

A fusible solution for virtually every medium voltage application



Bussmann series
E-Rated, R-Rated and PT
medium voltage fuses

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Introduction

Worldwide circuit protection solutions

Eaton is the world-leading supplier of Bussmann series medium voltage fuses. Each product is backed by an efficient worldwide distribution network with unrivaled service and technical support. Eaton circuit protection solutions comply with major international standards: ANSI, BS, DIN, IEC and UL.

Fuse types

Medium voltage fuses generally fit into two categories – expulsion fuses and current limiting. The definitions per ANSI C37.40 are:

Expulsion fuse: A vented fuse in which the expulsion effect of the gases produced by internal arcing, either alone or aided by other mechanisms results in current interruption. Expulsion fuses will limit the duration of an overcurrent event, but they will not limit the magnitude of fault current.

Current-limiting fuse: A fuse unit that, when in its current-responsive element is melted by a current within the fuse's specified current-limiting range, abruptly introduces a high resistance to reduce current magnitude and duration, resulting in subsequent current interruption. A current limiting fuse will reduce the magnitude a fault current as well as limit the duration of the overcurrent event when operating in its current limiting range. Eaton offers a broad range of current limiting fuses for protection of feeders, transformers and motor circuits designed to ANSI, BS, DIN and IEC standards.

Medium voltage current-limiting fuses

Current-limiting fuses are classified into three categories:

1. **Full range** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum rated interrupting current down to the minimum continuous current that causes the melting of the fusible element(s), when the fuse is applied at the maximum ambient temperature specified by the manufacturer.” It is able to interrupt any current that will melt its element.
2. **General purpose** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum rated interrupting current down to the current that causes melting of the fusible element(s) in one hour.” Not all currents fall within this range. It is possible for the fuse to be exposed to an overcurrent lower than the value given by the one hour criteria. In that case, a different overcurrent protection device would be required to interrupt the overcurrent.
3. **Back-up** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum interrupting rating current down to the minimum interrupting current.” The minimum interrupting current is the lowest current that the fuse will be able to clear properly. This creates a need to place a low current interrupting device, such as motor overloads, in series with the back-up rated fuse.

E- and R-Rated fuses

In North America, current limiting fuses typically fall into the category of E-Rated fuses and R-Rated fuses. Eaton also offers a wide range of Bussmann series current limiting fuses designed to BS, DIN and IEC standards.

E-Rated fuses are used to protect feeder circuits, power transformers and potential transformers. E-Rated fuses have defined current response times specified by ANSI C37.46. E-Rated fuses 100 amps and below must melt in 300 seconds at an RMS current within the range of 200 to 240 percent of the continuous current rating. E-Rated fuses above 100 amps must melt in 600 seconds at an RMS current within the range of 220 to 264 percent of the continuous current rating of the fuse. Eaton offers a wide variety of full range and general purpose E-Rated fuses from 2.4 to 38 kV.

R-Rated fuses are back-up fuses that provide short-circuit protection for motor circuits. They are applied with medium voltage motor starters which provide the overload protection for the circuit. R-Rated fuses also have defined current response times specified by ANSI C37.46. R-Rated fuses will melt in a range of 15 to 35 seconds at a current equal to 100 times the “R” rating. Bussmann series R-Rated fuses for motor circuit protection are available in voltage ratings from 2.4 to 8.3 kV.

2.75 kV E-Rated medium voltage ferrule fuses

Catalog symbols

- 2CLE_-E
- JCX_-E

Ratings

- Volts 2.75 kV
- Amps 10 to 450 A
- Interrupting ratings
 - 50 kA RMS Sym. (2CLE_-E)
 - 40 kA RMS Sym. (JCX_-E)

Agency information

- E-Rated fuses meet the performance characteristics of ANSI C37.46

Recommended CLE fuse holders

						Catalog no.			
Amps	Fuse mounting type	BIL (kV)	Approx. dimensions — in (mm)			Mounting*		Live parts (with end fittings)	End fittings (disconnect only)
			Diameter A	Clip center B	Length C	Porcelain insulator	Glass-polyester insulator		
CLE									
15E–25E Single barrel	Non-disconnect	60	2 (51)	8.1 (206)	9.5 (241)	2CLE-PNM-C	2CLE-GNM-C	CLE-NL-C	—
	Disconnect†					2CLE-PDM-C	2CLE-GDM-C	CLE-DL-C	CLE-DF-C
10E–225E Single barrel	Non-disconnect		3 (76)	7 (178)	10.9 (277)	2CLE-PNM-D	2CLE-GNM-D	CLE-NL-D	—
	Disconnect†					2CLE-PDM-D	2CLE-GDM-D	CLE-DL-D	CLE-DF-D
250E–300E 350X-450X Double barrel	Non-disconnect		2CLE-PNM-E	2CLE-GNM-E	CLE-NL-E	—			
	Disconnect†		2CLE-PDM-E	2CLE-GDM-E	CLE-DL-E	CLE-DF-E			

* Includes live parts and end fittings, end fittings supplied only when required.

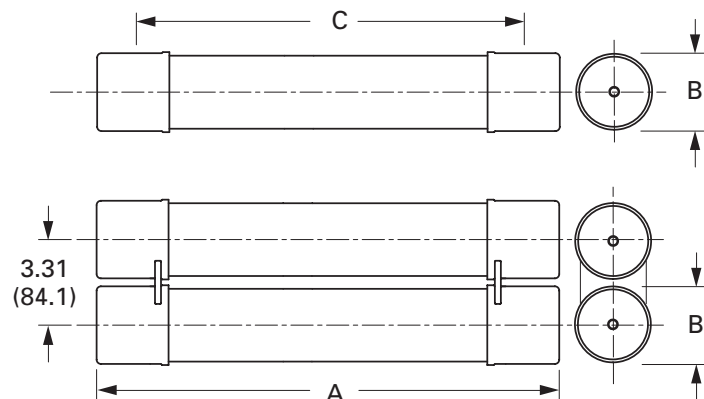
† Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

Recommended fuseclips

Description	Fuse dia. — in (mm)	Catalog no.
Enclosed fuseclip	2 (51)	A3354710*
		A3354730*
Open fuseclip	3 (76)	1A0065
Spring loaded open fuseclip		9078A67G04

* For single barrel applications only. Not sold in pairs.

Dimensions — in (mm)



CLE and JCX

Dimensions — in (mm)				IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.				
Amps	Length A	Diameter B	Clip centers C								
1	9.2 (234)	2 (51)	7 (178)	40	1	Indoor/outdoor	JCX-1E				
2							JCX-2E				
3							JCX-3E				
5							JCX-5E				
7							JCX-7E				
10							JCX-10E				
10	10.9 (277)	3 (76)	8.1 (206)	50		Indoor	2CLE-10E				
15	9.5 (241)	2 (51)					2CLE-15E				
20							2CLE-20E				
25							2CLE-25E				
30							2CLE-30E				
40							2CLE-40E				
50							2CLE-50E				
65							2CLE-65E				
80							2CLE-80E				
100							2CLE-100E				
125	10.9 (277)	3 (76)	7 (178)		2		2CLE-125E				
150							2CLE-150E				
200							2CLE-200E				
225							2CLE-225E				
250*							2CLE-250E				
300*							2CLE-300E				
350**							2CLE-350X				
400**							2CLE-400X				
450**							2CLE-450X				

* 250 and 300 amp ratings may also be applied at 280 and 325 amps respectively, but fuses will no longer be complaint with ANSI E rating criteria.

**Does not comply with ANSI C37.46 for "E" rating.

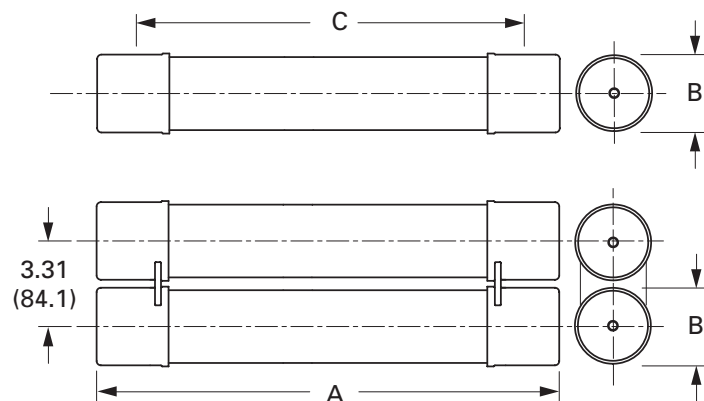
5.5 kV E-Rated medium voltage ferrule fuses

Catalog symbols

- General purpose
 - 5CLE-_E-D (10-25 A)
 - 5CLE-_E (10-1350 A)
 - 5HLE-_E (10-450 A)
 - JCY-_E (1-25 A)
- Full range (per ANSI C37.40)
 - MV055F_ (10-450 A)



Dimensions — in (mm)



Ratings*

- Volts 5.5 kV
- Amps 1 to 1350 A
- Interrupting ratings 40 to 63 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

- E-Rated fuses meet the performance characteristics of ANSI C37.46
- UL Listed, Guide JEEG, File E240398. See catalog numbers.

Recommended fuseclips

Description	Fuse dia. — in (mm)	Catalog no.
Enclosed fuseclip	2 (51)	A3354710*
		A3354730*
Open fuseclip	3 (76)	1A0065
Spring loaded open fuseclip		9078A67G04

* For single barrel applications only. Not sold in pairs.

Recommended CLE and HLE holders

						Catalog no.			
Amps	Fuse mounting type	BIL (kV)	Approx. Dimensions — in (mm)			Mounting*		Live parts (with end fittings)	End fittings (disconnect only)
			Diameter A	Clip center B	Length C	Porcelain insulator	Glass-polyester insulator		
CLE									
10E-D–25E-D 30E–250E Single barrel	Non-disconnect	60	3.0 (76.2)	14.0 (355.6)	17.9 (454.7)	5CLE-PNM-D	5CLE-GNM-D	CLE-NL-D	—
	Disconnect†					5CLE-PDM-D	5CLE-GDM-D	CLE-DL-D	CLE-DF-D
15E–25E Single barrel	Non-disconnect		2.0 (50.8)	11.5 (292.1)	12.9 (327.7)	5CLE-PNM-C	5CLE-GNM-C	CLE-NL-C	—
	Disconnect†					5CLE-PDM-C	5CLE-GDM-C	CLE-DL-C	CLE-DF-C
300E–450E Double barrel	Non-disconnect		3.0 (76.2)	14.0 (355.6)	17.9 (454.7)	5CLE-PNM-E	5CLE-GNM-E	CLE-NL-E	—
	Disconnect†					5CLE-PDM-E	5CLE-GDM-E	CLE-DL-E	CLE-DF-E
600E and 750E Double barrel	Consult factory		4.0 (101.6)	N/A	N/A	—	—	—	—
1100E and 1350E Four barrel	Consult factory								
HLE									
10E-D–250E Single barrel	Non-disconnect	60	3.0 (76.2)	12.0 (304.8)	15.9 (403.9)	5HLE-PNM-D	5HLE-GNM-D	CLE-NL-D	—
	Disconnect					5HLE-PDM-D	5HLE-GDM-D	CLE-DL-D	CLE-DF-D
300E–450E Double barrel	Non-disconnect					5HLE-PNM-E	5HLE-GNM-E	CLE-NL-E	—
	Disconnect					5HLE-PDM-E	5HLE-GDM-E	CLE-DL-E	CLE-DF-E

* Including live parts and end fittings, end fittings supplied only when required.

† Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

Medium voltage fuses

CLE, HLE and JCY general purpose

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
	Length A	Diameter B	Clip centers C				
1	11.2 (284)	2 (51)	9 (229)	40	1	Indoor/outdoor	JCY-1E
2							JCY-2E
3							JCY-3E
5							JCY-5E
7							JCY-7E
10							JCY-10E
10	17.9 (455)	3 (76)	14 (356)	63		Indoor	5CLE-10E-D
10	15.9 (404)		12 (305)				5HLE-10E
15	11.2 (284)	2 (51)	9 (229)	40		Indoor/outdoor	JCY-15E
15	12.9 (328)		11.5 (292)	50			5CLE-15E*
15	17.9 (455)	3 (76)	14 (356)	63		Indoor/outdoor	5CLE-15E-D
15	15.9 (404)		12 (305)				5HLE-15E
20	11.2 (284)	2 (51)	9 (229)	40		Indoor	JCY-20E
20	12.9 (328)		11.5 (292)	50			5CLE-20E*
20	17.9 (455)	3 (76)	14 (356)	63		Indoor/outdoor	5CLE-20E-D
20	15.9 (404)		12 (305)				5HLE-20E
25	11.2 (284)	2 (51)	9 (229)	40		Indoor	JCY-25E
25	12.9 (328)	2 (51)	11.5 (292)	50			5CLE-25E*
25	17.9 (455)	3 (76)	14 (356)	63		Indoor/outdoor	5CLE-25E-D
25	15.9 (404)		12 (305)				5HLE-25E
30	17.9 (455)		14 (356)				5CLE-30E
30	15.9 (404)		12 (305)				5HLE-30E
40	17.9 (455)		14 (356)				5CLE-40E†
40	15.9 (404)		12 (305)				5HLE-40E†
50	17.9 (455)		14 (356)				5CLE-50E†
50	15.9 (404)		12 (305)				5HLE-50E†
65	17.9 (455)		14 (356)				5CLE-65E†
65	15.9 (404)		12 (305)				5HLE-65E†
80	17.9 (455)	3 (76)	14 (356)	65		Indoor/outdoor	5CLE-80E†
80	15.9 (404)		12 (305)				5HLE-80E†
100	17.9 (455)		14 (356)				5CLE-100E†
100	15.9 (404)		12 (305)				5HLE-100E†
125	17.9 (455)		14 (356)				5CLE-125E†
125	15.9 (404)		12 (305)				5HLE-125E†
150	17.9 (455)		14 (356)				5CLE-150E†
150	15.9 (404)		12 (305)				5HLE-150E†
175	17.9 (455)		14 (356)				5CLE-175E†
175	15.9 (404)		12 (305)				5HLE-175E†
200	17.9 (455)	3 (76)	14 (356)	65		Indoor/outdoor	5CLE-200E†
200	15.9 (404)		12 (305)				5HLE-200E†
250	17.9 (455)		14 (356)				5CLE-250E†
250	15.9 (404)		12 (305)				5HLE-250E†
300	17.9 (455)		14 (356)				5CLE-300E†
300	15.9 (404)		12 (305)				5HLE-300E†
350	17.9 (455)		14 (356)				5CLE-350E†
350	15.9 (404)		12 (305)				5HLE-350E†
400	17.9 (455)		14 (356)				5CLE-400E†
400	15.9 (404)		12 (305)				5HLE-400E†
450	17.9 (455)	3 (76)	14 (356)	65	2	Indoor/outdoor	5CLE-450E†
450	15.9 (404)		12 (305)				5HLE-450E†

* Fuses conform to dimensional standards established by Westinghouse.

