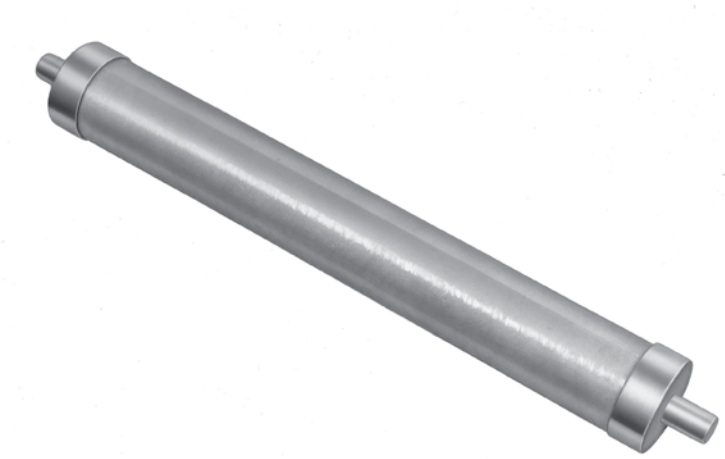
Fusing Equipment
Catalog Data
CA132053EN

Effective March 2023
Supersedes November 2015

COOPER POWER SERIES

ELX full-range current-limiting fuse



General

Eaton's Cooper Power™ series ELX fuse is a full-range current-limiting fuse designed to provide overcurrent protection. It is completely interchangeable with similar fuses using industry standard clip-style and drywell canister mountings.

Quiet, safe operating characteristics of the ELX fuse make it ideal for installations where flame discharge and loud operation are undesirable.

Typical applications include clip mounting air-insulated apparatus, pad-mounted equipment sectionalizing enclosures, metal-clad switchgear, and industrial vaults. Because the ELX fuse has no gas-evolving parts, it is ideal for use in drywell canisters. This fuse is also used in field re-fusible bushings, such as those used on pole-type and livefront pad-mounted transformers.

Both deadbreak and loadbreak drywell canisters manufactured by Eaton, General Electric, Westinghouse, and Kuhlman can be re-fused using the ELX fuse.

Production tests

Tests are conducted in accordance with Eaton requirements.

