

Type NCX Outdoor 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/arrester 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/arrester combinations are available on certain models.

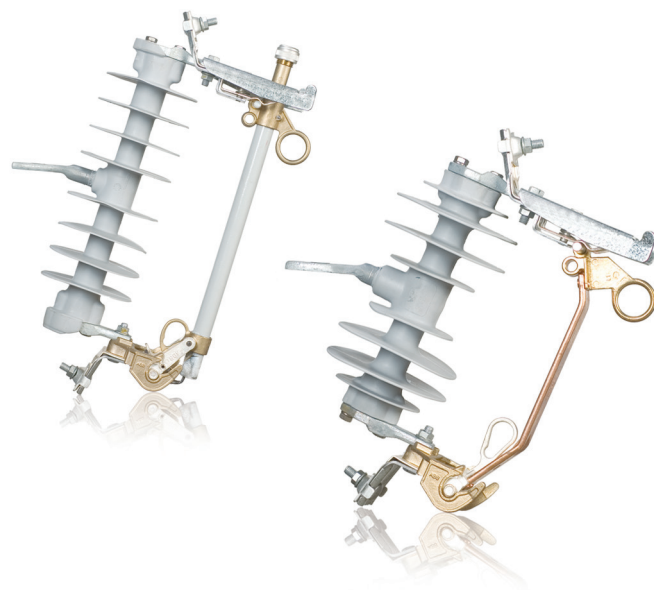
Ratings

The NCX is offered in several frame sizes to properly match each system BIL. Each fuse support has “universal” contacts that accommodate a 100 A fuseholder, a 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 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.

Options and construction details

Silicone rubber

Silicone rubber has been used for more than thirty years as an outdoor insulation material and is the fastest growing choice for polymeric material for medium and high voltage outdoor insulation. 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

ABB has been using polymer concrete for more than twenty years. 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.

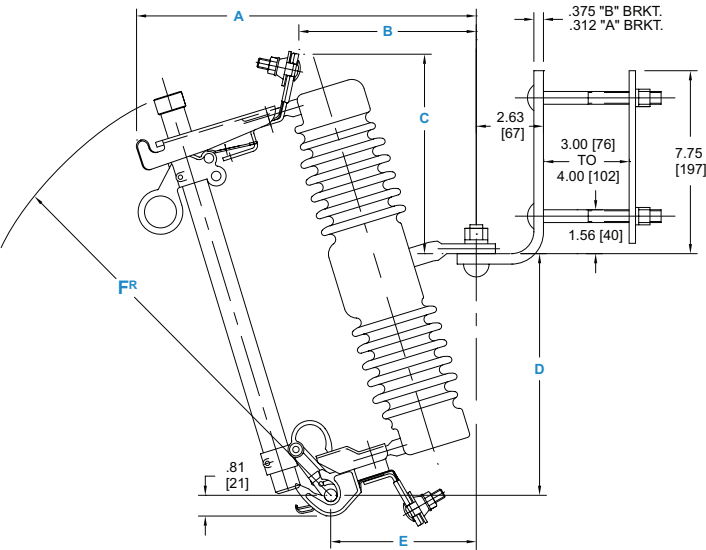
Voltage levels

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).

Dimensions

Unit dimensions

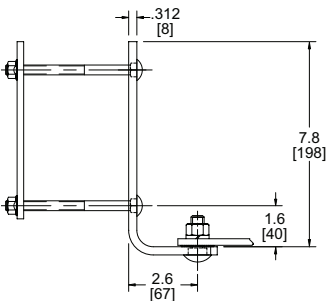


Note: Metric dimensions are displayed in [mm].

