

HHO*-*

High Voltage Fuses to British and DIN Standards

Application Range Types

Fuses for protection of oil insulated transformer mains and oil insulated switchgear

SIBA HHO series of special purpose fuses are current-limiting "Back-Up" and "General Purpose" class for protection use inside of oil filled transformers. These fuses provide space and cost savings in distribution transformer substations while also fulfilling all requirements regarding oil tightness during the manufacturing phase of the transformer and also during its service of operation.

SIBA fuses are designed for decades of reliable usage and comply with the requirements for tightness for use under oil and for use in oil filled switchgear. Design and construction of these fuses follow well proven concepts of all SIBA high voltage fuses. For pressure resistant encapsulation a high grade ceramic is used. Contact materials consist of high conductivity copper with silver plating. The melting elements are of pure silver with appropriate optimization of notching to tight tolerances to ensure low deviations in the time-current curves and low let through currents yielding fuses that are "age resistant". The arc quenching material is quartz sand that is subjected to a particular specification regarding its composition, grain size and humidity level. Fuse units are also available with a striker.

Medium voltage SIBA Fuses HHO according to British Standard are current-limiting "Back-Up" fuses for the protection of substations up to 24kV. The fuses in this section comply with the following national standards;

- IEC 60282-1
- BS 2692 -1
- ESI 12-8

The fuses are fitted with a striker and are very useful in Fuse/Switch combinations that comply with the requirements of IEC 62271 part 105. These fuses are available for the following rated voltage ranges; 7.2kV, 12kV, 15.5kV and 24kV.

Medium voltage SIBA fuses HHO are current-limiting fuses and are available in "Back-Up" or the 'intrinsically safe General Purpose" for the protection of substations. The fuses in this section comply with the following national standards;

- IEC 60282-1

The fuses incorporate M8 threaded holes located at the ends of the contact caps for easy installation inside the transformer. The "Back Up" fuses are available in voltage ranges of 12kV, 24kV and 36kV and the "General Purpose" fuse are available in voltage ranges of 12kV, 17.5kV and 24kV

Medium voltage SIBA current-limiting "Back-UP" fuses are also available In DIN style rated for 24 kV and complies with the following standards:

- IEC 60282-1
- DIN 43625
- VDE 0670-4

HHO*-*

* Z - cylindiraal or D - DIN

– * B - backUp or G- General Purpose

Selection Guide

Under Oil Transformer and Switchgear Protection

HHOZ-B, Current-Limiting, Back-Up,

Current ratings [A]; 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80, 90, 100, 112, 125, 145

L=254mm	Page	L=359mm	Page			
7.2kV						
3013236.6.3 - 112	161	3023436.125 - 145	161			2.5" Clip
12kV						
3014436.6.3 - 100	163	3023736.6.3 - 125	163			2.5" Clip
15.5kV						
3029336.6.3 - 63	165	3029436.6.3 - 80	165			2.5" Clip
24kV						
		3015636.6.3 - 80	167			2.5" Clip

Current ratings [A]; 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125

L1=360mm	Page	L1=440mm	Page			
12kV						
3031011.6.3 - 125	169					M8 / M8 - No Striker
3031016.6.3 - 125	169					M8 / G 1/8" w / Striker
24kV						
3031211.6.3 - 80	171					M8 / M8 - No Striker
3031215.6.3 - 80	171					M8 / - w / Striker
3031216.6.3 - 80	171					M8 / G 1/8" w / Striker
36kV						
3032311.10 - 25	173	3032411.31.5 - 40	173			M8 / M8 - No Striker
3032316.10 - 25	173	3032416.31.5 - 40	173			M8 / G 1/8" w / Striker

HHOZ-G, Current-Limiting, General-Purpose

Current ratings [A]; 8, 10, 12, 16, 20, 22, 40, 50, 63

L1=360mm	Page	L1=440mm	Page			
12kV						
3031091.8 - 63	175					M8/M8 -No Striker
3031096.8 - 63	175					M8 /G 1/8" w/ Striker
17.5kV						
3031191.10 - 20	177					M8/M8 - No Striker
3031196.10 - 20	177					M8 /G 1/8" w/ Striker
24kV						
3031291.8 - 20	179					M8/M8 - No Striker
3031296.8 - 20	179					M8 /G 1/8" w/ Striker
		3031391.25 - 40	181			M8/M8 - No Striker
		3031396.25 - 40	181			M8 /G 1/8" w/ Striker

HHOD-B, DIN Style Current-Limiting, Back-Up,

Current ratings [A]; 6.3, 10, 16, 20, 25, 31.5,

E=192mm	Page	E=292mm	Page	E=367mm	Page	E=442mm	Page	E=537mm	Page
24kV									
						3033013.20 - 40	183		
						3046513.50 - 63	183		

HHOZ-B
7.2kV- Rated Voltage

High Voltage Current-Limiting Fuses

with 50N striker for use in
oil-insulated switchgear

Class

Back-Up

Standard(s)

IEC 60282-1

ESI 12-8

BS 2692-1

L = 254mm (FO1) / = 359mm (FO2)