† UL Listed, Guide JEEG, File E240398.

MV055 full range

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of Barrels	Installation location	Catalog no.
	Length A	Diameter B	Clip centers C				
5	15.7 (399)	2 (51)	12 (305)	50	1	Indoor	MV055F1CAX5E
7							MV055F1CAX7E
10		3 (76)					MV055F1CAX10E
10							MV055F1DAX10E
15		2 (51)					MV055F1CAX15E
15		3 (76)					MV055F1DAX15E
20		2 (51)					MV055F1CAX20E
20		3 (76)					MV055F1DAX20E
25		2 (51)					MV055F1CAX25E
25		3 (76)					MV055F1DAX25E
30		2 (51)					MV055F1CAX30E
30		3 (76)					MV055F1DAX30E
40		2 (51)					MV055F1CAX40E
40		3 (76)					MV055F1DAX40E
50		2 (51)					MV055F1CAX50E
50		3 (76)					MV055F1DAX50E
65	2 (51)	MV055F1CAX65E					
65	3 (76)	MV055F1DAX65E					
80		MV055F1DAX80E					
100		MV055F1DAX100E					
125		MV055F1DAX125E					
150		MV055F1DAX150E					
175		MV055F1DAX175E					
200		MV055F1DAX200E					
250		MV055F2DAX250E					
300		MV055F2DAX300E					
350		MV055F2DAX350E					
400	MV055F2DAX400E						
450	MV055F2DAX450E						

Recommended MV055 fuseclips

Description	Fuse dia. — in (mm)	Catalog no.
Enclosed fuseclip	2 (51)	A3354710*
		A3354730*
Open fuseclip	3 (76)	1A0065
Spring loaded open fuseclip		9078A67G04

* For single barrel applications only. Not sold in pairs.

5.5 kV E-Rated medium voltage specialty mount fuses

Catalog symbols

- 5AHLE_E (for Eaton AMPGARD motor starting assemblies)
- 5BHLE_E / 5BHCL_E (bolt-on version)
- 5CLE_E
- 5HCL_E (clip-lock version)

Ratings*

- Volts 5.5 kV
- Amps 10 to 900 A
- Interrupting ratings 31 to 63 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

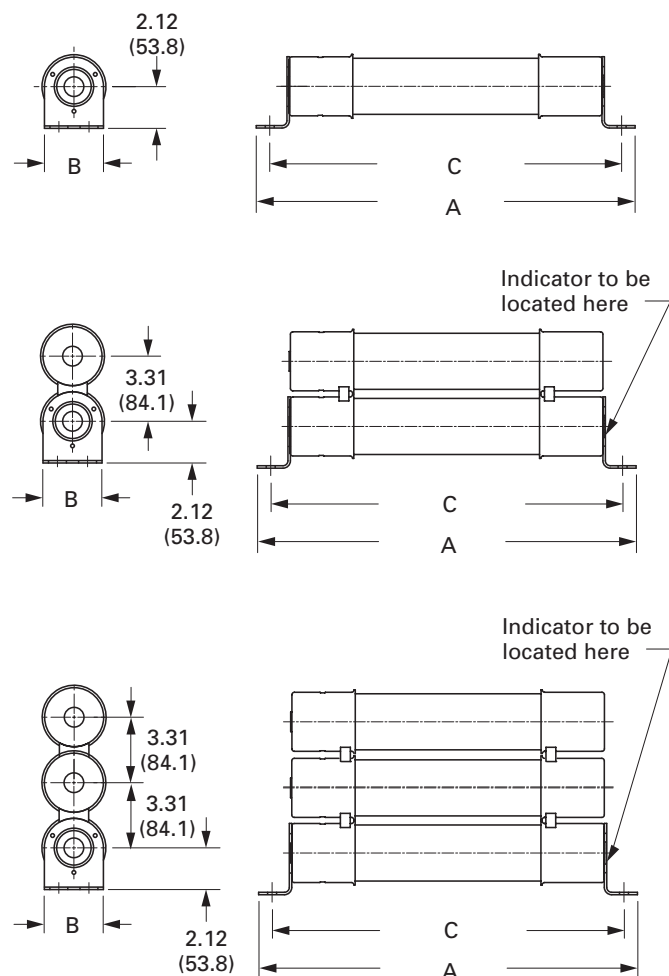
- E-Rated fuses meet the performance characteristics of ANSI C37.46

Recommended live parts for clip-lock fuses

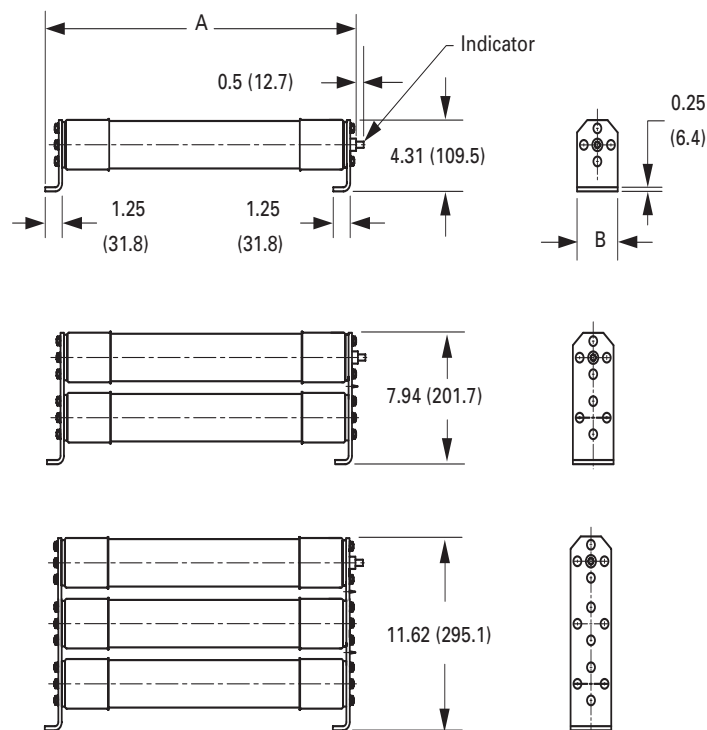
- Catalog number HCL-NL-1

Dimensions — in (mm)

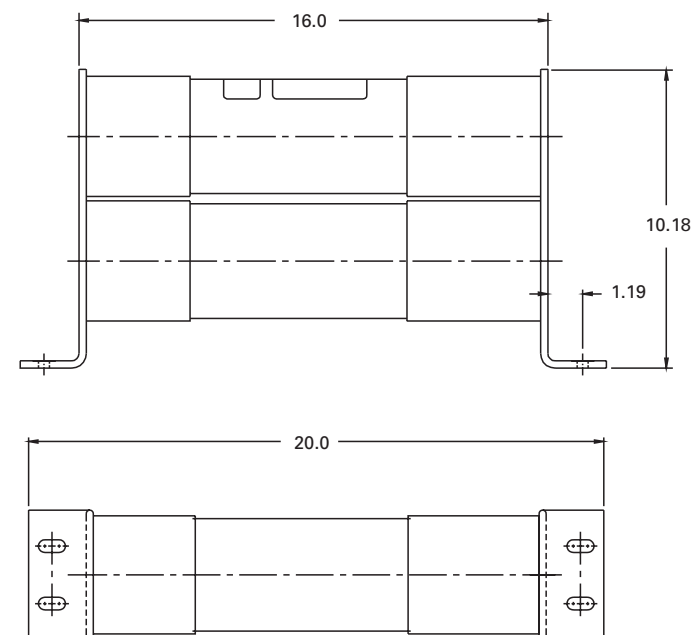
BHLE bolt-on



HCL clip-lock



CLE four-barrel bolt-on



Note: 1100E and 1350E fuses require two double barrel fuses (4 total barrels) customer to parallel.

AHLE for Eaton AMPGARD motor starting assemblies

Amps	IR RMS Sym. (kA)	No. of barrels	Catalog no.
10	65	1	5AHLE-10E
15			5AHLE-15E
20			5AHLE-20E
25			5AHLE-25E
30			5AHLE-30E
40			5AHLE-40E†
50			5AHLE-50E†
65			5AHLE-65E†
80			5AHLE-80E†
100			5AHLE-100E†
125			5AHLE-125E†
150			5AHLE-150E†
175			5AHLE-175E†
200			5AHLE-200E†
250			5AHLE-250E†
300		2	5AHLE-300E†
350			5AHLE-350E†
400			5AHLE-400E†
450			5AHLE-450E†

† UL Listed, Guide JEEG, File E240398.

HCL clip-lock versions

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
	Length A	Diameter B	Hole centers C				
10	16.8 (427)	3 (76)	N/A	65	1	Indoor	5HCL-10E
15							5HCL-15E
20							5HCL-20E
25							5HCL-25E
30							5HCL-30E
40							5HCL-40E†
50							5HCL-50E†
65							5HCL-65E†
80	22.8 (579)	3 (76)	N/A	65	2	Indoor	5HCL-80E†
100							5HCL-100E†
125							5HCL-125E†
150							5HCL-150E†
200							5HCL-200E†
250							5HCL-250E†
300							5HCL-300E†
400							5HCL-400E†
450							5HCL-450E†
500							5HCL-500E
600							5HCL-600E

† UL Listed, Guide JEEG, File E240398.

CLE, BHLE and BHCL bolt-on versions

Dimensions — in (mm)				IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.			
Amps	Length A	Diameter B	Hole centers C							
10	19.2 (488)	3 (76)	17.9 (455)	65	1	Indoor	5BHLE-10E			
15							5BHLE-15E			
20							5BHLE-20E			
25							5BHLE-25E			
30							5BHLE-30E			
40							5BHLE-40E†			
50							5BHLE-50E†			
65							5BHLE-65E†			
80							5BHLE-80E†			
100							5BHLE-100E†			
125							5BHLE-125E†			
150							5BHLE-150E†			
175							5BHLE-175E†			
200							5BHLE-200E†			
200	25.1 (637)		23.7 (602)	2		Indoor	5BHCL-200E			
250	19.2 (488)		17.9 (455)				5BHLE-250E†			
250	25.1 (637)		23.7 (602)				5BHCL-250E			
300	19.2 (488)		17.9 (455)				5BHLE-300E†			
300	25.1 (637)		23.7 (602)				5BHCL-300E			
350	19.2 (488)		17.9 (455)				5BHLE-350E†			
400							5BHLE-400E†			
400	25.1 (637)		23.7 (602)				5BHCL-400E			
450	19.2 (488)		17.9 (455)				5BHLE-450E†			
450	25.1 (637)		23.7 (602)				5BHCL-450E			
500							5BHCL-500E			
600							5BHCL-600E			
600	28.9 (734)	4 (102)	18.4 (467)				40	3		5CLE-600E
750	25.1 (637)	3 (76)	23.7 (602)				63			5BHCL-750E
750	28.9 (734)	4 (102)	18.4 (467)	40	2	5CLE-750E				
900	25.1 (637)	3 (76)	23.7 (602)	63	3	5BHCL-900E				
1100	19.8 (503)	4 (102)	18.4 (467)	31	4	5CLE-1100E				
1350						5CLE-1350E				

† UL Listed, Guide JEEG, File E240398.

8.3 kV E-Rated medium voltage ferrule fuses

Catalog symbols

- 8CLE_E-D (10-25 A)
- 8CLE_E (10-350 A)
- 8HLE_E (10-350 A)

Ratings*

- Volts 8.3 kV
- Amps 10 to 350 A
- IR 50 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

- E-Rated fuses meet the performance characteristics of ANSI C37.46

Recommended fuseclips

Description	Fuse dia. — in (mm)	Catalog no.
Enclosed fuseclip	2 (51)	A3354710*
		A3354730*
Open fuseclip	3 (76)	1A0065
Spring loaded open fuseclip		9078A67G04

* For single barrel applications only. Not sold in pairs.

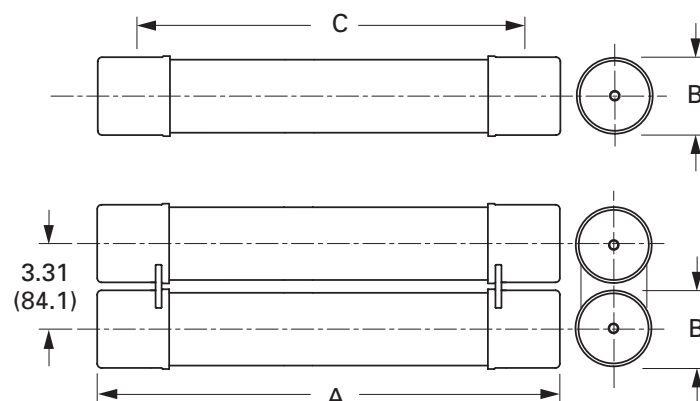
Recommended fuse holders

						Catalog no.				
Amps	Fuse mounting type	BIL (kV)	Approx. dimensions — in (mm)			Mounting*		Live parts (with end fittings)	End fittings (disconnect only)	
			Diameter A	Clip center B	Length C	Porcelain insulator	Glass-polyester insulator			
CLE										
10E-D-25E-D	Non-disconnect	75	3.0 (76)	14 (356)	17.9 (455)	8CLE-PNM-D	8CLE-GNM-D	CLE-NL-D	—	
30E-175E	Disconnect†					8CLE-PDM-D	8CLE-GDM-D	CLE-DL-D	CLE-DF-D	
Single barrel			2.0 (51)		15.5 (394)	8CLE-PNM-C	8CLE-GNM-C	CLE-NL-C	—	
	Disconnect†					8CLE-PDM-C	8CLE-GDM-C	CLE-DL-C	CLE-DF-C	
15E-25E	Non-disconnect	75	3.0 (76)	14 (356)	17.9 (455)	8CLE-PNM-E	8CLE-GNM-E	CLE-NL-E	—	
Single Barrel	Disconnect					8CLE-PDM-E	8CLE-GDM-E	CLE-DL-E	CLE-DF-E	
200E-350E	Non-disconnect		2.0 (51)		15.5 (394)	8CLE-PNM-D	8CLE-GNM-D	CLE-NL-D	—	
Double barrel	Disconnect					8CLE-PDM-D	8CLE-GDM-D	CLE-DL-D	CLE-DF-D	
HLE										
10E-175E	Non-disconnect	75	3.0 (76)	12 (305)	15.9 (404)	8HLE-PNM-D	8HLE-GNM-D	CLE-NL-D	—	
Single barrel	Disconnect†					8HLE-PDM-D	8HLE-GDM-D	CLE-DL-D	CLE-DF-D	
200E-350E	Non-disconnect		3.0 (76)		15.9 (404)	8HLE-PNM-E	8HLE-GNM-E	CLE-NL-E	—	
Double barrel	Disconnect†					8HLE-PDM-E	8HLE-GDM-E	CLE-DL-E	CLE-DF-E	

* Including live parts and end fittings, end fittings supplied only when required.

† Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

Dimensions — in (mm)



CLE and HLE Type fuses

Dimensions — in (mm)				IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
Amps	Length A	Diameter B	Clip centers C				
CLE Long construction (Westinghouse)							
10	17.9 (455)	3 (76)	14 (356)	50	1	Indoor/outdoor	8CLE-10E-D
15	15.5 (394)	2 (51)				Indoor	8CLE-15E *
15	17.9 (455)	3 (76)				Indoor/outdoor	8CLE-15E-D
20	15.5 (394)	2 (51)				Indoor	8CLE-20E *
20	17.9 (455)	3 (76)				Indoor/outdoor	8CLE-20E-D
25	15.5 (394)	2 (51)				Indoor	8CLE-25E *
25							8CLE-25E-D
30							8CLE-30E
40							8CLE-40E
50							8CLE-50E
65							8CLE-65E
80							8CLE-80E
100	17.9 (455)	3 (76)				Indoor/outdoor	8CLE-100E
125							8CLE-125E
150							8CLE-150E
175							8CLE-175E
200							8CLE-200E
250							8CLE-250E
300							8CLE-300E
350							8CLE-350E
HLE Short construction							
10			12 (305)	50	1		8HLE-10E
15							8HLE-15E
20							8HLE-20E
25							8HLE-25E
30							8HLE-30E
40							8HLE-40E
50							8HLE-50E
65							8HLE-65E
80	15.9 (404)	3 (76)				Indoor/outdoor	8HLE-80E
100							8HLE-100E
125							8HLE-125E
150							8HLE-150E
175							8HLE-175E
200							8HLE-200E
250							8HLE-250E
300							8HLE-300E
350							8HLE-350E

* Fuses conform to dimensional standards established by Westinghouse.

8.3 kV E-Rated medium voltage specialty mount fuses

Catalog symbols

- 8AHLE-E (special dimension fuses for use with 7.2 kV rated, 800 amp AMPGARD motor starting assemblies)
- 8BHLE-E (bolt-on version)
- 8HCL-E (clip-lock version)

Ratings*

- Volts 8.3 kV
- Amps 10 to 350 A
- Interrupting rating 50 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

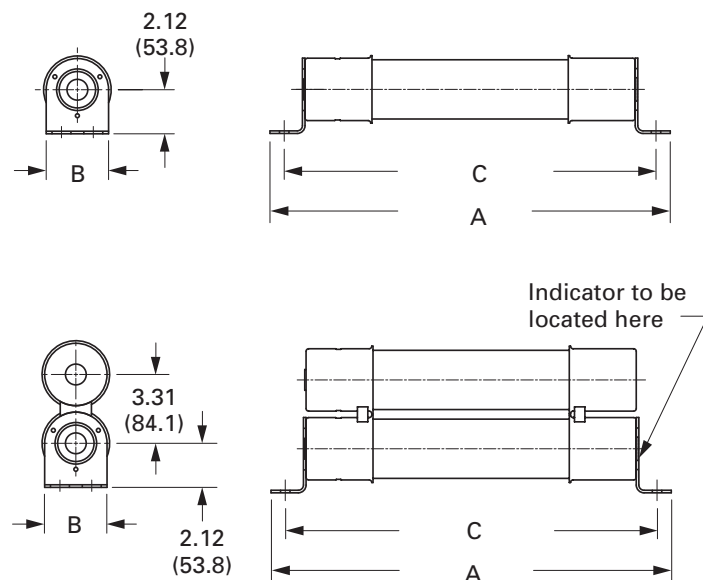
Agency information

- E-Rated fuses meet the performance characteristics of ANSI C37.46

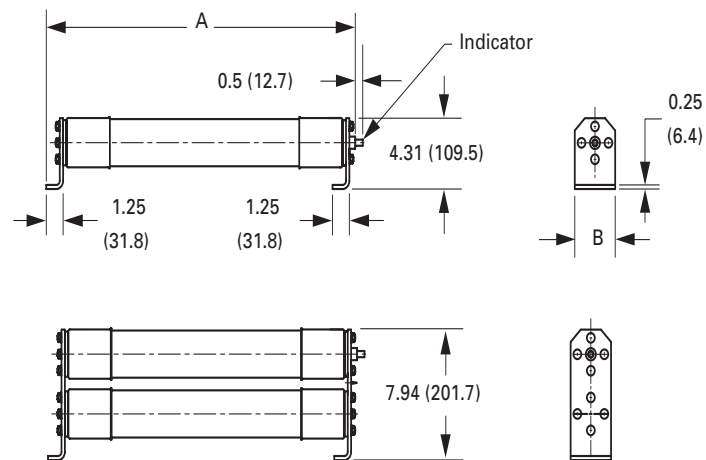
Recommended live parts for clip-lock fuses

- Catalog number HCL-NL-1

Dimensions for BHLE — in (mm)



Dimensions for HCL — in (mm)



Medium voltage fuses

AHLE Type fuses

Special dimension fuses for use with 7.2 kV rated, 800 amp AMPGARD motor starting assemblies.

Amps	IR RMS Sym. (kA)	No. of barrels	Catalog no.
10	50	1	8AHLE-10E
15			8AHLE-15E
20			8AHLE-20E
25			8AHLE-25E
30			8AHLE-30E
40			8AHLE-40E
50			8AHLE-50E
65			8AHLE-65E
80			8AHLE-80E
100			8AHLE-100E
125			8AHLE-125E
150			8AHLE-150E
175			8AHLE-175E
200		2	8AHLE-200E
250			8AHLE-250E
300			8AHLE-300E
350			8AHLE-350E

BHLE bolt-on versions

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
	Overall length	Diameter	Hole centers				
10	19.25 (488.9)	3 (76.2)	17.88 (454.2)	50	1	Indoor	8BHLE-10E
15							8BHLE-15E
20							8BHLE-20E
25							8BHLE-25E
30							8BHLE-30E
40							8BHLE-40E
50							8BHLE-50E
65							8BHLE-65E
80					8BHLE-80E		
100					8BHLE-100E		
125					8BHLE-125E		
150					8BHLE-150E		
175					8BHLE-175E		
200					8BHLE-200E		
250					8BHLE-250E		
300					8BHLE-300E		
350					8BHLE-350E		

HCL Clip lock versions

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.	
	Overall length	Diameter	Hole centers					
65	22.5 (571.5)	3 (76.2)	N/A	50	1	Indoor/outdoor	8HCL-65E	
80							8HCL-80E	
100							8HCL-100E	
125							8HCL-125E	
150							8HCL-150E	
175					2		8HCL-175E	
200							8HCL-200E	
250							8HCL-250E	
300							8HCL-300E	
350							8HCL-350E	

15.5 kV E-Rated medium voltage ferrule fuses

Catalog symbols



- General purpose
 - 15CLE-_E-D (long construction, 10-25 A)
 - 15CLE-_E (long construction, 15-300 A)
 - 15HLE-_E (short construction, 10-250 A)
 - 15LHLE-_E (intermediate construction, 65-300 A)
- Full range (per ANSI C37.40)
 - MV155F_

Ratings*

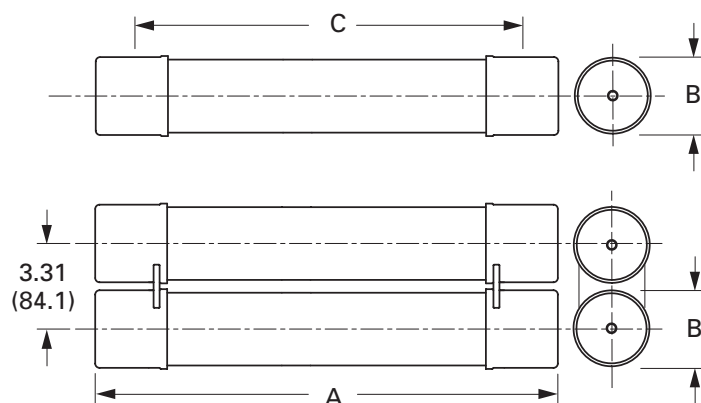
- Volts 15.5 kV
- Amps 10 to 300 A
- Interrupting ratings 31.5 to 63 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

- E-Rated fuses meet the performance characteristics of ANSI C37.46
- UL Listed, Guide JEEG, File E240398. See catalog numbers.

Recommended fuse holders



Dimensions — in (mm)

Recommended fuseclips

Description	Fuse dia. — in (mm)	Catalog no.
Enclosed fuseclip	2 (51)	A3354710*
Open fuseclip	3 (76)	A3354730*
Spring loaded open fuseclip		1A0065
		9078A67G04

* For single barrel applications only. Not sold in pairs.

						Catalog no.			
		Approx. dimensions — in (mm)			Mounting*			Live parts (with end fittings)	End fittings (disconnect only)
Amps	Fuse mounting type	BIL (kV)	Diameter	Clip center	Length	Porcelain insulator	Glass-polyester insulator		
CLE									
15E–25E Single barrel	Non-disconnect	95	2 (51)		21.5 (546)	15CLE-PNM-C	15CLE-GNM-C	CLE-NL-C	—
		110				15CLE-HPNM-C	—	CLE-NL-C	—
	Disconnect†	95				15CLE-PDM-C	15CLE-GDM-C	CLE-DL-C	CLE-DF-C
		110				15CLE-HPDM-C	—	CLE-DL-C	CLE-DF-C
10E-D–25E-D 30E–150E Single barrel	Non-disconnect	95	3 (76)	20 (508)	23.9 (607)	15CLE-PNM-D	15CLE-GNM-D	CLE-NL-D	—
		110				15CLE-HPM-D	—	CLE-NL-D	—
	Disconnect†	95				15CLE-PDM-D	15CLE-GDM-D	CLE-DL-D	CLE-DF-D
		110				15CLE-HPDM-D	—	CLE-DL-D	CLE-DF-D
175E–300E Double barrel	Non-disconnect	110				15CLE-PNM-E	—	CLE-NL-E	—
	Disconnect†	110				15CLE-PDM-E	—	CLE-DL-E	CLE-DF-E
HLE									
10E-125E Single barrel	Non-disconnect	95	3 (76)	15 (381)	18.9 (480)	15HLE-PNM-D	15HLE-GNM-D	CLE-NL-D	—
	Disconnect†	95				15HLE-PDM-D	15HLE-GDM-D	CLE-DL-D	CLE-DF-D
150E–250E Double barrel	Non-disconnect	95				15HLE-PNM-E	—	CLE-NL-E	—
	Disconnect†	95				15HLE-PDM-E	—	CLE-DL-E	CLE-DF-E
LHLE									
65E–150E Single barrel	Non-disconnect	—	3 (76)	18 (457)	20.53 (521)	Not available	Not available	CLE-NL-D	—
	Disconnect†	—						CLE-DL-D	CLE-DF-D
175E–300E Double barrel	Non-disconnect	—						CLE-NL-E	—
	Disconnect†	—						CLE-DL-E	CLE-DF-E

* Including live parts and end fittings, end fittings supplied only when required.

† Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

Medium voltage
fuses

CLE, HLE and LHLE Type general purpose fuses

Dimensions — in (mm)				IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.	
Amps	Length A	Diameter B	Clip centers C					
CLE Long construction								
10	23.9 (607)	3 (76)	20 (508)	63	1	Indoor/outdoor	15CLE-10E-D	
15	21.5 (546)	2 (51)		31.5		Indoor	15CLE-15E*	
15	23.9 (607)	3 (76)		63		Indoor/outdoor	15CLE-15E-D	
20	21.5 (546)	2 (51)		31.5		Indoor	15CLE-20E*	
20	23.9 (607)	3 (76)		63		Indoor/outdoor	15CLE-20E-D	
25	21.5 (546)	2 (51)		31.5		Indoor	15CLE-25E*	
25								15CLE-25E-D
30								15CLE-30E
40								15CLE-40E [†]
50								15CLE-50E [†]
65						15CLE-65E [†]		
80						15CLE-80E [†]		
100	23.9 (607)	3 (76)		63	2	Indoor/outdoor	15CLE-100E [†]	
125						15CLE-125E [†]		
150						15CLE-150E [†]		
175						15CLE-175E [†]		
200						15CLE-200E [†]		
250						15CLE-250E [†]		
300						15CLE-300E [†]		
HLE Short construction								
10						1		15HLE-10E
15							15HLE-15E	
20					15HLE-20E			
25					15HLE-25E			
30					15HLE-30E			
40					15HLE-40E [†]			
50					15HLE-50E [†]			
65	18.9 (480)	3 (76)	15 (381)	63	Indoor/outdoor		15HLE-65E [†]	
80					15HLE-80E [†]			
100					15HLE-100E [†]			
125					15HLE-125E [†]			
150					2	15HLE-150E [†]		
175						15HLE-175E [†]		
200						15HLE-200E [†]		
250						15HLE-250E [†]		
LHLE								
65					1		15LHLE-65E	
80						15LHLE-80E		
100						15LHLE-100E		
125						15LHLE-125E		
150	20.5 (521)	3 (76)	18 (457)	50		Indoor/outdoor	15LHLE-150E	
175					2		15LHLE-175E	
200						15LHLE-200E		
250						15LHLE-250E		
300						15LHLE-300E		

* Fuses conform to dimensional standards established by Westinghouse.