- Physical Inspection
- I^2t testing
- Resistance testing

Powering Business Worldwide

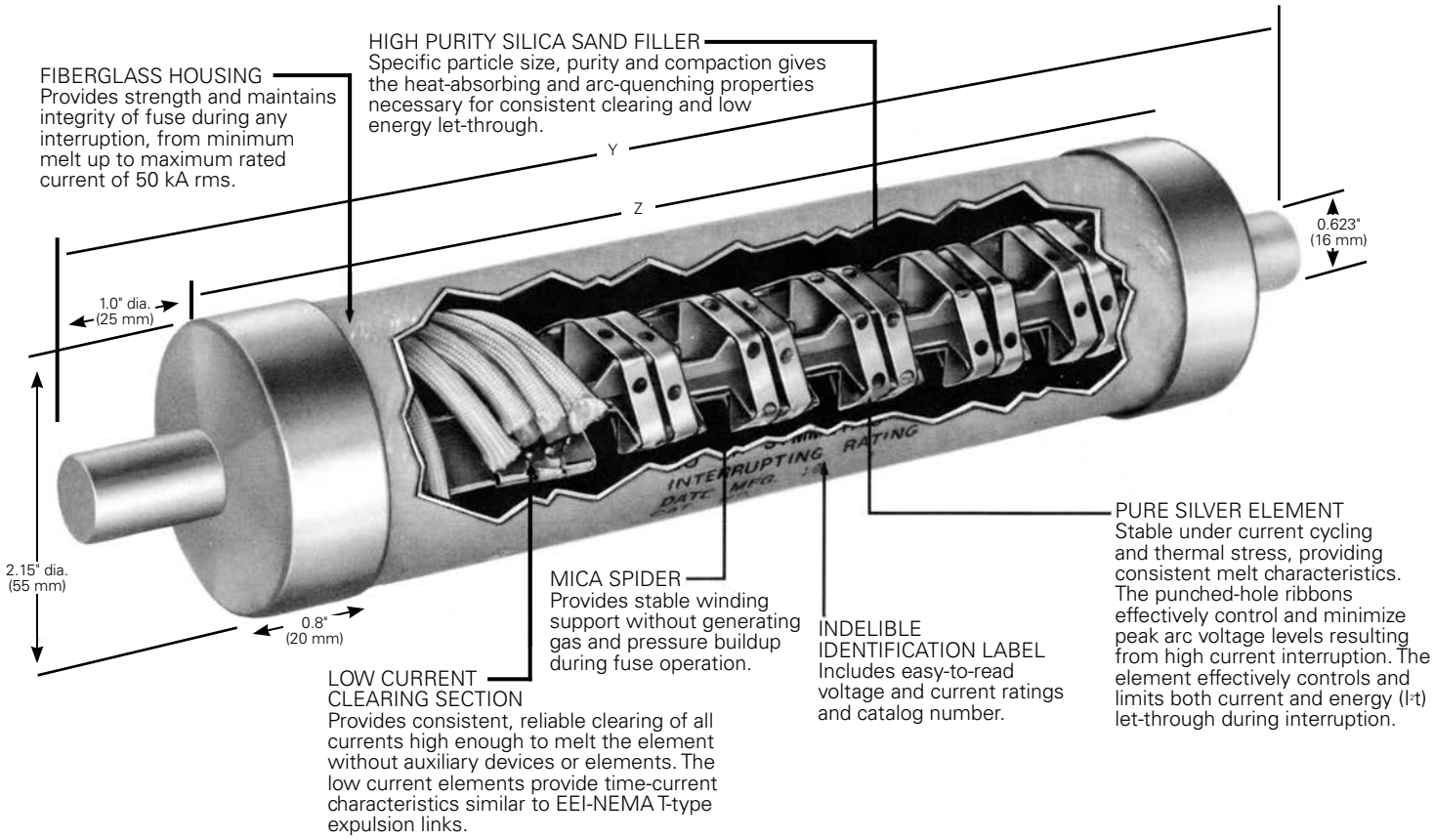


Figure 1. ELX full-range current-limiting fuse cutaway shows detail and dimensions. This fuses's dimensions allow mounting in industry-standard clip-style and drywell canister mountings.

Note: Dimensions given are for reference only.

Table 1. Electrical characteristics

Fuse type	General purpose (full range) C rated
Maximum interrupting current	50,000 A rms symmetrical

Table 2. ELX fuse dimensional information—dimensions in inches (mm)

Voltage (kV)	Mounting code	Y	Z ①
8.3	4	10.11 (257)	8.20 (208)
15.5	5	14.37 (365)	12.46 (316)
23.0	6	17.21 (437)	15.41 (391)

① Maximum allowable length, including 0.060 inch thick solder tab at each end.

Table 3. Electrical ratings

	8.3 kV ①		15.5 kV ②		23 kV	
C rating (A)	Minimum melt I²t (A²•s)	Maximum clear I²t (A²•s)	Minimum melt I²t (A²•s)	Maximum clear I²t (A²•s)	Minimum melt I²t (A²•s)	Maximum clear I²t (A²•s)
3	820	4700	820	4700	820	4700
6	820	4700	820	4700	820	4700
8	1458	9800	1458	9800	1458	9800
12	1458	9800	1458	9800	1458	9800
18	2277	13,800	2277	13,800	2277	13,800
20	2277	13,800	2277	13,800	2277	13,800
25	3280	27,300	3280	27,300	3,280	27,300
30	9100	53,400	9110	53,400	9,110	56,650
40	9100	53,400	9110	53,400	9,110	56,650
50	17,800	86,700	17,800	75,600	13,120	69,200
60	36,440	213,200	36,440	226,600	36,440	226,600
80	36,440	213,200	36,440	226,600	36,440	226,600
100	71,200	327,000	71,200	327,000	—	—

① Tested and approved through 9.9 kV except for 50 A rated fuse.

② Tested and approved through 17.2 kV at 50 kA except for 50 A rated fuse that is tested and approved through 15.5 kV at 20 kA maximum interrupting current and parallel 50 A fuses tested and approved through 15.5 kV at 20 kA maximum.

Note: Shaded area indicates parallel fuse applications.

Ordering information

To order an ELX full-range current-limiting fuse, determine the amperage and voltage requirements of the application and specify the fuse required from **Table 4**. For parallel fusing, order two fuses.