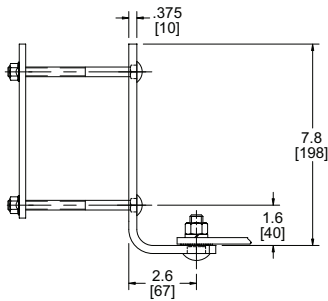
Unit dimensions (in)								Creep (in)			Weight (lb)		
kV Class	BIL (kV)	A	B	C	D	E	FR	Porcelain	Silicone	Polymer concrete	Porcelain	Silicone	Polymer concrete
7.8/15 or 15	110	12.63	6.69	6.28	15.47	6.03	12.63	9.10	14.96	8.5	11.70	8.80	11.70
15/27 or 27	125	13.44	7.06	7.97	18.22	5.31	16.25	12.80	18.90	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	-

Unit dimensions (mm)								Creep (mm)			Weight (kg)		
kV Class	BIL (kV)	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	-

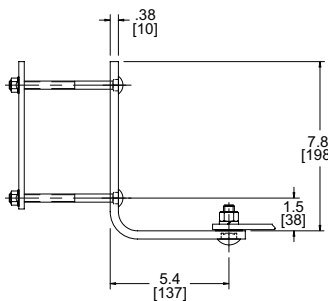
Bracket dimensions



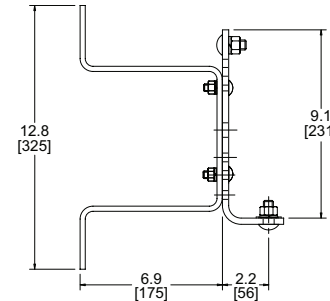
NEMA A bracket



NEMA B bracket



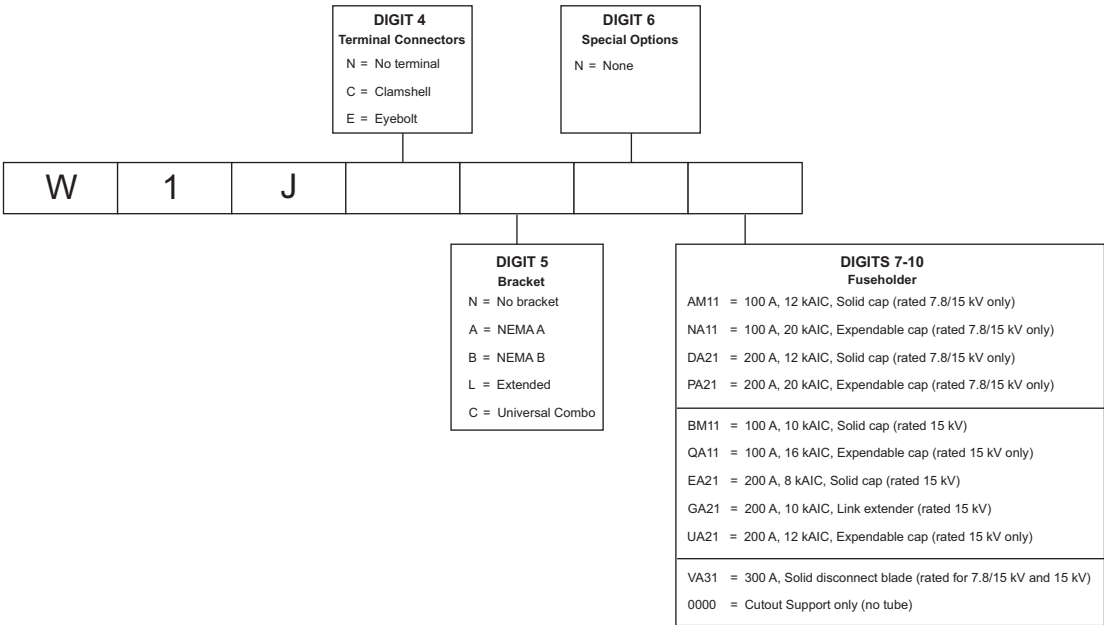
Extended bracket



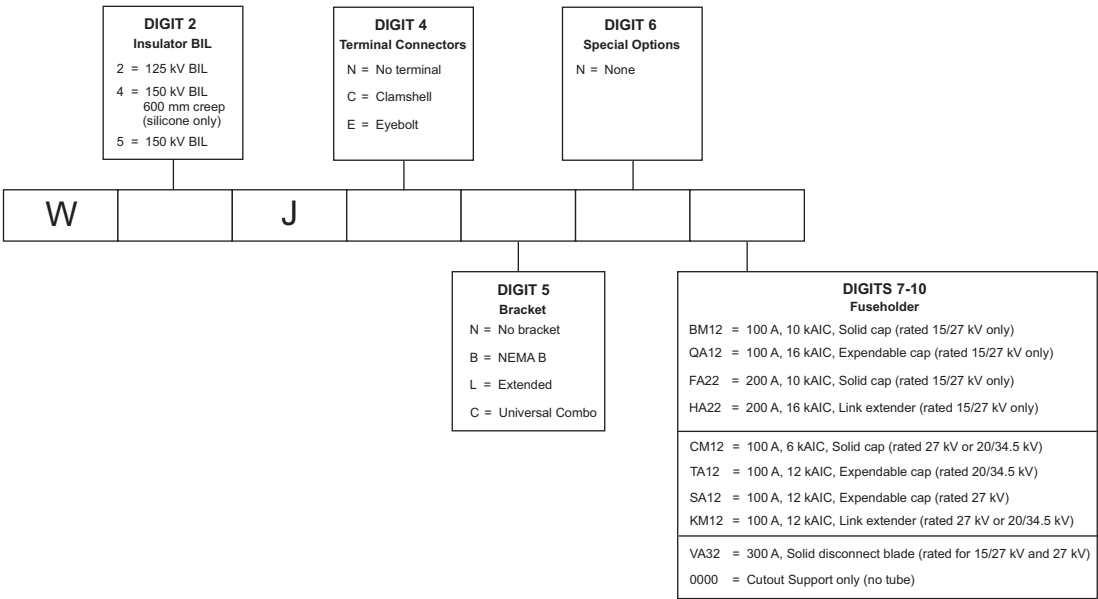
Pole mounting bracket

Ordering instructions for silicone NCX cutouts