† UL Listed, Guide JEEG, File E240398.

MV155F_ Full range

Amps	Dimensions — in (mm)			IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
	Length A	Diameter B	Clip centers C				
5							MV155F1CBX5E
7		2 (51)					MV155F1CBX7E
10							MV155F1CBX10E
10		3 (76)					MV155F1DBX10E
15		2 (51)					MV155F1CBX15E
15		3 (76)					MV155F1DBX15E
20		2 (51)					MV155F1CBX20E
20	18.7 (475)	3 (76)	15 (381)				MV155F1DBX20E
25		2 (51)					MV155F1CBX25E
25		3 (76)					MV155F1DBX25E
30		2 (51)			1		MV155F1CBX30E
30							MV155F1DBX30E
40							MV155F1DBX40E
50							MV155F1DBX50E
65				50		Indoor	MV155F1DBX65E
65	21.7 (551)		18 (457)				MV155F1DCX65E
80	18.7 (475)		15 (381)				MV155F1DBX80E
80	21.7 (551)		18 (457)				MV155F1DCX80E
100	18.7 (475)		15 (381)				MV155F1DBX100E
100	21.7 (551)	3 (76)	18 (457)				MV155F1DCX100E
125	18.7 (475)		15 (381)				MV155F2DBX125E
125	21.7 (551)		18 (457)				MV155F2DCX125E
150	18.7 (475)		15 (381)				MV155F2DBX150E
150	21.7 (551)		18 (457)				MV155F2DCX150E
175	18.7 (475)		15 (381)		2		MV155F2DBX175E
175	21.7 (551)		18 (457)				MV155F2DCX175E
200	18.7 (475)		15 (381)				MV155F2DBX200E
200	21.7 (551)		18 (457)				MV155F2DCX200E

15.5 kV E-Rated medium voltage specialty mount fuses

Catalog symbols

- 15BHLE-_E (bolt-on version)
- 15HCL-_E (clip-lock version)

Ratings*

- Volts 15.5 kV
- Amps 10 to 300 A
- Interrupting ratings 50 to 63 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

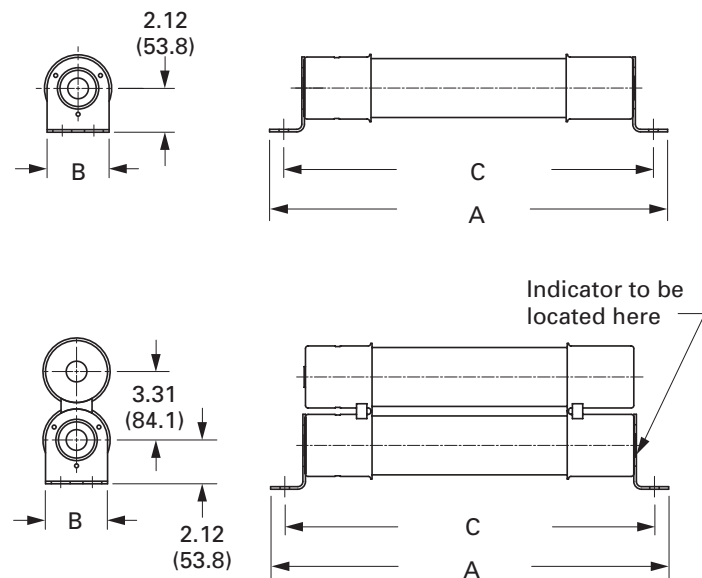
- E-Rated fuses meet the performance characteristics of ANSI C37.46

Recommended live parts for clip-lock fuses

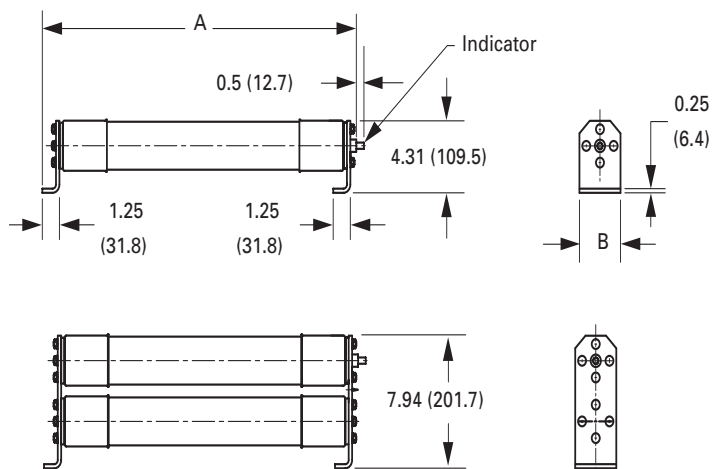
- Catalog number HCL-NL-1

Dimensions — in (mm)

BHLE



HCL



BHCL, BHLE and HCL Type fuses

Dimensions — in (mm)				IR RMS Sym. (kA)	No. of barrels	Installation location	Catalog no.
Amps	Length A	Diameter B	Hole centers C				
BHCL and BHLE bolt-on							
10	22.2 (563)	3 (76)	20.9 (531)	63	1	Indoor/outdoor	15BHLE-10E
15							15BHLE-15E
20							15BHLE-20E
25							15BHLE-25E
30							15BHLE-30E
40							15BHLE-40E [†]
50							15BHLE-50E [†]
65							15BHLE-65E [†]
80							15BHLE-80E [†]
100							15BHLE-100E [†]
125							15BHLE-125E [†]
150							15BHLE-150E [†]
175							15BHLE-175E [†]
200							15BHLE-200E [†]
250	15BHLE-250E [†]						
300	25.1 (637)		23.7 (602)	50	3	Indoor	15BHCL-300E
400						Indoor	15BHCL-400E
HCL clip-lock							
10	22.8 (579)	3 (76)	N/A	63	1	Indoor	15HCL-10E
15							15HCL-15E
20							15HCL-20E
25							15HCL-25E
30							15HCL-30E
40							15HCL-40E [†]
50							15HCL-50E [†]
65							15HCL-65E [†]
80							15HCL-80E [†]
100							15HCL-100E [†]
125							15HCL-125E [†]
150							15HCL-150E [†]
175							15HCL-175E [†]
200							2
250	15HCL-250E [†]						
300	15HCL-300E [†]						

† UL Listed, Guide JEEG, File E240398.

5.5 to 38 kV E-Rated DIN medium voltage fuses

Bussmann series DIN dimensioned E-Rated medium voltage power fuses with striker for indoor use. Available in general purpose (5.5 to 17.5 kV) and full range (25.8 to 38 kV) versions.

Ratings

- Volts 5.5 - 38 kV
- Amps 10 - 450 A
- Interrupting ratings 25 to 65 kA



Agency information

- General purpose E-Rated per ANSI C37.46 (5.5 to 17.5 kV)
- Full range E-Rated per ANSI C37.40 (25.8 to 38 kV)

Striker force

- 50 N (11 lbs)

Recommended fuseclips

See page 7-36 for dimensions.

Amp range	Description	Catalog no.
Up to 200 A	Enclosed fuseclip with wingnut tensioner	A3354745*
	Open fuseclip with spring tensioner	270303

* Not sold in pairs.

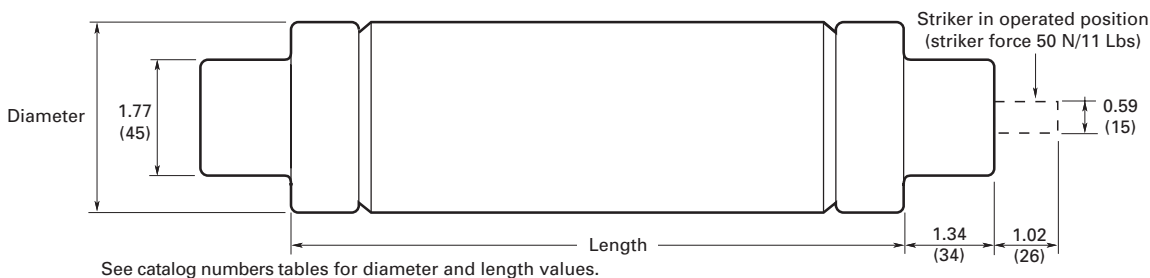
Features

- Cool running for lower watts loss
- 100% X-ray inspected to help assure fuse integrity
- Striker provides visual indication of fuse operation or a means to activate a remote monitoring system

Typical applications

- Primary protection for medium voltage transformers and switch gear
- Protection of medium voltage feeder circuits
- Direct OEM replacement fuses for 600 A Square D HVLCC and HVL switches

Dimensions — in (mm)



Catalog no.	Amps	Interrupting rating (Sym. kA)	Dimensions — in (mm)		
			Length	Diameter	
General purpose versions					
5.5 kV					
55GDMSJ10E	10	65	17.4 (442)	2 (51)	
55GDMSJ15E	15				
55GDMSJ20E	20				
55GDMSJ25E	25				
55GDMSJ30E	30				
55GDMSJ40E	40				
55GDMSJ50E	50				
55GDMSJ65E	65				
55GDMSJ80E	80				
55GDMSJ100E	100				
55GDMSJ125E	125				
55GFMSJ150E	150		17.4 (442)	3 (76)	
55GFMSJ175E	175				
55GFMSJ200E	200				
55GFMSJ250E	250				
55GFMSJ300E	300				
55GFMSJ350E	350				
55GFMSJ400E	400				
55GFMSJ450E	450				
15.5 kV					
155GXQSJ175E	175	65	21.1 (537)	3.5 (89)	
155GXQSJ200E	200				
17.5 kV					
175GDMSJ10E	10	65	17.4 (442)	2 (51)	
175GDMSJ15E	15				
175GDMSJ20E	20				
175GDMSJ25E	25				
175GDMSJ30E	30				
175GFMSJ40E	40		17.4 (442)	3 (76)	
175GFMSJ50E	50				
175GFMSJ65E	65				
175GXMSJ80E	80		17.4 (442)	3.5 (89)	
175GXMSJ100E	100				
175GXQSJ125E	125		21.1 (537)	3.5 (89)	
175GXQSJ150E	150				
Full range versions					
25.8 kV					
258GDQSJ10E	10	25	21.1 (537)	2 (51)	
258GDQSJ15E	15				
258GDQSJ20E	20				
258GDQSJ25E	25				
258GDQSJ30E	30				
258GXQSJ40E	40		21.1 (537)	3.5 (89)	
258GXQSJ50E	50				
258GXQSJ65E	65				
258GXZSJ80E	80		28.3 (718)	3.5 (89)	
258GXZSJ100E	100				
38 kV					
38GFZSJ10E	10	25	28.3 (718)	3 (76)	
38GFZSJ15E	15				
38GFZSJ20E	20				
38GFZSJ25E	25				
38GFZSJ30E	30				

2.4 kV R-Rated fuses

Catalog symbols/construction

- JCK-_R/Standard
- 2CLS-_R/Standard
- JCK-A-_R*/AMPGARD Hookeye
- 2ACLS-_R/AMPGARD Hookeye
- JCH-_R/Hermetically sealed AMPGARD
- 2HCLS-_R/Hermetically sealed AMPGARD
- JCK-B-_R/Bolt-on
- 2BCLS-_R/Bolt-on

* For use in 400 amp AMPGARD motor starters

Ratings

- Volts
 - 2.4 kV (nominal)
 - 2.54 kV (max design)
- Amps 25-450 A
- Interrupting ratings
 - 50 kA Sym.
 - 80 kA Asym.



Agency information

- UL Recognized: Guide MSSS2, File E96676 (JCK-_R [2R-12R] and JCK-A-_R [2R-12R])

Recommended fuseclips and holders for standard constructions

Amps	Description	Catalog no.
Fuseclips		
25-230A	3" Enclosed fuseclip*	A3354730
25-450A	3" Open fuseclip	1A0065
	3" Spring loaded open fuseclip	9078A67G04
Fuse holders		
25-230A Single barrel	Non-disconnect holder, porcelain	2CLE-PNM-D
	Non-disconnect holder, glass polyester	2CLE-GNM-D
	Disconnect holder, porcelain	2CLE-PDM-D
	Disconnect holder, glass polyester	2CLE-GDM-E
390-450A Double barrel	Non-disconnect holder, porcelain	2CLE-PNM-E
	Non-disconnect holder, glass polyester	2CLE-GNM-E
	Disconnect holder, porcelain	2CLE-PDM-E
	Disconnect holder, glass polyester	2CLE-GDM-E

* Single barrel only, not sold in pairs.

2.4 kV R-Rated fuse catalog numbers

"R"		Mounting style (minimum interrupting rating in amps)								No. of barrels
Amps	Des.	Standard		Standard AMPGARD		Hermetically sealed AMPGARD		Bolt-on		
25	—	—	2CLS-25* (100)	—	2ACLS-25* (90)	JCH-30* (90)	2HCLS-25* (90)	JCK-B-25* (90)	2BCLS-25* (90)	1
70	2R	JCK-2R (165)	2CLS-2R (180)	JCK-A-2R (165)	2ACLS-2R (180)	JCH-2R (180)	2HCLS-2R (180)	JCK-B-2R (180)	2BCLS-2R (180)	
100	3R	JCK-3R (220)	2CLS-3R (270)	JCK-A-3R (220)	2ACLS-3R (270)	JCH-3R (270)	2HCLS-3R (270)	JCK-B-3R (270)	2BCLS-3R (270)	
130	4R	JCK-4R (320)	2CLS-4R (360)	JCK-A-4R (320)	2ACLS-4R (360)	JCH-4R (360)	2HCLS-4R (360)	JCK-B-4R (360)	2BCLS-4R (360)	
150	5R	JCK-5R (410)	2CLS-5R (450)	JCK-A-5R (410)	2ACLS-5R (450)	JCH-5R (450)	2HCLS-5R (450)	JCK-B-5R (450)	2BCLS-5R (450)	
170	6R	JCK-6R (480)	2CLS-6R (540)	JCK-A-6R (480)	2ACLS-6R (540)	JCH-6R (540)	2HCLS-6R (540)	JCK-B-6R (540)	2BCLS-6R (540)	
200	9R	JCK-9R (720)	2CLS-200* (740)	JCK-A-9R (720)	2ACLS-200* (740)	JCH-200* (740)	2HCLS-200* (740)	JCK-B-200* (740)	2BCLS-200* (740)	
230	12R	JCK-12R (970)	2CLS-230* (1080)	JCK-A-12R (970)	2ACLS-230* (1080)	JCH-230* (1080)	2HCLS-230* (1080)	JCK-B-230* (1080)	2BCLS-230* (1080)	
390	18R	JCK-18R (1430)†	2CLS-390* (1500)	JCK-A-18R (1430)†	2ACLS-390* (1500)	JCH-390* (1500)	2HCLS-390* (1500)	JCK-B-390* (1500)	2BCLS-390* (1500)	
450	24R	JCK-24R (1880)†	2CLS-450* (2200)	JCK-A-24R (1880)†	2ACLS-450* (2200)	JCH-450* (2200)	2HCLS-450* (2200)	JCK-B-450* (2200)	2BCLS-450* (2200)	
										2

* Does not comply with ANSI C37.46 for "R" rating.