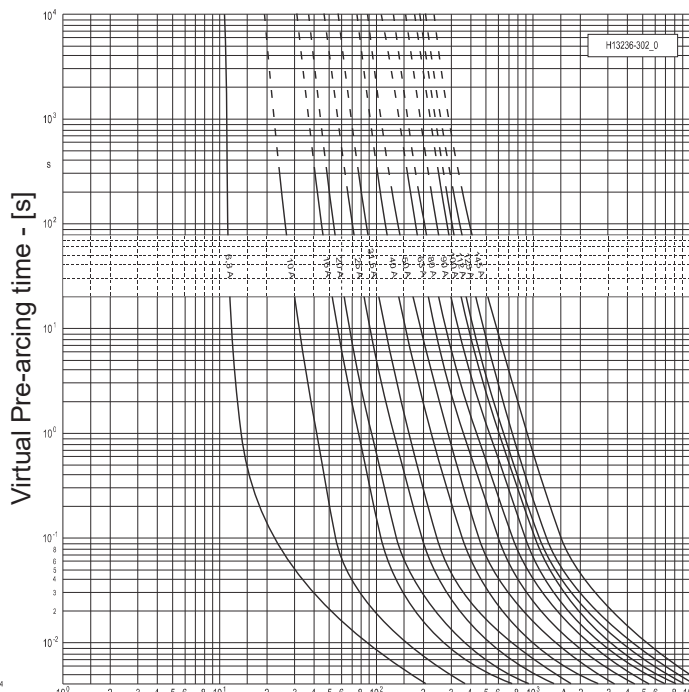
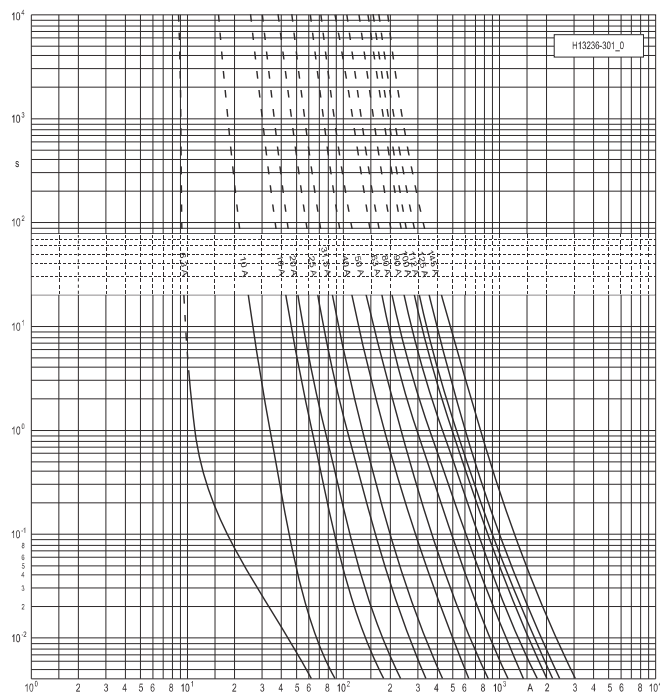
Rated current I_n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n (Min) 0.87U _n (Max) [A ² s] [A ² s]	Power loss [W]	Cold resistance [mΩ]
L = 254mm (FO1)									
6.3	3013236.6.3	2.50 / 63.5	1.8	40	—	14	80	140	—
10	3013236.10	2.50 / 63.5	1.8	40	—	50	270	450	—
16	3013236.16	2.50 / 63.5	1.8	40	—	190	1 070	1 800	—
20	3013236.20	2.50 / 63.5	1.8	40	—	290	1 680	2 900	—
25	3013236.25	2.50 / 63.5	1.8	40	—	600	3 670	6 100	—
31.5	3013236.31.5	2.50 / 63.5	1.8	40	—	1 000	6 000	10 000	—
40	3013236.40	2.50 / 63.5	1.8	40	—	2 300	13 400	23 300	—
50	3013236.50	2.50 / 63.5	1.8	40	—	2 800	21 600	36 000	—
63	3013236.63	2.50 / 63.5	1.8	40	—	6 500	38 200	66 500	—
80	3013236.80	2.50 / 63.5	1.8	40	—	9 900	56 500	100 000	—
90	3013236.90	2.50 / 63.5	1.8	40	—	15 500	91 400	157 000	—
100	3013236.100	2.50 / 63.5	1.8	40	—	22 200	127 200	218 000	—
112	3013236.112	2.50 / 63.5	1.8	40	—	28 300	166 700	278 000	—
L = 359mm (FO2)									
125	3023436.125	2.50 / 63.5	2.5	40	—	37 100	218 500	364 000	—
145	3023436.145	2.50 / 63.5	2.5	40	—	50 100	286 400	507 000	—



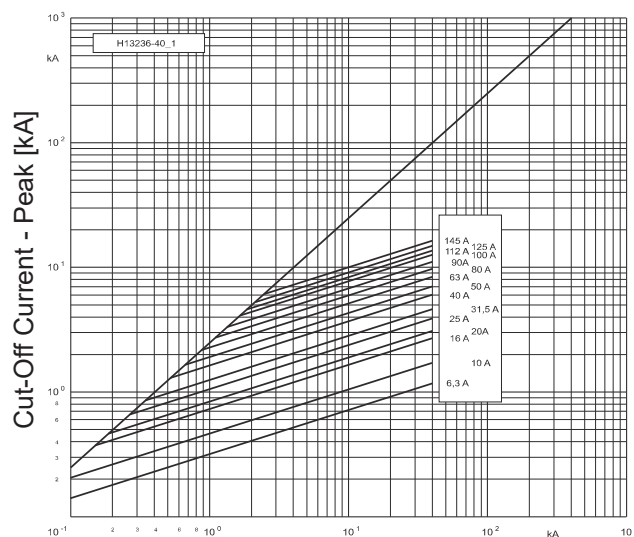
Dimensions [in/mm]		
3013236		3023436
10.00 / 254	L	14.13 / 359

HHOZ-B**Time-Current Characteristics - Minimum Melting and Total Clearing****Cut-Off Current Diagram****Current-Limiting, Back-Up, 7.2kV, L = 254 / 359mm (6.3A - 145A)**

3013236.6.3 - 112, 3023436.125 - 145

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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HHOZ-B
12kV- Rated Voltage
High Voltage Current-Limiting Fuses

 with 50N striker for use in
 oil-insulated switchgear

Standard(s)