Method A

Using the correlation tables

Use the correlation information in **Table 5** and **Table 6** to determine the amperage and voltage ratings of the fuse required for the application. Then use **Table 4** to determine the fuse catalog number.

Correlation is based on IEEE Std C57.92™ Loading Guide and IEEE Std C57.109™ Through-Fault Guide, and Reference Data TD132004EN Pad-Mounted Transformer Fusing Philosophies.

Contact your Eaton representative for further information or other applications.

Method B

Using time-current curves

To determine or confirm the ELX fuse that will coordinate with upstream and downstream system requirements, use the time-current characteristic curves and specify the fuse indicated from **Table 4**.

Table 4. ELX full-range current-limiting fuse

Continuous current rating (A)	Catalog number		
	8.3 kV	15.5 kV	23 kV
3	**3563003M11M**	**3564003M11M**	**3565003M11M**
6	**3563006M11M**	**3564006M11M**	**3565006M11M**
8	**3563008M11M**	**3564008M11M**	**3565008M11M**
12	**3563012M11M**	**3564012M11M**	**3565012M11M**
18	**3563018M11M**	**3564018M11M**	**3565018M11M**
20	**3563020M11M**	**3564020M11M**	**3565020M11M**
25	**3563025M11M**	**3564025M11M**	**3565025M11M**
30	**3563030M11M**	**3564030M11M**	**3565030M11M**
40	**3563040M11M**	**3564040M11M**	**3565040M11M**
50	**3563050M11M**	**3564050M11M**	**3565025M11M**
60	**3563030M11M**	**3564030M11M**	**3565030M11M**
80	**3564040M11M**	**3564040M11M**	**3565040M11M**
100	**3563050M11M**	**3564050M11M**	—

Note: Shaded area indicates parallel fuse applications.

Table 5. Recommended fuse current ratings (A) for fuse in drywell canister

	8.3 kV										15.5 kV						23 kV	
	Nominal single-phase voltage (kV) phase-to-ground																	
Single-phase transformer kVA	2.4		4.16		4.8		7.2		7.62		12.0		14.4		16.0		19.9	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
10	6	8	3	6 ①	3	6 ①	—	3 ①	—	3 ①	—	3 ①	—	3 ①	—	3 ①	—	3 ①
15	8	12	—	8	—	6	3	6 ①	3	6 ①	—	3 ①	—	3 ①	—	3 ①	—	3 ①
25	18	20	6	12	6	12	—	6	—	6	3	6 ①	—	3	—	3 ①	—	3
37.5	20	30	12	18	12	18	6	12	6	8	—	6	3	6 ①	3	6 ①	3	6 ①
50	30	40	18	20	18	20	12	12	8	12	—	6	—	6	—	6	3	6 ①
75	50		25	40	20	30	18	20	12	20	6	12	6	12	6	8	—	6
100	50		30	50	25	40	20	25	20	25	12	18	8	12	6	12	6	8
167					50		30	50	30	50	20	25	18	25	18	20	12	18
250							50		50		25	40	20	40	20	30	18	25
333											40	50	30	50	25	40	20	30
500													50		40		40	

① Fuse allows load greater than 300%.

Notes: Recommendations are based on fuse melting characteristics at a maximum oil temperature of 100 °C. Recommended fuses meet inrush criteria of 12 times transformer full load for 0.1 second, and 25 times transformer full load for 0.01 second. Fuses have been derated 12% plus 0.2% per degree C above 25 °C for drywell canister application.

Column A = 140%–200% of transformer rating.

Column B = 200%–300% of transformer rating.

Note: Shaded area indicates parallel fuse applications.

Ordering information (continued)

Table 6. Recommended fuse current ratings (A)