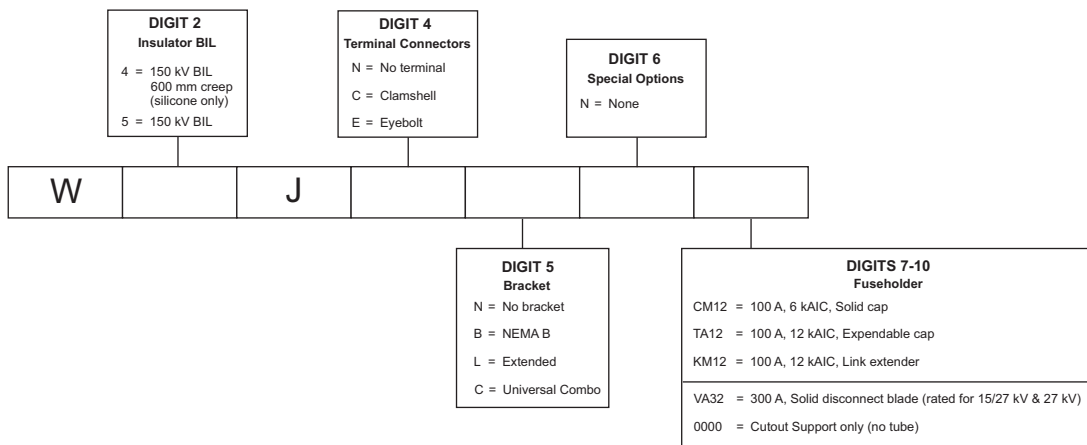
7.8/15 kV and 15 kV NCX silicone



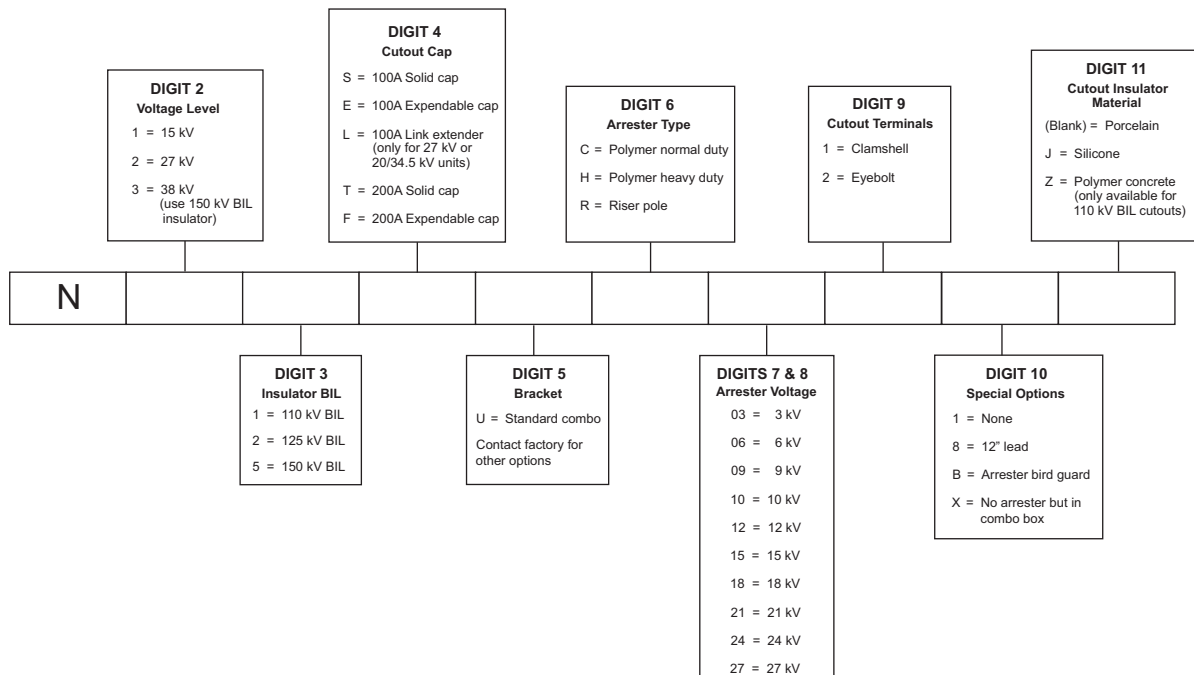
15/27 kV and 27 kV NCX silicone



20/34.5 kV and 38 kV NCX silicone



NCX cutout arrester combination



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	-
7.8/15	110	100	20	Expendable	W1NCANNA11	W1NCNNNA11	W1NEANNA11	W1NENNNA11
7.8/15	110	200	12	Solid	W1NCBND A21	W1NCNNDA21	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	-
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	-
15/27	125	200	16	Link extender	W2NCBNHA22	W2NCNNHA22	W2NEBNHA22	W2NENNHA22
20/34.5	150	100	6	Solid	W5NCBNCM12	-	-	-
20/34.5	150	100	12	Expendable	W5NCBNTA12	W5NCNNTA12	W5NEBNTA12	-
20/34.5	150	100	12	Link extender	W5NCBNKM12	-	-	-
20/34.5	200	100	12	Link extender	W7NCLNMM13	W8NCNNMM13	W7NELNMM13	-
27	125	100	12	Expendable	W2NCBNSA12	W2NCNNSA12	W2NEBNSA12	-
27	125	100	12	Link extender	W2NCBNKM12	-	-	-
27	200	100	12	Link extender	W7NCLNKM13	-	-	-
27	125	300	Disconnect	Blade	W2NCBNVA32	W2NCNNVA32	-	W5NENNVA32

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	Curr Rat (A)	Cap Type
162A775H01	100	Solid
162A775H03	200	Solid
3A09870G05	200	Link ext. (110 kV BIL only)
3A09870G01	100	Link ext. (27 kV, 25 or 150 kV BIL only)
3A09870G06	200	Link ext. (15/27 kV, 200 kV BIL only)
3A309870G02	100	Link ext. (15 or 20/34.5 kV, 200 kV BIL only)
3A09870G04	100	Link ext. (27 kV, 200 kV BIL only)
3872A21G01	100	Expendable cap
161A292H04	200	Expendable cap

Brackets

Style number	Type
367C723G05	NEMA A
403A101G03	NEMA B
367C802G05	Extended
791C890G16	Pole Mounting

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