† Not UL Recognized.

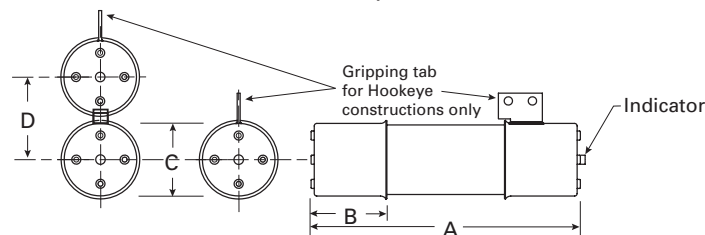
Data sheet no. 6001

Dimensions — in (mm)

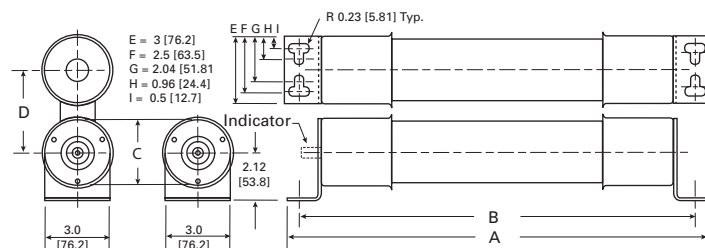
Construction	Amps	Dimension			
		A	B	C	D
Standard - short	25-230A	10.8 (274)	3 (76)	3 (76)	—
	390-450A				3.3 (84)
AMPGARD Hookeye*	70-230A	19.2 (488)	17.9 (455)	3 (76)	—
	390-450A				3.3 (84)
Bolt-on	25-230A	19.2 (488)	17.9 (455)	3 (76)	—
	390-450A				3.3 (84)

* Includes hermetically sealed versions.

Standard and AMPGARD Hookeye



Bolt-on



4.8 kV R-Rated fuses

Catalog symbols/construction

- 5CLS-30 and 5CLS-_R/Standard - short (30 A, 2R-24R)
- JCL-_R/Standard - short (2R - 24R)
- 5LCLS-_R/Standard - long (2R - 24R)
- 5ACLS-30 and 5ACLS-_R/AMPGARD Hookeye* (30 A, 2R-24R)
- JCL-A-_R/AMPGARD Hookeye* (2R - 24R)
- 5HCLS-30 and 5HCLS-_R/Hermetically sealed AMPGARD Hookeye* (30 A, 2R-24R)
- 5BCLS-30 and 5BCLS-_R/Bolt-on (30 A, 2R-44R)
- JCL-B-_R/Bolt-on (2R-24R)
- 5MCLS-_R-_A and 5MCLS-_R-_B/Bolt-on GE Limitamp (2R- 24R)

* For use in 400 amp AMPGARD motor starters

Ratings

- Volts
 - 4.8 kV (nominal)
 - 5.0 kV (max design)
- Amps 30-800 A
- Interrupting ratings
 - 50 kA Sym.
 - 80 kA Asym.

Agency information

- UL Recognized, Guide MSSS2
 - File E96676: JCL-_R [2R-12R], JCL-A-_R [2R-12R], 5MCLS-_R-A [2R-24R], and 5MCLS-_R-B [2R-24R]
 - File E60757: 5CLS-30, 5CLS-_R [2R-18R], 5ACLS-30, and 5ACLS-_R [2R-24R]

Recommended fuseclips and holders for standard constructions

Amps	Description	BIL (kV)	Catalog no.
Fuseclips			
30-230A	3" Enclosed fuseclip*	—	A3354730
30-450A	3" Open fuseclip		1A0065
	3" Spring loaded open fuseclip		9078A67G04
Fuse holders for CLS / JCL / 5HCLS			
30-230A Single barrel	Non-disconnect holder, porcelain	60	5HLE-PNM-D
	Non-disconnect holder, glass polyester		5HLE-GNM-D
	Disconnect holder, porcelain		5HLE-PDM-D
	Disconnect holder, glass polyester		5HLE-GDM-D
390-450A Double barrel	Non-disconnect holder, porcelain		5HLE-PNM-E
	Non-disconnect holder, glass polyester		5HLE-GNM-E
	Disconnect holder, porcelain		5HLE-PDM-E
	Disconnect holder, glass polyester		5HLE-GDM-E
Fuse holders for 5LCLS†			
70-230A Single barrel	Non-disconnect holder, porcelain	60	5CLE-PNM-D
	Non-disconnect holder, glass polyester		5CLE-GNM-D
	Disconnect holder, porcelain		5CLE-PDM-D
	Disconnect holder, glass polyester	75	5CLE-GDM-D
	Disconnect holder, porcelain		8CLE-PDM-D
	Disconnect holder, glass polyester		8CLE-GDM-D
390-450A Double Barrel	Disconnect holder, porcelain	60	5CLE-PDM-E
	Disconnect holder, glass polyester		5CLE-GDM-E

* Single barrel only, not sold in pairs.

** Not available for standard - long constructions

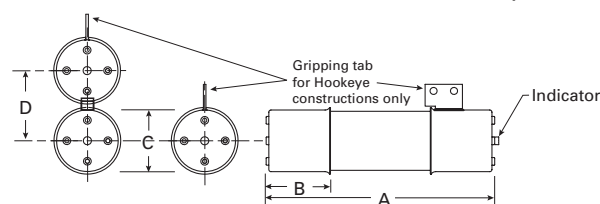
† Not available for 390 to 450 amp ratings.

Dimensions — in (mm)

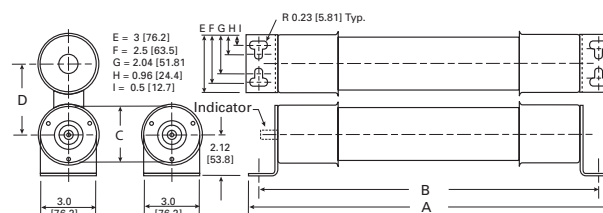
Construction	Amp	Dimension			
		A	B	C	D
Standard - short	30-230	15.6 (396)			—
	390-450				3.3 (84)
Standard - long	70-230	17.8 (452)	3 (76)	3 (76)	—
	390-450				3.3 (84)
AMPGARD Hookeye*	30-230	15.6 (396)			—
	390-450				3.3 (84)
Bolt-on	30-230	19.2 (488)	17.9 (455)	4 (101)	—
	390-450				3.3 (84)
Limitamp (-A)	70-230	18.3 (465)	18.8 (478)	1.4 (36)	4.8 (122)
	390-450				7.4 (188)
Limitamp (-B)	70-230				3.0 (76)
	390-450				2.4 (61)

* Includes hermetically sealed versions.

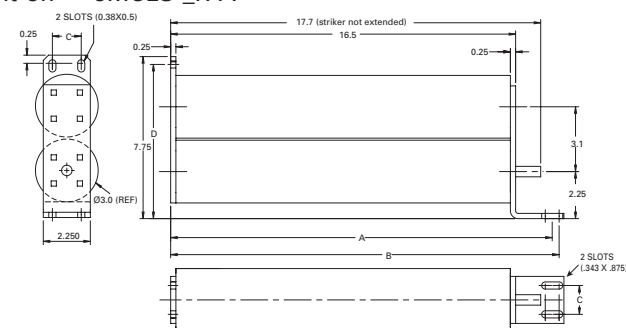
Ferrule JCL, 5LCLS, 5CLS and AMPGARD Hookeye



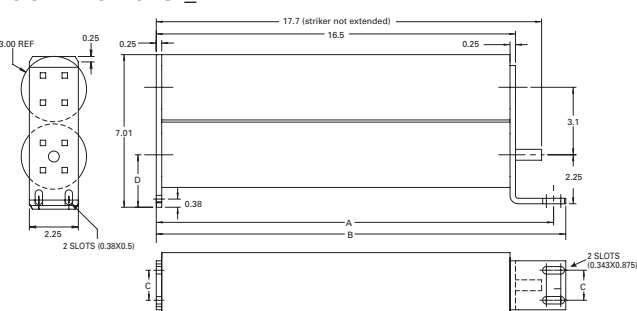
Bolt-on — 5BCLS-



Bolt-on — 5MCLS-_R-A



Bolt-on — 5MCLS-_R-B



Data sheet no. 6001

4.8 kV R-Rated fuse catalog numbers

Ferrule constructions (min. interrupting rating in amps)				No. of barrels
Amps	Short	Short	Long	
30	5CLS-30* (100)	—	—	1
70	5CLS-2R (180)	JCL-2R (165)	5LCLS-2R (180)†	
100	5CLS-3R (270)	JCL-3R (220)	5LCLS-3R (270)†	
130	5CLS-4R (360)	JCL-4R (320)	5LCLS-4R (360)†	
150	5CLS-5R (450)	JCL-5R (410)	5LCLS-5R (450)†	
170	5CLS-6R (540)	JCL-6R (480)	5LCLS-6R (540)†	
200	5CLS-9R (740)	JCL-9R (720)	5LCLS-9R (740)†	
230	5CLS-12R (1080)	JCL-12R (970)	5LCLS-12R (1080)†	2
390	5CLS-18R (1500)	JCL-18R (1430)†	5LCLS-18R (1500)†	
450	5CLS-24R (2200)†	JCL-24R (1880)†	5LCLS-24R (2200)†	

* Does not comply with ANSI C37.46 for "R" rating.

† Not UL Recognized.

AMPGARD Hookeye (min. interrupting rating in amps)				No. of barrels
Amps	Hookeye	Hookeye	Hermetic seal	
30	5ACLS-30* (100)	—	5HCLS-30* (100)†	1
70	5ACLS-2R (180)	JCL-A-2R (165)	5HCLS-2R (180)†	
100	5ACLS-3R (270)	JCL-A-3R (220)	5HCLS-3R (270)†	
130	5ACLS-4R (360)	JCL-A-4R (320)	5HCLS-4R (360)†	
150	5ACLS-5R (450)	JCL-A-5R (410)	5HCLS-5R (450)†	
170	5ACLS-6R (540)	JCL-A-6R (480)	5HCLS-6R (540)†	
200	5ACLS-9R (740)	JCL-A-9R (720)	5HCLS-9R (740)†	
230	5ACLS-12R (1080)	JCL-A-12R (970)	5HCLS-12R (1080)†	2
390	5ACLS-18R (1500)	JCL-A-18R (1430)†	5HCLS-18R (1500)†	
450	5ACLS-24R (2200)	JCL-A-24R (1880)†	5HCLS-24R (2200)†	

* Does not comply with ANSI C37.46 for "R" rating.

† Not UL Recognized.

Bolt-on (min. interrupting rating in amps)				No. of barrels
Amps	Regular	Regular		
30	5BCLS-30* (100)†	—		1
70	5BCLS-2R (180)†	JCL-B-2R (165)†		
100	5BCLS-3R (270)†	JCL-B-3R (220)†		
130	5BCLS-4R (360)†	JCL-B-4R (320)†		
150	5BCLS-5R (450)†	JCL-B-5R (410)†		
170	5BCLS-6R (540)†	JCL-B-6R (480)†		
200	5BCLS-9R (740)†	JCL-B-9R (720)†		
230	5BCLS-12R (1080)†	JCL-B-12R (970)†		2
390	5BCLS-18R (1500)†	JCL-B-18R (1430)†		
450	5BCLS-24R (2200)†	JCL-B-24R (1880)†		
600	5BCLS-32R (3000)†	—		
650	5BCLS-36R (3200)†	—		
800	5BCLS-44R (3600)†	—		

* Does not comply with ANSI C37.46 for "R" rating.

† Not UL Recognized.

GE Limitamp (min. interrupting rating in amps)				No. of barrels
Amps	Bolt-on	Bolt-on		
30	—	—		1
70	5MCLS-2R-A (180)	5MCLS-2R-B (180)		
100	5MCLS-3R-A (270)	5MCLS-3R-B (270)		
130	5MCLS-4R-A (360)	5MCLS-4R-B (360)		
150	5MCLS-5R-A (450)	5MCLS-5R-B (450)		
170	5MCLS-6R-A (540)	5MCLS-6R-B (540)		
200	5MCLS-9R-A (850)	5MCLS-9R-B (850)		
230	5MCLS-12R-A (1150)	5MCLS-12R-B (1150)		2
390	5MCLS-18R-A (1725)	5MCLS-18R-B (1725)		
450	5MCLS-24R-A (2350)	5MCLS-24R-B (2350)		

* Does not comply with ANSI C37.46 for "R" rating.

† Not UL Recognized.

