV BIL only)
3A09870A06	200	Link ext. (15/27 kV, 200 kV BIL only)
3A309870A02	100	Link ext. (15 or 20/34.5 kV, 200 kV BIL only)
3A09870A04	100	Link ext. (27 kV, 200 kV BIL only)
3872A21A01	100	Expendable cap
161A292A04	200	Expendable cap

**Brackets**

Style number	Type
367C723A05	NEMA A
403A101A03	NEMA B
367C802A05	Extended
791C890A16	Pole Mounting

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