

Fusing Equipment

Electrical Apparatus-
240-60

NX Indoor Current-Limiting Fuses

GENERAL

Cooper Power Systems Type NX current-limiting fuses provide overload protection for all indoor and underground cable distribution systems 2.4 through 34.5 kV. NX fuses are noiseless and expel no hot gases or burning particles while interrupting currents from minimum melt to maximum fuse rating (50,000 A through 23 kV, 35,000 A through 27 and 38 kV). Their current-limiting capability greatly reduces the momentary duty on protected equipment, extending the life and, in some cases, reducing the original cost of that equipment.

The ability of an NX fuse to interrupt low-current faults eliminates the need for auxiliary devices to handle these troublesome current levels. An NX fuse extends system coordination because it is fast clearing and current-limiting – conductor and equipment damage caused by high currents is virtually eliminated.

Clip-Style NX Fuse

The basic NX fuse unit (see Figure 1) is designed to mount in a clip-style mounting. Basic clip-style NX fuses are available in 4.3, 5.5, 8.3, 15.5, 23, 27, and 38 kV ratings.

NX Fuse with Arc-Strangler Loadbreak Device

An NX fuse with an Arc-Strangler loadbreaking device, (see Figure 2) that mounts in a hinge-style mounting is available on 4.3, 5.5, 8.3, and 15.5 kV fuses. All current magnitudes from excitation current through 200 A can be interrupted positively and safely by opening the fuse with a switch disconnect stick.

These units have the same operating characteristics as the basic clip-style fuse, along with loadbreaking capabilities.

Arc-Strangler Switchblade

Switchblades with the Arc-Strangler loadbreaking device are available in 8.3 and 15.5 kV, 200 A continuous current ratings (see Figure 3).



Figure 1.
Clip-style NX fuses.



Figure 2.
NX fuse with Arc-Strangler loadbreaking device.

TABLE 1
Electrical Characteristics

Fuse Type	Full Range
Maximum Interrupting Current (symmetrical)	4.3 kV through 23 kV 50,000 A
	27 kV and 38 kV 35,000 A

TABLE 2
NX Fuse Time Current Characteristic (TCC) Curves

Voltage Rating (kV)	TCC Curve
4.3	R240-91-30
5.5	R240-91-31
8.3	R240-91-32
15.5	R240-91-33
23	R240-91-34
27.38	R240-91-35

INSTALLATION

The NX clip- and hinge-style fuses are designed to fit industry standard mountings. Each fuse is marked with its mounting code number. The mounting code number defines the mounting's insulation level, contact spacing and contact type. NX clip-style fuses fit 5/8" standard clip-style mountings in pad-mounted



Figure 3.
Arc-Strangler switchblade.

transformers, switchgear, sectionalizing enclosures, industrial vaults, and metal clad switchgear. The NX hinge-style fuses fit the standard hinge-style mountings. The mounting code number of the fuse and the mount must be the same. Refer to catalog section 240-59,