5CLS, JCL, JCL-A, 5ACLS and 5HCLS Type mountings — in (mm)

Hole centers		Overall length C	Hole inset D	Hole ctr. E	Contact hgt. F	Overall hgt. G	BIL (kV)	
Catalog no.	A							B
Disconnect single barrel†								
5CLE-GDM-D	15.24 (387.1)	6 (152.4)	25 (647.7)	0.62 (15.7)	1.75 (44.4)	4.5 (114.3)	11.72 (297.7)	60
5CLE-PDM-D								
5HLE-PDM-D	16.25 (412.8)	23 (584.2)						
5HLE-GDM-D								
Disconnect double barrel†								
5CLE-GDM-E	15.24 (387.1)	6 (152.4)	25 (647.7)	0.62 (15.7)	1.75 (44.4)	4.5 (114.3)	15.28 (388.1)	60
5CLE-PDM-E								
5HLE-GDM-E	16.25 (412.8)	23 (584.2)						
5HLE-PDM-E								
Non-disconnect single barrel								
5CLE-GNM-D	15.24 (387.1)	6 (152.4)	25 (635.0)	0.62 (15.7)	1.75 (44.4)	4.5 (114.3)	8.79 (223.3)	60
5CLE-PNM-D								
5HLE-GNM-D	16.25 (412.7)	23 (584.2)						
5HLE-PNM-D								
Non-disconnect double barrel								
5HLE-PNM-E	16.25 (412.7)	6 (152.4)	25 (635.0)	0.62 (15.7)\	1.75 (44.4)	4.5 (114.3)	12.48 (317.0)	60
5HLE-GNM-E								

7.2 kV R-Rated fuses

Catalog symbols/construction

- 8CLS-_R/Standard (2R - 6R)
- 8ACLS-_R/AMPGARD Hookeye* (2R - 6R)
- 7BCLS-_R/Bolt-on (2R - 6R)

* For use in 400 amp AMPGARD motor starters.

Ratings

- Volts
 - 7.2 kV (nominal)
 - 8.3 kV (max design 70-170 A standard and AMPGARD Hookeye)
 - 7.2 kV (max design 70-170 A bolt-on)
- Amps 70-170 A
- Interrupting ratings
 - 50 kA Sym.
 - 80 kA Asym.

Recommended fuseclips and holders for standard constructions

Amps	Description	BIL (kV)	Cat. No.
Fuseclips			
	3" Enclosed fuseclip*		A3354730
70-170	3" Open fuseclip	—	1A0065
	3" Spring loaded open fuseclip		9078A67G04
Fuse holders for 7CLS and 8CLS			
	Non-disconnect holder, porcelain		8HLE-PNM-D
	Non-disconnect holder, glass polyester		8HLE-GNM-D
70-170	Disconnect holder, porcelain	75	8HLE-PDM-D
	Disconnect holder, glass polyester		8HLE-GDM-D

* Single barrel only, not sold in pairs.

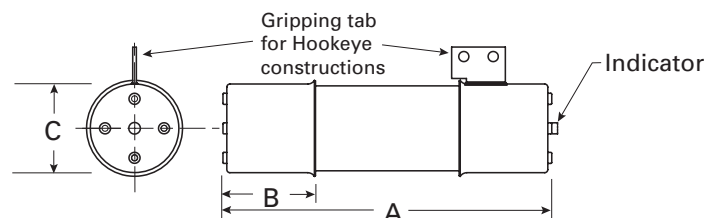
7.2 kV R-Rated fuse catalog numbers

Amps	"R" Designation	Mounting style (minimum interrupting rating in amps)			No. of barrels
		Standard	AMPGARD Hookeye	Bolt-on	
70	2R	8CLS-2R (160)	8ACLS-2R (160)	7BCLS-2R (160)	1
100	3R	8CLS-3R (250)	8ACLS-3R (250)	7BCLS-3R (250)	
130	4R	8CLS-4R (325)	8ACLS-4R (325)	7BCLS-4R (325)	
150	5R	8CLS-5R (390)	8ACLS-5R (390)	7BCLS-5R (390)	
170	6R	8CLS-6R (500)	8ACLS-6R (500)	7BCLS-6R (500)	

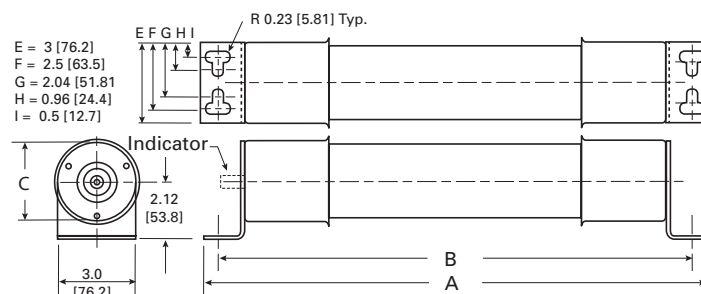
Dimensions — in (mm)

Construction	Amps	Dimension		
		A	B	C
Standard		15.8 (401)	3 (76)	
AMPGARD Hookeye	70-170			3 (76)
Bolt-on		19.2 (488)	17.9 (455)	

Standard and AMPGARD Hookeye



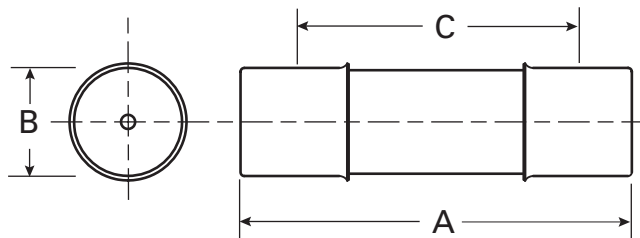
Bolt-on



E-Rated PT medium voltage fuses



Dimensions — in (mm)



Catalog symbols (by maximum voltage rating)

- 2.475 kV
 - 2NCLPT-_
- 3.6 kV
 - 3.6ABCNA_
 - 3.6ABWNA_
 - 3.6CAV_
- 5.5 kV
 - JCW-_
 - 5CLPT-_E
 - 5NCLPT-_E
 - 5NCLPT-_E-A
 - 5.5ABWNA_E
 - 5.5AMWNA_E
 - 5.5CAV_E
 - 5.5CAVH_E
- 7.2 kV
 - 7.2ABWNA_
 - 7.2ABCNA_
 - 7.2AMWNA_E
 - 7.2CAV_
- 8.3 kV
 - 8CLPT-_E-A
 - 8NCLPT-_E
 - 8NCLPT-_E-A
 - 8NCLPT-_E-B
- 12 kV
 - 12ABCNA_
 - 12CAV_
- 15.5 kV
 - 15CLPT-_E
 - 15NCLPT-_E-A
 - 15NCLPT-_E-B
 - 15.5CAV_E
 - 15.5CAVH_E
- 17.5 kV
 - 17.5ABGNA_
 - 17.5CAV_
- 24 kV
 - 24ABGNA_
 - 24CAV_
- 25.5 kV
 - 25CLPT-_E
- 36 kV
 - 36ABGNA_
 - 36CAV_
- 38 kV
 - 38CAV_E
 - 38CAVH_E
 - 38CLPT-_E

Recommended fuseclip and block

Description	Catalog no.
Open fuseclip for 0.8 (20 mm) dia. fuses	1A1837
Single-pole open fuse block with #10-32 phil-slot screw terminals rated 2500 V, 5 A maximum and 63 kA withstand rating	PTFB-2500-JCD

Ratings*

- Volts 2.4 kV to 38 kV
- Amps 0.25 to 15 A
- Interrupting ratings 25 to 80 kA RMS Sym.

* See catalog number tables for voltages, ampacities and interrupting ratings by catalog number.

Agency information

- PT fuses conforming to the requirements for E-Rating meet the performance characteristics of IEEE/ANSI C37.46

2.475 to 38 kV PT E-Rated fuses

Dimensions — in (mm)			Catalog no. (IR - kA)			Recommended fuseclip	
Amps	Length A	Diameter B	Clip centers C	Indicating	Non-indicating		
2.475 kV maximum system voltage							
0.25	4.5 (114)	0.8 (20)	3.9 (99)	—	2NCLPT-.25E (63)	1A1837	
0.5				—	2NCLPT-.5E (63)		
1				—	2NCLPT-1E (40)		
2				—	2NCLPT-2E (40)		
5				—	2NCLPT-5E (25)		
3.6 kV maximum system voltage							
2	8.7 (221)	1.6 (41)	7.6 (193)	—	3.6CAV2 (50)	1A1837	
3.15	5.6 (142)	1 (25)	4.4 (112)	—	3.6ABWNA3.15 (50)	A3354705	
3.15	7.7 (195)		6.5 (165)	—	3.6ABCNA3.15 (50)		
6.3	5.6 (142)		4.4 (112)	—	3.6ABWNA6.3 (50)		
6.3	7.7 (195)		6.5 (165)	—	3.6ABCNA6.3 (50)		
10				—	3.6ABCNA10 (50)		
5.5 kV maximum system voltage							
0.5	5.6 (142)	0.8 (20)	4.8 (122)	—	5.5AMWNA0.5E (50)	1A1837	
0.5		1 (25)	4.4 (112)	—	5.5ABWNA0.5E (50)	A3354705	
0.5	7.4 (188)	1.6 (41)	6.2 (157)	5.5CAVH0.5E (50)	JCW-1/2E (40)	1A0835	
0.5	9.5 (241)	1.6 (41)	8.1 (206)	5CLPT-.5 (50) [†]	5NCLPT-.5E-A (50)	1A0835	
1	5.6 (142)	1 (25)	4.4 (112)	—	5.5ABWNA1E (50)	A3354705	
1		0.8 (20)	4.8 (122)	—	5.5AMWNA1.0E (50)	1A1837	
1	7.4 (188)	1.6 (41)	6.2 (157)	5.5CAVH1E (50)	JCW-1E (40)	1A0835	
1	9.5 (241)		8.1 (206)	5CLPT-1 (50) [†]	5NCLPT-1E-A (50)		
1.5				5CLPT-1.5 (50) [†]	—		
2	5.6 (142)	1 (25)	4.4 (112)	—	5.5ABWNA2E (50)	A3354705	
2		0.8 (20)	8.1 (206)	—	5NCLPT-2E (50)	1A1837	
2			4.8 (122)	—	5.5AMWNA2.0E (50)		
2			7.4 (188)	1.6 (41)	6.2 (157)	5.5CAVH2E (50)	JCW-2E (40)
3		5.6 (142)	1 (25)	4.4 (112)	—	5.5ABWNA3E (50)	A3354705
3	0.8 (20)		4.8 (122)	—	5.5AMWNA3.0E (50)	1A1837	
3	9.5 (241)	1.6 (41)	8.1 (206)	5CLPT-3E (50)	5NCLPT-3E (50)	1A0835	
3	7.4 (188)		6.2 (157)	—	JCW-3E (40)		
4	5.6 (142)	0.8 (20)	4.8 (122)	—	5.5AMWNA4.0E (50)	1A1837	
5	9.5 (241)	1.6 (41)	8.1 (206)	5CLPT-5E (50)	5NCLPT-5E-A (50)	1A0835	
5	5.6 (142)	1 (25)	4.4 (112)	—	5.5ABWNA5E (50)	A3354705	
5		0.8 (20)	4.8 (122)	—	5.5AMWNA5.0E (50)	1A1837	
5	7.3 (185)	1.6 (41)	5.9 (150)	—	JCW-5E (40)	1A0835	
10	9.5 (241)		8.1 (206)	5CLPT-10E (50)	5NCLPT-10E (50)		
15	7.4 (188)		6.2 (157)	—	5.5CAV15E (50)		

[†] Due to manufacturing variations, this fuse does not comply with ANSI C37.46 for "E" rating.

2.475 to 38 kV PT E-Rated fuses

Dimensions — in (mm)				Catalog no. (IR - kA)		Recommended fuseclip	
Amps	Length A	Diameter B	Clip centers C	Indicating	Non-indicating		
7.2 kV maximum system voltage							
0.5					7.2AMWNA0.5E (50)		
1	5.6 (142)	0.8 (20)	4.8 (122)		7.2AMWNA1.0E (50)	1A1837	
2					7.2AMWNA2.0E (50)		
2	8.7 (221)	1.6 (41)	7.5 (190)		7.2CAV2 (40)	1A0835	
3	5.6 (142)	0.8 (20)	4.8 (122)		7.2AMWNA3.0E (50)	1A1837	
3.15	5.6 (142)	1 (25.4)	4.4 (112)		7.2ABWNA3.15 (45)	A3354705	
3.15	7.7 (195)		6.5 (165)		7.2ABCNA3.15 (45)		
4	5.6 (142)	0.8 (20)	4.8 (122)	—	7.2AMWNA4.0E (50)	1A1837	
4	8.7 (221)	1.6 (41)	7.5 (190)		7.2CAV4 (40)	1A0835	
5	5.6 (142)	0.8 (20)	4.8 (122)		7.2AMWNA5E (50)	1A1837	
6	8.7 (221)	1.6 (41)	7.5 (190)		7.2CAV6 (40)	1A0835	
6.3	5.6 (142)	1 (25.4)	4.4 (112)		7.2ABWNA6.3 (45)	A3354705	
6.3	7.7 (195)		6.5 (165)				7.2ABCNA6.3 (45)
10	8.7 (221)	1.6 (41)	7.5 (190)		7.2CAV10 (40)	1A0835	
8.3 kV maximum system voltage							
0.5	9.5 (241)	1.6 (41)	8.1 (206)		8CLPT-.5 (50) [†]	8NCLPT-.5E-A (50)	1A0835
1	5 (127)	1.1 (28)	4 (102)			8NCLPT-1E (50)	A3354705
1	9.5 (241)	1.6 (41)	8.1 (206)	—	8NCLPT-1E-A (50)	1A0835	
2	8 (203)	0.8 (20)	7.2 (183)		8NCLPT-2E (25)	1A1837	
2	9.5 (241)	1.6 (41)	8.1 (206)		8NCLPT-2E-A (50)	1A0835	
3	12.9 (328)		11.5 (292)	8CLPT-3E (50)	8NCLPT-3E-B (50)		
4	8 (203)	0.8 (20)	7.2 (183)	—	8NCLPT-4E (25)	1A1837	
5	5 (127)	1.1 (28)	4 (102)		8NCLPT-5E (50)	A3354705	
5	12.9 (328)	1.6 (41)	11.5 (292)	8CLPT-5E (50)	8NCLPT-5E-B (50)	1A0835	
8	5 (127)	1.1 (28)	4 (102)	—	8NCLPT-8E	A3354705	
10	12.9 (328)	1.6 (41)	11.5 (292)	8CLPT-10E (50)	8NCLPT-10E-B (50)	1A0835	
12 kV maximum system voltage							
2	8.7 (221)	1.6 (41)	7.5 (190)	—	12CAV2 (40)	1A0835	
3.15	7.7 (195)	1 (25)	6.5 (165)		12ABCNA3.15 (45)	A3354705	
15.5 kV maximum system voltage							
0.5	12.9 (328)	1.6 (41)	11.5 (292)	15.5CAVH0.5E (80)	15NCLPT-.5E-A (50)	1A0835	
1	12.9 (328)		11.5 (292)	15.5CAVH1E (80)	15NCLPT-1E-A (50)		
2	12.9 (328)		11.5 (292)	15.5CAVH2E (80)	15NCLPT-2E (50)		
3	12.9 (328)		11.5 (292)	—	15.5CAV3E (80)		
3	17.6 (447)		16.1 (409)	—	15NCLPT-3E (50)		
3	17.6 (447)		16.1 (409)	15CLPT-3E (50)	—		
5	12.9 (328)		11.5 (292)	—	15.5CAV5E (80)		
5	17.6 (447)		16.1 (409)	15CLPT-5E (50)	15NCLPT-5E (50)		
7	12.9 (328)		11.5 (292)	—	15.5CAV7E (80)		
10	17.6 (447)		16.1 (409)	15CLPT-10E (50)	15NCLPT-10E (50)		
17.5 kV maximum system voltage							
2					17.5CAV2 (40)		
4	8.7 (221)	1.6 (41)	7.5 (190)	—	17.5CAV4 (40)	1A0835	
6					17.5CAV6 (40)		
10					17.5CAV10 (40)		

[†] Does not comply with ANSI C37.46 for "E" rating.