IEC 60282-1

ESI 12-8

BS 2692-1

L = 254mm (FO1)
L = 359mm (FO2)
Class
Back-Up


Rated current I_n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n (Min) [A ² s]	0.87U _n (Max) [A ² s]	Power loss [W]	Cold resistance [mΩ]
L = 254mm (FO1)										
6.3	3014436.6.3	2.50 / 63.5	1.8	40	—	14	80	140	—	—
10	3014436.10	2.50 / 63.5	1.8	40	—	50	270	450	—	—
16	3014436.16	2.50 / 63.5	1.8	40	—	190	1 070	1 800	—	—
20	3014436.20	2.50 / 63.5	1.8	40	—	290	1 680	2 900	—	—
25	3014436.25	2.50 / 63.5	1.8	40	—	600	3 670	6 100	—	—
31.5	3014436.31.5	2.50 / 63.5	1.8	40	—	1 000	6 000	10 000	—	—
40	3014436.40	2.50 / 63.5	1.8	40	—	2 300	13 400	23 300	—	—
50	3014436.50	2.50 / 63.5	1.8	40	—	2 800	21 600	36 000	—	—
63	3014436.63	2.50 / 63.5	1.8	40	—	6 500	38 200	65 500	—	—
80	3014436.80	2.50 / 63.5	1.8	40	—	9 900	56 500	100 000	—	—
90	3014436.90	2.50 / 63.5	1.8	40	—	15 500	91 400	157 000	—	—
100	3014436.100	2.50 / 63.5	1.8	40	—	22 200	127 200	218 000	—	—
L = 359mm (FO2)										
6.3	3023736.6.3	2.50 / 63.5	2.5	40	—	14	80	140	—	—
10	3023736.10	2.50 / 63.5	2.5	40	—	50	270	450	—	—
16	3023736.16	2.50 / 63.5	2.5	40	—	190	1 070	1 800	—	—
20	3023736.20	2.50 / 63.5	2.5	40	—	290	1 680	2 900	—	—
25	3023736.25	2.50 / 63.5	2.5	40	—	600	3 670	6 100	—	—
31.5	3023736.31.5	2.50 / 63.5	2.5	40	—	1 000	6 000	10 000	—	—
40	3023736.40	2.50 / 63.5	2.5	40	—	2 300	13 400	23 300	—	—
50	3023736.50	2.50 / 63.5	2.5	40	—	2 800	21 600	36 000	—	—
63	3023736.63	2.50 / 63.5	2.5	40	—	6 500	38 200	66 500	—	—
80	3023736.80	2.50 / 63.5	2.5	40	—	9 900	56 500	100 000	—	—
90	3023736.90	2.50 / 63.5	2.5	40	—	15 500	91 400	157 000	—	—
100	3023736.100	2.50 / 63.5	2.5	40	—	22 200	127 200	218 000	—	—
112	3023736.112	2.50 / 63.5	2.5	40	—	28 300	166 700	278 000	—	—
125	3023736.125	2.50 / 63.5	2.5	40	—	37 100	218 500	364 000	—	—



Dimensions [in/mm]		
3014436		3023736
10.00 / 254	L	14.13 / 359

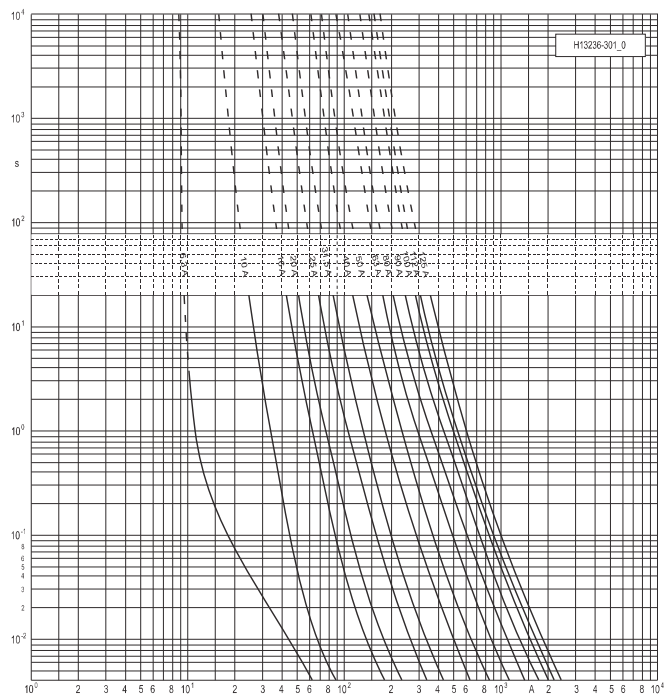
HHOZ-B

**Time-Current Characteristics - Minimum Melting and Total Clearing
Cut-Off Current Diagram**

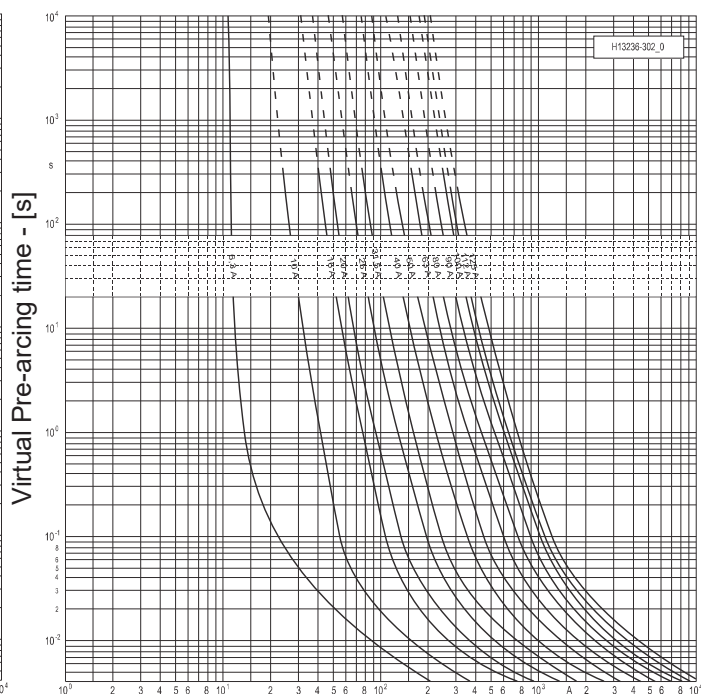
Current-Limiting, Back-Up, 12kV, L = 254 / 359mm (6.3A - 125A)