TABLE 3
Electrical Ratings

Contin- uous Current Rating (A)	Maximum Design Voltage													
	4.3 kV		5.5 kV		8.3 kV		15.5 kV		23 kV		27 kV		38 kV	
	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³	Min. Melt I ² t (A ² S)x10 ³	Max. Let through I ² t (A ² S)x10 ³
1.5	—	—	—	—	0.01	0.15	0.01	0.15	—	—	—	—	—	—
2.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	0.05	0.30	0.05	0.59	—	—	—	—	—	—
4.5	—	—	—	—	0.05	0.30	0.05	0.59	—	—	—	—	—	—
6	—	—	0.13	0.60	0.13	0.76	0.13	1.44	0.13	1.8	0.08	1.6	0.08	3.5
8	—	—	0.35	1.05	0.34	1.5	0.21	2.90	0.21	3.5	0.21	2.5	0.21	4.7
10	—	—	0.52	2.0	0.52	3.6	0.52	6.65	0.52	7.8	0.53	3.8	0.53	5.6
12	—	—	1.15	4.0	1.15	6.3	1.15	10.4	1.15	13.5	0.72	6.0	0.73	9.0
15	—	—	—	—	—	—	—	—	—	—	0.74	6.0	0.74	10.5
18	1.5	7.9	1.25	10.0	1.25	11.0	1.25	10.5	1.25	16.2	1.30	7.0	1.15	10.5
20	—	—	1.65	14.0	1.65	13.0	1.65	16.5	1.65	18.0	1.65	9.4	1.65	13.8
25	2.9	12.5	3.0	38.0	2.0	24.0	2.0	27.0	2.0	28.0	2.95	16.0	3.00	19.5
30	—	—	3.0	46.0	4.0	31.0	4.0	34.0	4.0	36.0	4.60	26.0	4.60	29.0
35	2.9	25.0	—	—	—	—	—	—	—	—	—	—	—	—
40	—	—	5.3	67.0	8.0	50.0	8.0	57.0	8.0	62.0	5.25	29.5	5.13	35.00
45	6.6	69.0	—	—	—	—	—	—	—	—	—	—	—	—
50	9.0	75.0	9.0	98.0	11.6	72.0	11.6	90.0	—	—	11.30	65.0	11.60	80.00
60*	—	—	—	—	15.8	125.0	16.0	132.0	—	—	18.40	104.0	18.50	117.0
65	18.2	100.0	18.2	167.0	26.5	130.0	26.5	200.0	—	—	—	—	—	—
75	26.5	150.0	26.5	244.0	—	—	—	—	—	—	—	—	—	—
80	—	—	—	—	47.0	220.0	46.5	340.0	—	—	—	—	—	—
80*	—	—	—	—	32.5	200.0	32.5	225.0	—	—	20.10	118.0	21.20	140.0
100	45.5	240.0	—	—	100.0	450.0	100.0	580.0	—	—	—	—	—	—
100*	—	—	36.0	380.0	—	—	47.0	370.0	—	—	26.00	260.0	47.00	320.0
125	—	—	—	—	—	—	—	—	—	—	—	—	—	—
125*	—	—	—	—	—	—	—	—	—	—	—	—	—	—
130*	73.0	400.0	73.0	790.0	102.0	520.0	102.0	790.0	—	—	—	—	—	—
140	—	—	—	—	—	—	—	—	—	—	—	—	—	—
150*	106.0	620.0	105.0	980.0	—	—	—	—	—	—	—	—	—	—
160*	—	—	—	—	187.0	800.0	187.0	1380.0	—	—	—	—	—	—
200*	185.0	960.0	—	—	400.0	1800.0	400.0	2350.0	—	—	—	—	—	—

*Indicates two smaller fuses in parallel.

TABLE 4
NX Clip-Style Fuse Dimensional Information (See Figure 5 for Dimensional Drawing)

Fuse Description	Mounting Code Number*	Dimensions – inches (mm)		
		A	B	C
1 1/8" diameter fuse for clip mounting	4	10.0 (254)	1.13 (28.6)	1.00 (25)
2" diameter fuse for clip mounting	4	10.0 (254)	2.00 (51)	1.00 (25)
	5	14.31 (363)	2.00 (51)	1.00 (25)
	6	17.13 (435)	2.00 (51)	1.00 (25)
3 7/16" diameter fuse for clip mounting	5	14.69 (373)	3.44 (87)	1.19 (30)
	6	17.5 (445)	3.44 (87)	1.19 (30)
	9	27.38 (695)	3.44 (87)	1.19 (30)
	10	35.38 (899)	3.44 (87)	1.19 (30)

*Code number of mounting must match code number of fuse.