2.475 to 38 kV PT E-Rated fuses

Dimensions — in (mm)				Catalog no. (IR - kA)		Recommended fuseclip
Amps	Length A	Diameter B	Clip centers C	Indicating	Non-indicating	
24 kV maximum system voltage						
2	13.49 (340)	1.6 (41)	12.2 (310)	—	24CAV2 (40)	1A0835
3				—	24CAV3 (40)	
4				—	24CAV4 (40)	
25.5 kV maximum system voltage						
0.5	17.6 (447)	1.6 (41)	16.1 (410)	25CLPT-.5 (43.5) [†]	—	1A0835
1				25CLPT-1 (43.5) [†]	—	
36 kV maximum system voltage						
2	17.3 (439)	1.6 (41)	16.1 (410)	—	36CAV2 (40)	1A0835
4				—	36CAV4 (40)	
38 kV maximum system voltage						
0.5	17.3 (439)	1.6 (41)	16.1 (409)	38CAVH0.5E (40)	—	1A0835
0.5	18.6 (472)		17.1 (434)	38CLPT-0.5 (43.5) [†]	—	
1				38CAVH1E (40)	—	
2	17.3 (439)		16.1 (409)	38CAVH2E (40)	—	
4				—	38CAV4E (40)	

[†] Does not comply with ANSI C37.46 for "E" rating.

CLPT Type mountings and hardware

			Catalog no.			
Amps	Fuse mounting type*	BIL (kV)	Mounting (including live parts, end fittings)**		Live parts (including end fittings)***	End fittings (disconnect only)
			Porcelain insulator	Glass-polyester insulator		
5.5 kV maximum (4.8 kV nominal)†						
0.5–10	Non-disconnect	60	5CLPT-PNM-A	5CLPT-GNM-A	CLPT-NL	—
	Disconnect††		5CLPT-PDM-A	5CLPT-GDM-A	CLPT-DL	CLPT-DF
8.3 kV maximum (7.2 kV nominal)†						
0.5–2	Non-disconnect	75	8CLPT-PNM-A	8CLPT-GNM-A	CLPT-NL	—
	Disconnect††		8CLPT-PDM-A	8CLPT-GDM-A	CLPT-DL	CLPT-DF
3–10	Non-disconnect		8CLPT-PNM-B	8CLPT-GNM-B	CLPT-NL	—
	Disconnect††		8CLPT-PDM-B	8CLPT-GDM-B	CLPT-DL	CLPT-DF
15.5 kV maximum (14.4 kV nominal)						
0.5–2	Non-disconnect	95	15CLPT-PNM-A	15CLPT-GNM-A	CLPT-NL	—
	Disconnect††		15CLPT-PDM-A	15CLPT-GDM-A	CLPT-DL	CLPT-DF
3–10	Non-disconnect		15CLPT-PNM-B	15CLPT-GNM-B	CLPT-NL	CLPT-DF
	Disconnect††		15CLPT-PDM-B	15CLPT-GDM-B	CLPT-DL	—
25.5 kV Maximum (23 kV Nominal)						
0.5–1	Non-disconnect	150	25CLPT-PNM-A	—	25CLPT-NL	—
	Disconnect††		25CLPT-PDM-A		25CLPT-DL	CLPT-DF
38 kV Maximum (34.5 kV Nominal)						
0.5	Disconnect††	N/A	Not applicable	Not applicable	CLPT-NL	CLPT-DF
	Non-disconnect		38CLPT-PNM-A		CLPT-DL	—

* See page 7-35 for dimensions and diagrams of typical mountings.

**End fittings supplied only when required.

[†] Refers to 5CLPT, 5NCLPT, 8CLPT and 8NCLPT-A or -B fuses only.

^{††}Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

HVA, HVB, HVJ, HVL, HVR, HVT, HVU, HVW and HVX fast-acting PT fuses

Medium voltage, non-time delay, fast-acting fuses.

Ratings*

- Volts 1-10 kV
- Amps 1/16-10 A
- * See catalog number table for possible volt/amp combinations.

Features

- Physical size varies with electrical rating of fuse to prevent overfusing
- Space-saving size

Typical applications

- Medium voltage instrument and circuit protection

Test specifications

Catalog symbol	Percent load	Opening time
HVA, HVB, HVJ, HVL	110	4 hours (min)
	135	1 hour (max)
HVR, HVT, HVU, HVW, HVX	100	4 hours (min)
	150	1 hour (max)

Recommended fuseclips and blocks

Fuse catalog symbol	Block catalog no.	Fuseclip catalog no.
HVA, HVR	4528*	5960
HVB, HVT	4529*	
HVJ, HVU	—	4180
HVL, HVX		

* Use #8 screws.



Catalog symbol	kV	Amps	Max. IR (amps)	Dimensions — in (mm)	
				Diameter	Length
HVA	1	1/16, 1/10, 1/8, 2/10, 1/4, 3/8, 1/2, 3/4, 1, 1-1/2, 2, 3, 4, 6, 10	20 DC / 30 AC	0.4 (10)	3 (76)
HVB	2.5	1/2, 3/4, 1, 1-1/2, 2, 3	8 DC / 12 AC		4.5 (114)
HVJ	5	1/16, 1/8, 1/4, 1/2, 3/4, 1, 1-1/2, 2, 4, 6*	4 DC / 6 AC	0.8 (21)	5 (126.9)
HVL	10	1/16, 1/8, 1/4, 1/2, 1, 1-1/2, 2, 3*	2 DC / 3 AC		10 (254)
HVR	1	1/2, 1, 2, 3, 4, 5	500 AC	0.4 (10)	3 (76)
HVW	1.2	1, 2, 3, 4, 5, 8	4 DC / 167 AC		2.3 (57)
HVT	2.5	1/2, 1, 2, 3, 5	500 AC	0.8 (20)	4.5 (114)
HVU	5	1/2, 1, 2, 3, 4, 5	500 AC		5 (127)
HVX	10	1/2, 1, 3, 5	1200 AC		10 (254)

* AC only.

Catalog number build-a-code

Fuse catalog symbol Amps

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E.g., HVB-3/4 (2.5 kV 3/4 amp fuse)

British standard dimensioned IEC fuses for motor circuit protection

The Bussmann series IEC motor fuses are designed to meet the specific requirements necessary for motor protection. During the starting cycle of direct on-line motors, the fuse elements will reach a considerably higher temperature than during normal operation; (this is due to the high amount of current the motor will draw as it starts, typically, six times its normal load current value). This results in expansion and contraction of the fuse elements and could cause premature operation of the fuse.

Bussmann series motor fuses encompass an advanced design to minimize this effect. This, therefore, negates the need to over specify the fuse rating due to high values of motor starting current.

These motor fuses operate extremely quickly under heavy fault currents, resulting from the time / current characteristic. Low power dissipation ensures low temperature rise, important in multi-tier starters for example. Switching (arc), voltages are lower than permitted values, therefore, 5.5 kV fuses are also suitable for 4.8 kV and 2.4 kV circuits.



Catalog symbol	kV	IR (kA)	Amps/rating	Dimensions — in (mm)					
				Length	Diameter	Dimension standard			
3.6WJON6	3.6	50	5, 6.3, 10, 16, 20, 25, 31.5, 40, 50	7.6 (192)	1.4 (36)	BS 2692 (TA1) Interchangeable with GEC Type K2 PA			
3.6WDOH6			50, 63, 80, 100, 125		2 (51)				
3.6WFOH6			160, 200		3 (76)				
3.6WDLSJ			50, 63, 80, 100, 125	11.5 (292)	2 (51)	DIN 43625			
3.6WFLSJ			160, 200		3 (76)				
3.6WDFHO			50, 63, 80, 100, 125		2 (51)				
3.6WFFHO			160, 200	10 (254)	3 (76)	BS 2692 (TA2)			
3.6WKFHO			250, 315, 355, 400						
5.5VFNHA			5.5	60		2R, 3R, 4R, 6R	15.9 (403)		ANSI R-Rated
5.5VKNHA						9R, 12R, 18R, 24R			
7.2WFNHO	7.2	40	25, 31.5, 40, 50, 63, 80, 100, 125, 160	3 (76)	BS 2692 (TA4)				
7.2WKNHO			200, 224, 250, 315						
7.2WFMSJ		63	25, 31.5, 40, 50, 63, 80, 125, 160		17.4 (442)		DIN 43625		
7.2WKMSJ			200, 224, 250, 315, 355						

Catalog number build-a-code

Fuse catalog symbol Amps

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E.g., 3.6WKFHO-315 (315 amp 3.6 kV fuse)

DIN dimensioned IEC fuses for transformer protection

DIN dimension fuses to Specification DIN 43625 covering current-limiting fuses with performance in compliance with IEC 60282-1. These are in accordance with the R10 and, in some cases, the R20 series of preferred numbers.

Ratings*

- Volts 3.6-36 kV
- Amps 6.3-100 A
- Interrupting ratings 20-50 kA

* See catalog number table for possible volt/amp combinations.

Agency information

- Compliant with DIN dimensional standard DIN 43625, VDE 0670 part 4, VDE 0670 part 40Z and with IEC 60282-1 (2005)

Features

- DIN dimensioned for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Designed for use in IEC equipment



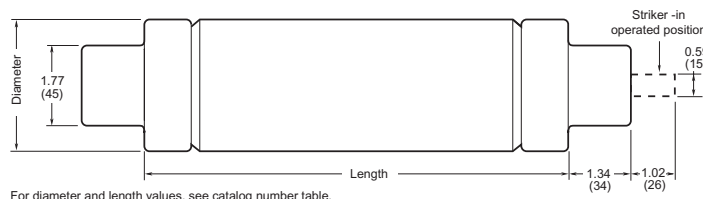
Typical applications

- Medium voltage IEC designed equipment

Recommended fuseclips

- Catalog numbers 270303, A3354745, see page 7-36.

Dimensions — in (mm)



kV	Catalog symbol	Amps	Dimensions — in (mm)		IR RMS Sym. (kA)
			Diameter	Length	
3.6	3.6ADOSJ	6.3, 10, 16, 20, 25, 31.5, 40	2.0 (51)	7.6 (192)	40
	3.6WDOSJ	50, 63, 80, 100, 125			
	3.6WFOSJ	160, 200	3.0 (76)	11.5 (292)	50
	3.6ADLSJ	25, 40	2.0 (51)		
	3.6WKLSJ	250, 315, 400	3.0 (76)		
7.2	7.2DLSJ	6.3, 10, 16, 20, 25, 31.5, 40, 50, 63	2.0 (51)	11.5 (292)	40
	7.2TFLSJ	80, 100, 125, 160	3.0 (76)		
12	12TDLEJ	6.3, 10, 16, 20, 25, 31.5, 40, 50, 63	2.0 (51)	11.5 (292)	63
	12THLEJ	80, 100	2.5 (64)		
	12TKLEJ	125	3.0 (76)		
	12TXLEJ*	160, 200	3.5 (88)		
17.5	17.5TDLSJ*	6.3, 10, 16, 20, 25, 31.5, 40	2.0 (51)	17.4 (442)	35.5
	17.5TFLSJ*	50	3.0 (76)		
	17.5TDMEJ	6.3, 10, 16, 20, 25, 31.5, 40, 50, 63	2.0 (51)		50
	17.5THMEJ	80, 100	2.5 (64)		
	17.5TKMEJ	125	3.0 (76)		
24	24TDMEJ	6.3, 10, 16, 20, 25, 31.5, 40, 50	2.0 (51)	21.2 (537)	50
	24THMEJ	63	2.5 (64)		
	24TFMEJ	80, 100* ¹	3.0 (76)		31.5
	24TXMEJ*	125 ² , 160	3.5 (88)		
36	36TDQSJ	3.15 ³ , 6.3, 10, 16, 20, 25	2.0 (51)	21.2 (537)	35.5
	36TFQSJ	31.5, 40, 50	3.0 (76)		
	36TXQEJ*	63	3.5 (88)		20

* Not compliant with VDE 0670, part 402.

¹ IR RMS Sym. is 63 kA

² IR RMS Sym. is 40 kA

³ IR RMS Sym. is 20 kA

Catalog number build-a-code

Fuse catalog symbol Amps

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E.g., 17.5THMEJ-80 (17.5 kV 80 amp fuse)

Expulsion fuse links for use in high voltage distribution cut-outs

Expulsion fuse links available in a wide range of options from 15 to 72 kV in ANSI Type T and K characteristics. Expulsion fuse link current ratings should be selected on the basis of maximum expected transient no-damage currents rather than on full load current. In addition, the selection of higher current ratings will reduce the possibility of supply interruption due to transient surges such as those due to lightning strikes.

Links should be handled with a reasonable degree of care when installing. Excessively rough handling may damage the element.

It is normal, under certain fault conditions, for arc extinguishing material and/or metal particles to be expelled from the fuse assembly. It is therefore recommended that reasonable precautions be taken to prevent the installation being approached by unauthorized persons.

When ordering, select from the table below the characteristics in each column you need your fuse link to have.