3014436.6.3 - 100, 3023736.6.3 - 125

Minimum Melting

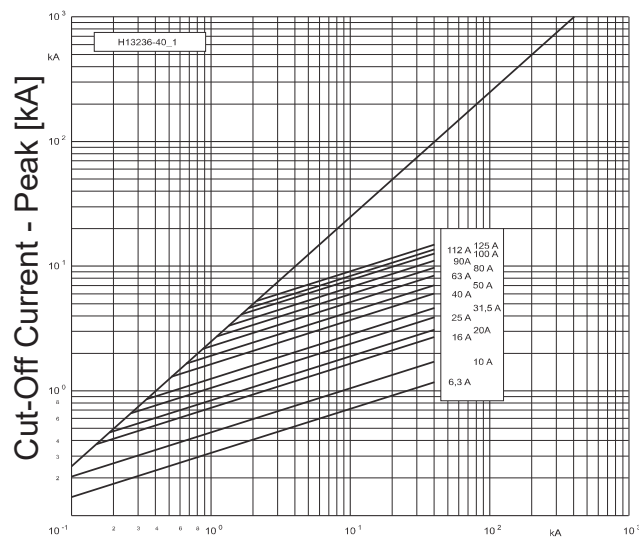


Total Clearing



R.M.S. Prospective Current [A]

Cut-Off Current



Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

HHOZ-B**15.5kV- Rated Voltage****High Voltage Current-Limiting Fuses**with 50N striker for use in
oil-insulated switchgear**Standard(s)**

IEC 60282-1

ESI 12-8

BS 2692-1

L = 254mm (FO1)**L = 359mm (FO2)****Class****Back-Up**

Rated current I_n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n (Min) [A ² s]	0.87U _n (Max) [A ² s]	Power loss [W]	Cold resistance [mΩ]
L = 254mm (FO1)										
6.3	3029336.6.3	2.50 / 63.5	1.8	40	—	14	80	140	—	—
10	3029336.10	2.50 / 63.5	1.8	40	—	50	270	450	—	—
16	3029336.16	2.50 / 63.5	1.8	40	—	190	1 070	1 800	—	—
20	3029336.20	2.50 / 63.5	1.8	40	—	290	1 680	2 900	—	—
25	3029336.25	2.50 / 63.5	1.8	40	—	600	3 670	6 100	—	—
31.5	3029336.31.5	2.50 / 63.5	1.8	40	—	1 000	6 000	10 000	—	—
40	3029336.40	2.50 / 63.5	1.8	40	—	2 300	13 400	23 300	—	—
50	3029336.50	2.50 / 63.5	1.8	40	—	2 800	21 600	36 000	—	—
63	3029336.63	2.50 / 63.5	1.8	40	30	6 500	38 200	65 500	—	—
L = 359mm (FO2)										
6.3	3029436.6.3	2.50 / 63.5	2.5	40	—	14	80	140	—	—
10	3029436.10	2.50 / 63.5	2.5	40	—	50	270	450	—	—
16	3029436.16	2.50 / 63.5	2.5	40	—	190	1 070	1 800	—	—
20	3029436.20	2.50 / 63.5	2.5	40	—	290	1 680	2 900	—	—
25	3029436.25	2.50 / 63.5	2.5	40	—	600	3 670	6 100	—	—
31.5	3029436.31.5	2.50 / 63.5	2.5	40	—	1 000	6 000	10 000	—	—
40	3029436.40	2.50 / 63.5	2.5	40	—	2 300	13 400	23 300	—	—
50	3029436.50	2.50 / 63.5	2.5	40	—	2 800	21 600	36 000	—	—
63	3029436.63	2.50 / 63.5	2.5	40	—	6 500	38 200	65 500	—	—
80	3029436.80	2.50 / 63.5	2.5	40	—	9 900	56 500	100 000	—	—



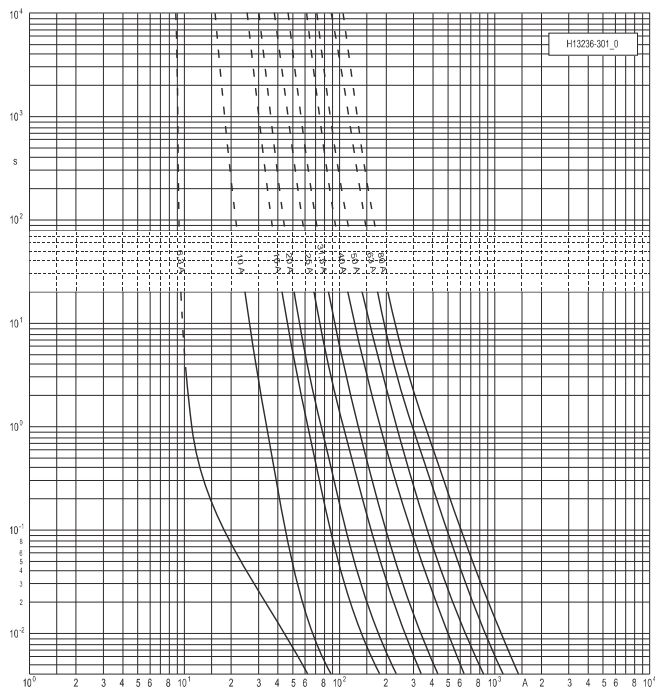
Dimensions [in/mm]		
3029336		3029436
10.00 / 254	L	14.13 / 359