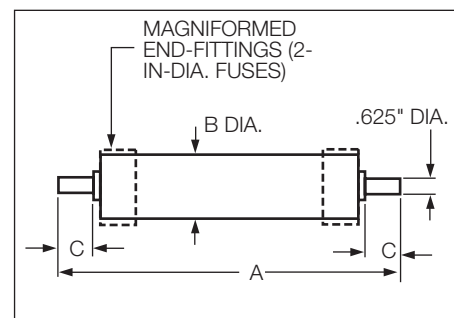


Figure 5.
NX clip style dimensional drawing. (See Table 4 for dimensions.)

TABLE 11
NX Clip-Style Current-Limiting Fuse (Refer to Figure 5)

Voltage (kV)	Rating*		Mounting Code Number	Fuse Diameter (in.)	Catalog Number
	Continuous Current (A)				
4.3	18	4		1.125	FA1H18
	25	4		1.125	FA1H25
	35	4		1.125	FA1H35
	45	4		2	FA1H45
	50	4		2	FA1H50
	65	4		2	FA1H65
	75	4		2	FA1H75
5.5	105	4		2	FA1H100
	6	4		1.125	FA2H6
	8	4		1.125	FA2H8
	10	4		1.125	FA2H10
	12	4		1.125	FA2H12
	18	4		1.125	FA2H18
	20	4		2	FA2H20
	25	4		2	FA2H25
	30	4		2	FA2H30
	40	4		2	FA2H40
8.3	50	4		2	FA2H50
	65	4		2	FA2H65
	75	4		2	FA2H75
	1.5	4		1.125	FA3H1
	3	4		1.125	FA3H3
	4.5	4		1.125	FA3H4
	6	4		1.125	FA3H6
	8	4		1.125	FA3H8
	10	4		1.125	FA3H10
	12	4		1.125	FA3H12
	18	4		2	FA3H18
	20	4		2	FA3H20
	25	4		2	FA3H25
	30	4		2	FA3H30
15.5	40	4		2	FA3H40
	50	5		3.438	FA3H50
	65	5		3.438	FA3H65
	80	5		3.438	FA3H80
	100	5		3.438	FA3H100
	1.5	5		1.125	FA4H1
	3	5		1.125	FA4H3
	4.5	5		1.125	FA4H4
	6	5		2	FA4H6
	8	5		2	FA4H8
23	10	5		2	FA4H10
	12	5		2	FA4H12
	18	5		2	FA4H18
	20	5		2	FA4H20
	25	5		2	FA4H25
	30	5		2	FA4H30
	40	5		2	FA4H40
	50	6		3.438	FA4H50
	65	6		3.438	FA4H65
	80	6		3.438	FA4H80
	100	6		3.438	FA4H100†
	6	6		2	FA5H6
	8	6		2	FA5H8
	10	6		2	FA5H10
27	12	6		2	FA5H12
	18	6		2	FA5H18
	20	6		2	FA5H20
	25	6		2	FA5H25
	30	6		2	FA5H30
	40	6		2	FA5H40
	6	9		3.438	FA9H6
	8	9		3.438	FA9H8
	10	9		3.438	FA9H10
	12	9		3.438	FA9H12
38	15	9		3.188	FA9H15
	18	9		3.438	FA9H18
	20	9		3.438	FA9H20
	25	9		3.438	FA9H25
	30	9		3.438	FA9H30
	40	9		3.438	FA9H40
	50	9		3.438	FA9H50
	6	10		3.438	FA10H6
	8	10		3.438	FA10H8
	10	10		3.438	FA10H10
	12	10		3.438	FA10H12
	18	10		3.438	FA10H18
	20	10		3.438	FA10H20
	25	10		3.438	FA10H25
	30	10		3.438	FA10H30
	40	10		3.438	FA10H40
	50	10		3.438	FA10H50

* 4.3, 5.5, 8.3, 15.5, 23 kV have 50,000 A symmetrical rating, 27 and 38 kV have 35,000 A symmetrical rating.

** Code number of mounting must match code number of fuse or switchblade.