Example: 15TB30 is a 15 kV, ANSI C 37-42 compliant fuse with a fixed button head terminal that is rated for 30 amps.

The fuse link assembly for a given range is standard to all rated voltages. The exception is the tail length that's varied to suit the expulsion carrier dimensions of different ratings.

Ratings*

- Volts 15-72 kV
- Amps 1-100 A
- Interrupting rating 8 kA approximate

* See catalog number configuring table for possible volt/amp combinations.

Agency information

- Type T, complies with ANSI C37-42
- Type K, complies with ANSI C37-42

Features

- Wide range of options available from 15 kV to 72 kV in ANSI T and K characteristics.
- Extra rapid option also available.



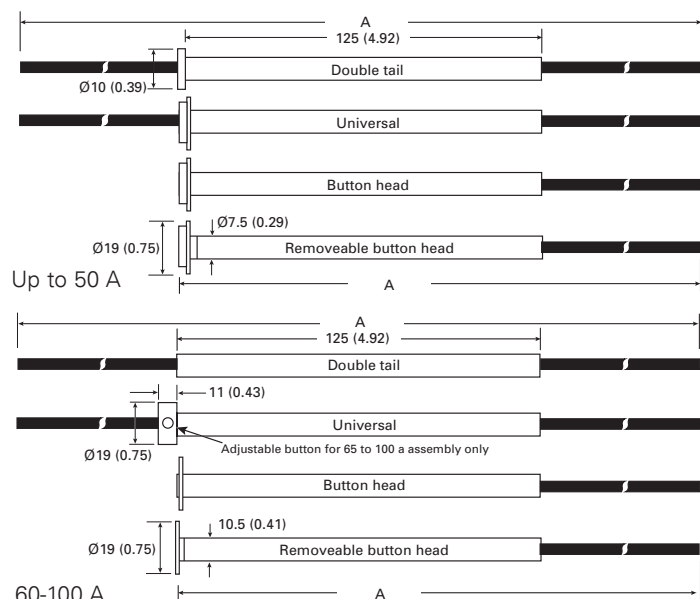
Typical applications

- Primary side transformer protection
- Feeder protection
- Capacitor bank protection

Fuse label color coding

Type	Color	Type	Color
XA	Pink	T	Green
K	Yellow	S	—

Dimensions — mm (in)



Link kV	A	Link kV	A
15	533 (21)	46	787 (31)
25	660 (26)	72	1016 (40)

Notes: Type BR is similar to button head shown, except that the button head is attached via a 1/4" UNF thread. Tails can be cut to desired length.

Catalog number configuration table

Available voltage ratings (kV)	1st letter = current characteristics type	2nd letter = termination type	Available amps ratings
15, 25, 46, 72	T = complies with ANSI C 37-42 requirements for slow acting T characteristics	B = a fixed NEMA button head link	1, 2, 3, 4, 5, 6, 7.5, 8, 10, 12, 15, 20, 25, 30, 40, 50, 60, 65, 75, 80, 100
	K = complies with ANSI C 37-42 requirements for fast acting K characteristics	U = a universal link, with double tail and slip off NEMA button head	
	XA = this type of expulsion fuse link has an extra rapid characteristic. It is suitable for applications where a high degree of system protection is required at the expense of discrimination.	D = double tailed link without NEMA button head	
	S = Solid links rated at 100 amps are also available in both button head and universal versions for fitting into expulsion fuse carriers where required. These can be ordered in a similar way using the abbreviation S, e.g. 15SB, etc.	BR = as pattern B but the button head is attached via a 1/4" UNF thread to allow use of an extension rod	

FL — Type H, and EEI-NEMA Type K and T fuses

Medium voltage fuses: Type H (high surge), EEI-NEMA Type K (fast-acting), EEI-NEMA Type T (time-delay).

High-surge, Type H fuses are manufactured in ratings of 1, 2, 3, 5, and 8 amps and were developed for primary fusing of small-sized transformers. Type H links are manufactured in the universal button head design.

Type N fuses conform to previous NEMA standards and are superseded by Type K and T links. Type N fuses are manufactured in the universal button design in ratings of 5 through 200 amps for use in standard NEMA dimensioned cutouts rated through 27 kV.

**Ratings***

- Volts rated to 27 kV
- Amps 1-200 A

* See catalog number table for type and amp combinations.

Features

- Wide range of EEI-NEMA type fuse links for use in open fuse cutouts
- Voltage rating up to 27 kV for flexible application
- Can be coordinated with other overcurrent protective devices for sectionalizing to isolate feeder branches

Typical applications

- Medium voltage fused cutouts

Type K universal silver-element cutout fuses rated to 27 kV

Catalog no.	
Fast-acting EEI-NEMA Type K	Amps
Non-removable button-head for standard open or enclosed cutouts	
FL12K8	8
FL12K10	10
FL12K12	12
FL12K15	15
FL12K25	25
FL12K50	50

Type H (high-surge), K and T universal tin element cutout fuses rated to 27 kV

Catalog no.			
EEI-NEMA			
Type H high surge	Type K fast-acting	Type T time-delay	Amps
Non-removable button-head for standard open or enclosed cutouts			
FL11H1	FL11K1	FL11T1	1
FL11H2	FL11K2	FL11T2	2
FL11H3	FL11K3	FL11T3	3
FL11H5	FL11K5	FL11T5	5
—	FL11K6	FL11T6	6
FL11H8	FL11K8	FL11T8	8
—	FL11K10	FL11T10	10
—	FL11K12	FL11T12	12
—	FL11K15	FL11T15	15
—	FL11K20	FL11T20	20
—	FL11K25	FL11T25	25
—	FL11K30	FL11T30	30
—	FL11K40	FL11T40	40
—	FL11K50	FL11T50	50
—	FL11K65	FL11T65	65
—	FL11K80	FL11T80	80
—	FL11K100	FL11T100	100
—	FL11K140	FL11T140	140
—	FL11K200	FL11T200	200
Removable button-head for cutouts requiring removable-button links*			
—	FL3K1	FL3T1	1
—	FL3K2	FL3T2	2
—	FL3K3	FL3T3	3
—	FL3K5	FL3T5	5
—	FL3K6	FL3T6	6
—	FL3K8	FL3T8	8
—	FL3K10	FL3T10	10
—	FL3K12	FL3T12	12
—	FL3K15	FL3T15	15
—	FL3K20	FL3T20	20
—	FL3K25	FL3T25	25
—	FL3K30	FL3T30	30
—	FL3K40	FL3T40	40
—	FL3K50	FL3T50	50
—	FL3K65	FL3T65	65
—	FL3K80	FL3T80	80
—	FL3K100	FL3T100	100
—	FL3K140	FL3T140	140
—	FL3K200	FL3T200	200

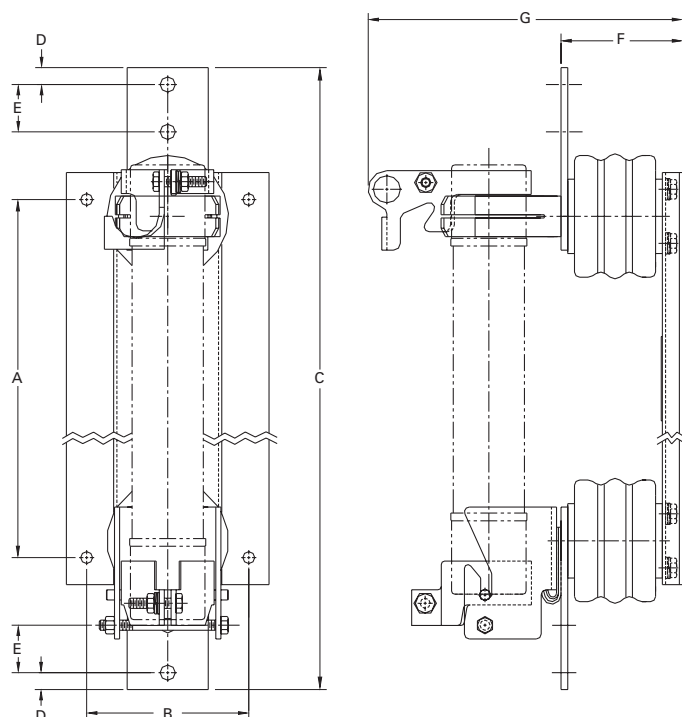
* Adapter-type removable-button links with ferrule adapter to convert to double-leader links are available in K and T types. Order by description.

PT fuse mountings — in (mm)

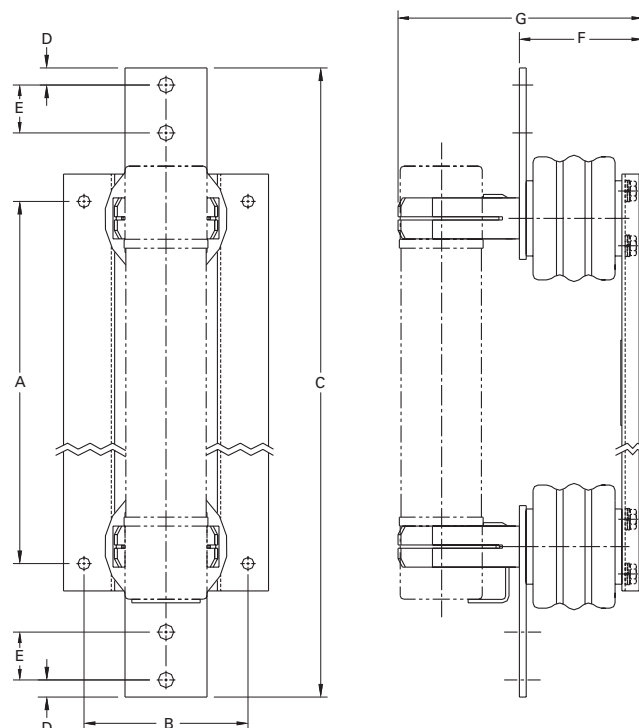
Catalog no.	Hole ctrs. A	Hole ctrs. B	Overall length C	Hole Inset D	Hole ctrs. E	Contact hgt. F	Overall hgt. G	BIL (kV)
5.5 kV Disconnect†								
5CLPT-GDM-A	9.37 (238)	6 (152.4)	18.63 (473.2)	0.75 (19)	1.75 (44.4)	4.5 (114.3)	9.56 (242.8)	60
5CLPT-PDM-A								
5.5 kV Non-disconnect								
5CLPT-GNM-A	9.37 (238)	6 (152.4)	18.63 (473.2)	0.75 (19)	1.75 (44.4)	4.5 (114.3)	6.94 (176.2)	60
5CLPT-PNM-A								
8.3 kV Disconnect†								
8CLPT-GDM-A	9.37 (238)	6 (152.4)	18.63 (473.2)	0.75 (19)	1.75 (44.4)	7 (177.8)	12.06 (306.3)	75
8CLPT-GDM-B								
8CLPT-PDM-A			22 (558.8)					
8CLPT-PDM-B								
8.3 kV Non-disconnect								
8CLPT-GNM-A	9.37 (238)	6 (152.4)	18.63 (473.2)	0.75 (19)	1.75 (44.4)	7 (177.8)	9.44 (239.8)	75
8CLPT-PNM-A								
8CLPT-GNM-B	22 (558.8)							
8CLPT-PNM-B								
15.5 kV Disconnect†								
15CLPT-GDM-A	12.74 (323.6)	6 (152.4)	22 (558.8)	0.75 (19)	1.75 (44.4)	7 (177.8)	12.06 (306.3)	95
15CLPT-PDM-A								
15CLPT-GDM-B	26.63 (676.4)							
15CLPT-PDM-B								
15.5 kV Non-disconnect								
15CLPT-GNM-A	12.74 (323.6)	6 (152.4)	22 (558.8)	0.75 (19)	1.75 (44.4)	7 (177.8)	9.44 (239.8)	95
15CLPT-PNM-A								
15CLPT-GNM-B	26.63 (676.4)							
15CLPT-PNM-B								
25.5 kV Disconnect†								
25CLPT-PDM-A	19.12 (485.6)	7 (177.8)	26.63 (676.4)	0.75 (19)	1.75 (44.4)	12 (304.8)	17.06 (433.3)	150
25.5 kV Non-disconnect								
25CLPT-PNM-A	26.63 (676.4)	7 (177.8)	26.63 (676.4)	0.75 (19)	1.75 (44.4)	12 (304.8)	14.75 (374.6)	150

† Disconnect mountings provide a means for fuse extraction only. Do not use a disconnect mounting for load switching or fuse removal while energized.

Disconnect mountings††



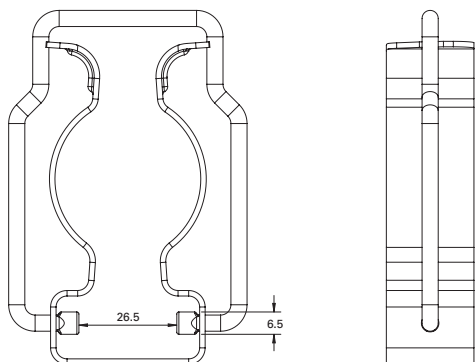
Non-disconnect mountings



Medium voltage fuses

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Figure 1



Technical drawing of the 1000 Series Ball Valve. The drawing includes a front view (top) and a side view (bottom). The front view shows a circular body with a central bore of diameter $\varnothing C$. The overall height is dimensioned as A, and the distance from the base to the center of the bore is dimensioned as B. The side view shows the valve's profile with a total length dimensioned as E. The distance from the base to the center of the bore is dimensioned as F, and the thickness of the body is dimensioned as G. The drawing also shows the valve handle and the connection ports.

Technical drawing of a fuse clip assembly, showing side and top views with dimensions and material specifications.

Side View Dimensions and Labels:

- Top wire diameter: 2.588 [1019] (10 GA.)
- Bottom wire diameter: 3.264 [1285] (8 GA.)
- Overall height: 112.78 [4.440]
- Center line: ϕ
- Labels: FUSE CLIP (PHOSPHOR BRONZE, SILVER PLATED), SPRING (PHOSPHOR BRONZE, TIN PLATED)

Top View Dimensions:

- Overall width: 101.60 [4.000]
- Distance between center lines: 39.62 [1.560]
- Distance from center line to right edge: 26.92 [1.060]
- Overall height: 38.10 [1.500]
- Distance from center line to bottom edge: 10.31 [.406]

Figure 4