HHOZ-B

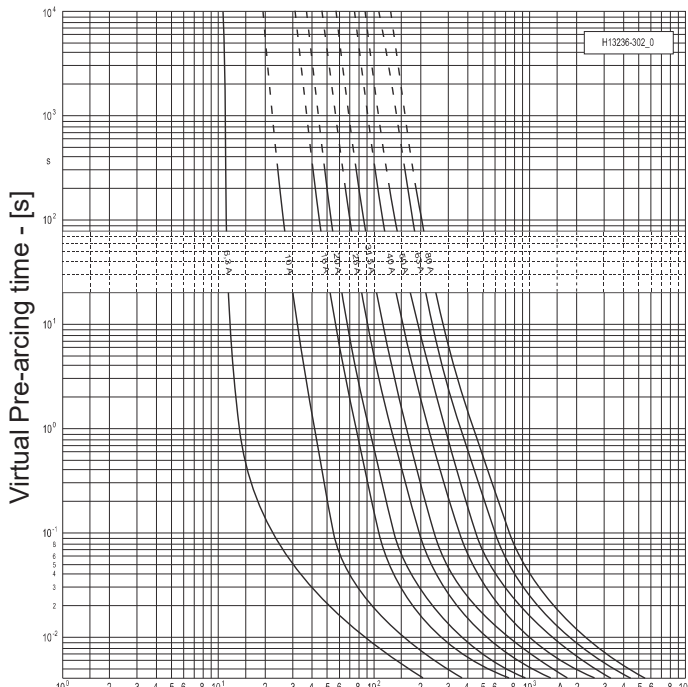
Time-Current Characteristics - Minimum Melting and Total Clearing
Cut-Off Current Diagram
Current-Limiting, Back-Up, 15.5kV, L = 254/359mm (6.3A - 80A)

3029336.6.3 - 63, 3029436.6.3 - 80

Minimum Melting

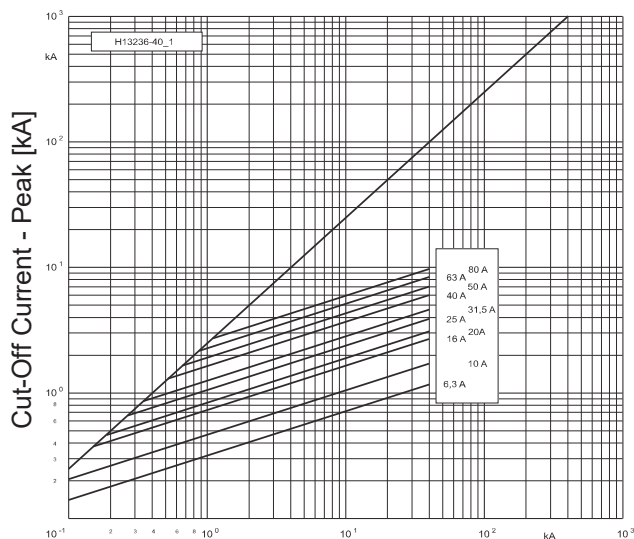


Total Clearing



R.M.S. Prospective Current [A]

Cut-Off Current



Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

HHOZ-B**24kV- Rated Voltage****High Voltage Current-Limiting Fuses**with 50N striker for use in
oil-insulated switchgear**Class****Back-Up****Standard(s)**

IEC 60282-1

ESI 12-8

BS 2692-1

L = 359mm

Rated current I_n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing $I^2 t$ [A ² s]	Total $I^2 t$ @ 0.87U _n (Min) [A ² s]	0.87U _n (Max) [A ² s]	Power loss [W]	Cold resistance [mΩ]
6.3	3015636.6.3	2.50 / 63.5	2.5	40	—	14	80	140	—	—
10	3015636.10	2.50 / 63.5	2.5	40	—	50	270	450	—	—
16	3015636.16	2.50 / 63.5	2.5	40	—	190	1 070	1 800	—	—
20	3015636.20	2.50 / 63.5	2.5	40	—	290	1 680	2 900	—	—
25	3015636.25	2.50 / 63.5	2.5	40	—	600	3 670	6 100	—	—
31.5	3015636.31.5	2.50 / 63.5	2.5	40	—	1 000	6 000	10 000	—	—
40	3015636.40	2.50 / 63.5	2.5	40	—	2 300	13 400	23 300	—	—
50	3015636.50	2.50 / 63.5	2.5	40	—	2 800	21 600	36 000	—	—
63	3015636.63	2.50 / 63.5	2.5	40	—	6 500	38 200	66 500	—	—
80	3015636.80	2.50 / 63.5	2.5	40	—	9 900	56 500	100 000	—	—