	8.3 kV										15.5 kV				23 kV					
	Nominal three-phase voltage (kV) phase-to-phase																			
Three-phase transformer kVA	2.4		4.16		4.8		7.2–7.96		8.32		12.47		13.2–14.4 ①		20.8		22.9–24.9 ②		34.5 ②	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
ELX fuse mounted in air ③																				
15	—	6 ④	—	3	—	3	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④
22.5	—	6	3	6 ④	3	6 ④	—	3	—	3	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④
30	8	12	—	6	—	6 ④	3	6 ④	—	3	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④
45	12	18	6	8	6	8	—	6 ④	—	6 ④	—	3	—	3	—	3 ④	—	3 ④	—	3 ④
75	20	40	12	18	12	18	6	8	—	6	—	6 ④	—	6 ④	—	3	—	3	—	3 ④
100	25	40	18	20	18	20	8	12	6	12	—	6	—	6	3	6 ④	3	6 ④	—	3
112.5	30	40	18	20	18	20	8	18	8	12	—	6	—	6	3	6 ④	3	6 ④	—	3
150	40	50	20	30	20	25	18	20	12	18	8	12	6	12	—	6	—	6	3	6 ④
200	50	80	30	40	25	40	20	25	18	20	12	18	12	18	6	8	—	8	3	6 ④
225	60	80	40	50	40	50	25	30	18	30	12	18	12	18	6	12	—	12	—	6
300	80	—	50	60	40	50	25	40	20	30	18	20	18	20	8	12	8	12	6	8
500	—	—	80	—	80	—	40	60	40	50	25	40	25	40	18	25	18	25	12	18
750	—	—	—	—	—	—	60	100	50	80	40	50	40	50	25	40	20	40	18	25
1000	—	—	—	—	—	—	80	—	50	80	50	80	50	80	30	40	30	40	20	25
1500	—	—	—	—	—	—	—	—	—	—	80	—	80	—	50	60	40	60	25	40
2000	—	—	—	—	—	—	—	—	—	—	—	—	100	—	60	80	50	80	40	60
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	80	—	80	—	50	60
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	80	—	60	80
ELX fuse mounted in drywell canister ⑤																				
15	—	6	3	6 ④	3	6 ④	—	3	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④
22.5	6	12	—	6	—	6	3	6 ④	—	3	—	3 ④	—	3 ④	—	3 ④	—	3 ④	—	3 ④
30	8	18	—	6	—	6	3	6 ④	3	6 ④	—	3	—	3	—	3 ④	—	3 ④	—	3 ④
45	18	20	6	12	6	12	—	6	—	6	3	6 ④	3	6 ④	—	3	—	3 ④	—	3 ④
75	25	40	18	20	12	18	6	12	6	12	—	6	—	6	3	6 ④	3	6 ④	—	3
100	40	50	20	25	18	20	12	18	8	12	6	8	6	8	—	6	3	6 ④	—	3
112.5	40	50	20	30	20	25	12	18	12	18	6	12	6	12	—	6	—	6	3	6 ④
150	50	80	25	40	25	40	18	20	18	20	8	18	8	18	—	6	—	6	3	6 ④
200	80	—	40	50	30	50	20	30	20	25	12	20	12	20	6	12	6	8	—	6
225	80	—	40	60	40	50	25	40	20	30	18	20	12	20	6	12	6	12	—	6
300	—	—	50	80	50	80	30	50	30	40	20	25	20	25	12	18	12	18	6	8
500	—	—	100	—	80	—	50	80	50	80	30	50	30	50	20	25	18	25	12	18
750	—	—	—	—	—	—	80	—	80	—	50	80	50	80	25	40	25	40	18	25
1000	—	—	—	—	—	—	—	—	100	—	60	100	60	100	40	50	40	50	20	30
1500	—	—	—	—	—	—	—	—	—	—	100	—	100	—	50	80	50	80	40	50
2000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	80	—	80	—	50	80
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	60	80
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	80	—

① For 26.7 kV phase-to-phase applications, contact your Eaton representative. Request Application Guide CP8708.

② Limited to gnd Y/gnd Y transformer with no more than 20% delta connected secondary load (phase-to-ground rated fuses are frequently recommended for Y-Y connections).

③ Recommendations are based on fuse melting characteristics at ambient temperature of 40 °C. Fuses have been derated 0.4% per degree C above 25 °C.

④ Fuse allows load greater than 300%.

⑤ Recommendations are based on fuse melting characteristics at maximum oil temperature of 100 °C. Fuses have been derated 12% plus 0.2% per degree C above 25 °C.

Notes: Recommended fuses meet inrush criteria of 12 times transformer full load current of 0.1 second, and 25 times transformer full load for 0.01 second.

Column A = 140%–200% of transformer rating.

Column B = 200%–300% of transformer rating.

Note: Shaded area indicates parallel fuse applications.

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Printed in USA
Publication No. CA132053EN / ZD27316
March 2023

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