Dimensions [in/mm]	
3023736	
L	14.13 / 359

HHOZ-B

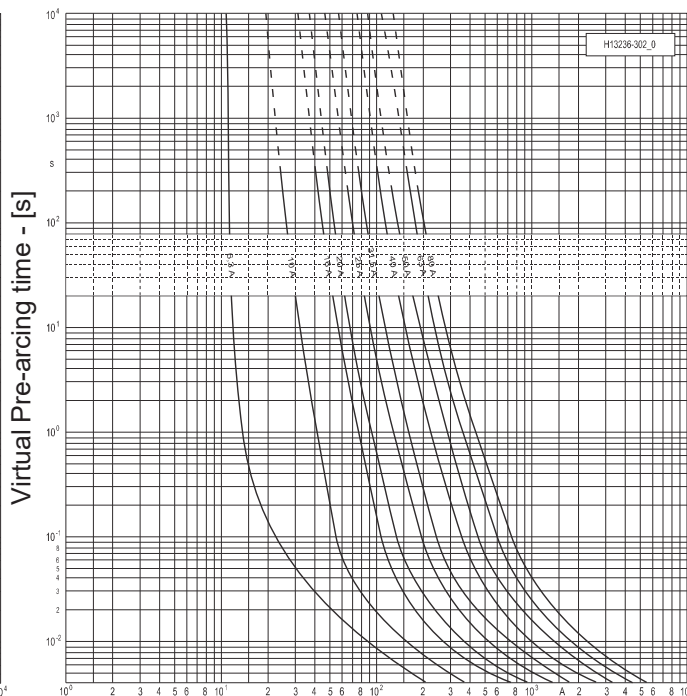
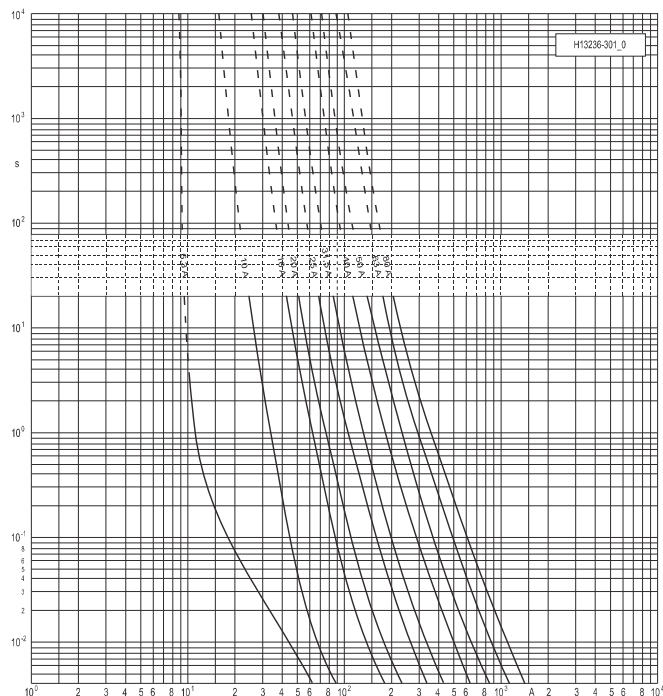
Time-Current Characteristics - Minimum Melting and Total Clearing Cut-Off Current Diagram

Current-Limiting, Back-Up, 24kV, L = 359mm (6.3A - 80A)

3015636.6.3 - 80

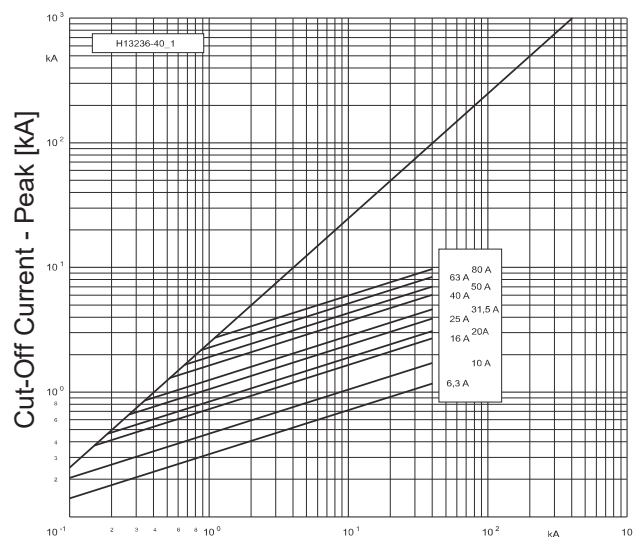
Minimum Melting

Total Clearing



R.M.S. Prospective Current [A]

Cut-Off Current



Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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HHOZ-B

12kV- Rated Voltage[U_n]

High Voltage Current-Limiting Fuses

with 50N striker for use in
oil-insulated switchgear

Class

Back-Up

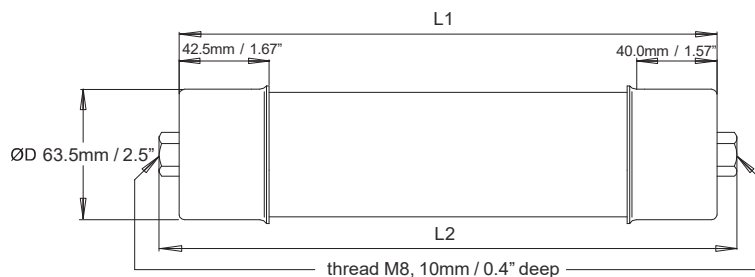
Standard(s)

IEC 60282-1

L1 = 360mm

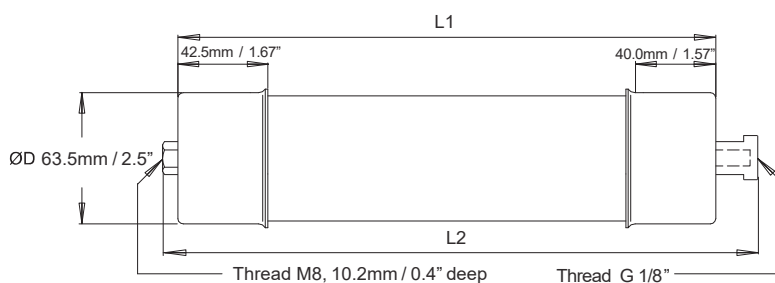


Rated current I_n [A]	Article Number	Diameter D	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n		Power loss [W]	Cold resistance [mΩ]
		[in/mm]					[A ² s]	[A ² s]		
L2 = 371mm W/O Striker										
6.3	3031011.6.3	2.50 / 63.5	2.6	63	22	45	—	360	16	—
10	3031011.10	2.50 / 63.5	2.6	63	34	75	—	560	28	—
16	3031011.16	2.50 / 63.5	2.6	63	56	250	—	2 000	28	—
20	3031011.20	2.50 / 63.5	2.6	63	70	640	—	4 800	23	—
25	3031011.25	2.50 / 63.5	2.6	63	90	1 050	—	7 500	29	—
31.5	3031011.31.5	2.50 / 63.5	2.6	63	110	1 700	—	12 000	38	—
40	3031011.40	2.50 / 63.5	2.6	63	140	2 900	—	19 000	50	—
50	3031011.50	2.50 / 63.5	2.6	63	170	5 700	—	33 000	56	—
63	3031011.63	2.50 / 63.5	2.6	63	210	10 700	—	66 600	63	—
80	3031011.80	2.50 / 63.5	2.6	63	280	17 500	—	175 000	120	—
100	3031011.100	2.50 / 63.5	2.6	63	350	41 500	—	415 000	136	—
125	3031011.125	2.50 / 63.5	2.6	63	438	56 500	—	565 000	181	—
L2 = 383mm With 50NStriker										
6.3	3031016.6.3	2.50 / 63.5	2.6	63	22	45	—	360	16	—
10	3031016.10	2.50 / 63.5	2.6	63	34	75	—	560	28	—
16	3031016.16	2.50 / 63.5	2.6	63	56	250	—	2 000	28	—
20	3031016.20	2.50 / 63.5	2.6	63	70	640	—	4 800	23	—
25	3031016.25	2.50 / 63.5	2.6	63	90	1 050	—	7 500	29	—
31.5	3031016.31.5	2.50 / 63.5	2.6	63	110	1 700	—	12 000	38	—
40	3031016.40	2.50 / 63.5	2.6	63	140	2 900	—	19 000	50	—
50	3031016.50	2.50 / 63.5	2.6	63	170	5 700	—	33 000	56	—
63	3031016.63	2.50 / 63.5	2.6	63	210	10 700	—	66 600	63	—
80	3031016.80	2.50 / 63.5	2.6	63	280	17 500	—	175 000	120	—
100	3031016.100	2.50 / 63.5	2.6	63	350	41 500	—	415 000	136	—
125	3031016.125	2.50 / 63.5	2.6	63	438	56 500	—	565 000	181	—



Dimensions [in/mm]		
3031011		3031016
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383

Maximum Torque 132lb•in / 15N•m



HHOZ-B

Time-Current Characteristics - Minimum Melting and Total Clearing

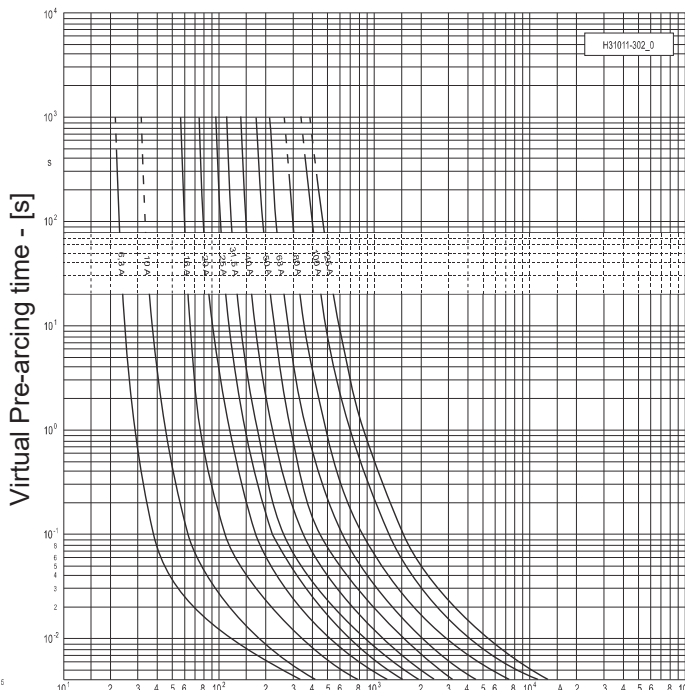
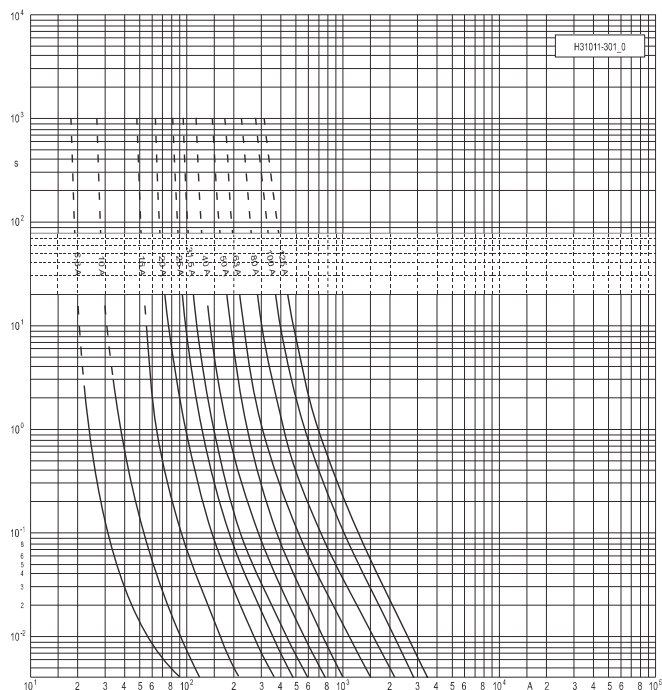
Cut-Off Current Diagram

Current-Limiting, Back-Up, 12kV, L1 = 360mm (6.3A - 125A)

3031011.6.3 - 125, 3031016.6.3 - 125

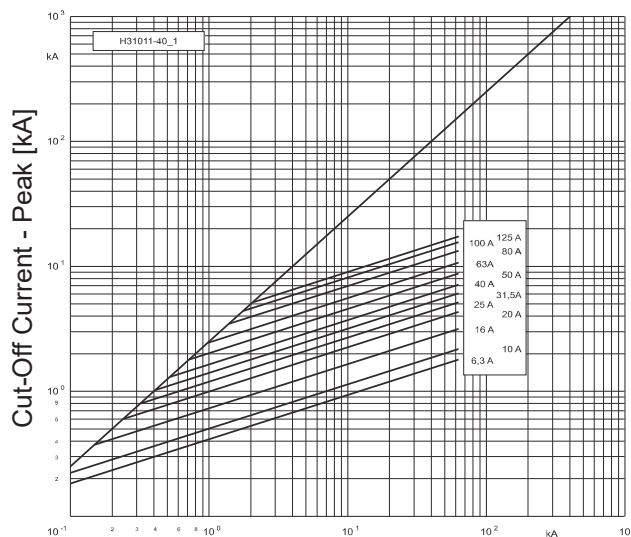
Minimum Melting

Total Clearing



R.M.S. Prospective Current [A]

Cut-Off Current



Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

HHOZ-B

24kV- Rated Voltage[U_n]

High Voltage Current-Limiting Fuses

with 50N striker for use in
oil-insulated switchgear

Class

Back-Up

Standard(s)

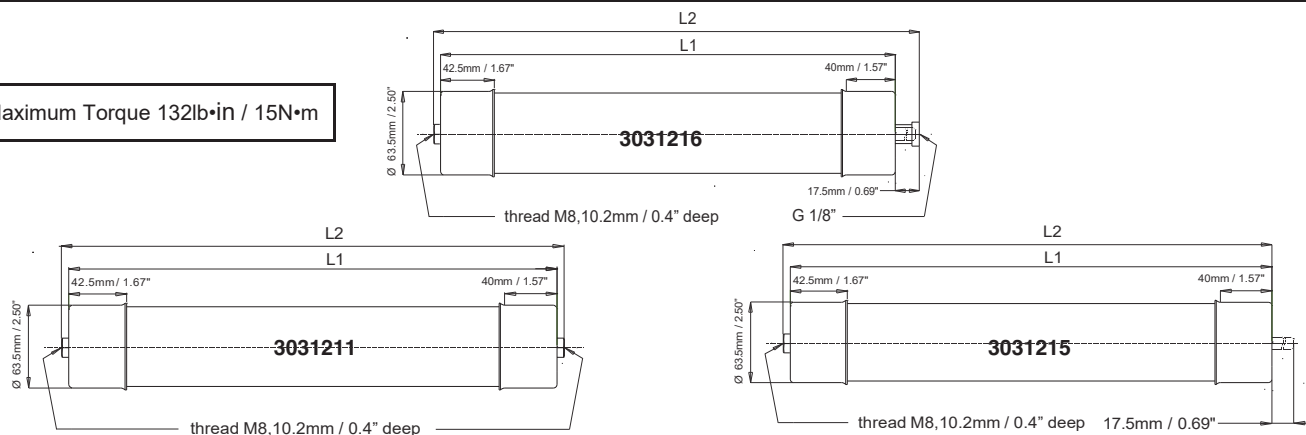
IEC 60282-1

L1 = 360mm



Rated current I_n [A]	Article Number	Diameter D	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n		Power loss [W]	Cold resistance [mΩ]
		[in/mm]					[A ² s]	[A ² s]		
L2 = 371mm W/O Striker										
6.3	3031211.6.3	2.50 / 63.5	2.6	63	25	30	—	160	30	—
10	3031211.10	2.50 / 63.5	2.6	63	35	70	—	400	54	—
16	3031211.16	2.50 / 63.5	2.6	63	56	120	—	1 200	61	—
20	3031211.20	2.50 / 63.5	2.6	63	70	550	—	5 500	28	—
25	3031211.25	2.50 / 63.5	2.6	63	95	920	—	9 200	58	—
31.5	3031211.31.5	2.50 / 63.5	2.6	63	120	1 400	—	14 000	76	—
40	3031211.40	2.50 / 63.5	2.6	63	140	2 200	—	22 000	94	—
50	3031211.50	2.50 / 63.5	2.6	63	180	4 700	—	47 000	108	—
63	3031211.63	2.50 / 63.5	2.6	63	220	8 700	—	87 600	114	—
80	3031211.80	2.50 / 63.5	2.6	63	300	15 500	—	150 000	176	—
L2 = 365mm With 50N Striker										
6.3	3031215.6.3	2.50 / 63.5	2.6	63	25	30	—	160	30	—
10	3031215.10	2.50 / 63.5	2.6	63	35	70	—	400	54	—
16	3031215.16	2.50 / 63.5	2.6	63	56	120	—	1 200	61	—
20	3031215.20	2.50 / 63.5	2.6	63	70	550	—	5 500	28	—
25	3031215.25	2.50 / 63.5	2.6	63	95	920	—	9 200	58	—
31.5	3031215.31.5	2.50 / 63.5	2.6	63	120	1 400	—	14 000	76	—
40	3031215.40	2.50 / 63.5	2.6	63	140	2 200	—	22 000	94	—
50	3031215.50	2.50 / 63.5	2.6	63	180	4 700	—	47 000	108	—
63	3031215.63	2.50 / 63.5	2.6	63	220	8 700	—	87 600	114	—
80	3031215.80	2.50 / 63.5	2.6	63	300	15 500	—	150 000	176	—
L2 = 383mm With 50N Striker										
6.3	3031216.6.3	2.50 / 63.5	2.6	63	25	30	—	160	30	—
10	3031216.10	2.50 / 63.5	2.6	63	35	70	—	400	54	—
16	3031216.16	2.50 / 63.5	2.6	63	56	120	—	1 200	61	—
20	3031216.20	2.50 / 63.5	2.6	63	70	550	—	5 500	28	—
25	3031216.25	2.50 / 63.5	2.6	63	95	920	—	9 200	58	—
31.5	3031216.31.5	2.50 / 63.5	2.6	63	120	1 400	—	14 000	76	—
40	3031216.40	2.50 / 63.5	2.6	63	140	2 200	—	22 000	94	—
50	3031216.50	2.50 / 63.5	2.6	63	180	4 700	—	47 000	108	—
63	3031216.63	2.50 / 63.5	2.6	63	220	8 700	—	87 600	114	—
80	3031216.80	2.50 / 63.5	2.6	63	300	15 500	—	150 000	176	—

Maximum Torque 132lb·in / 15N·m



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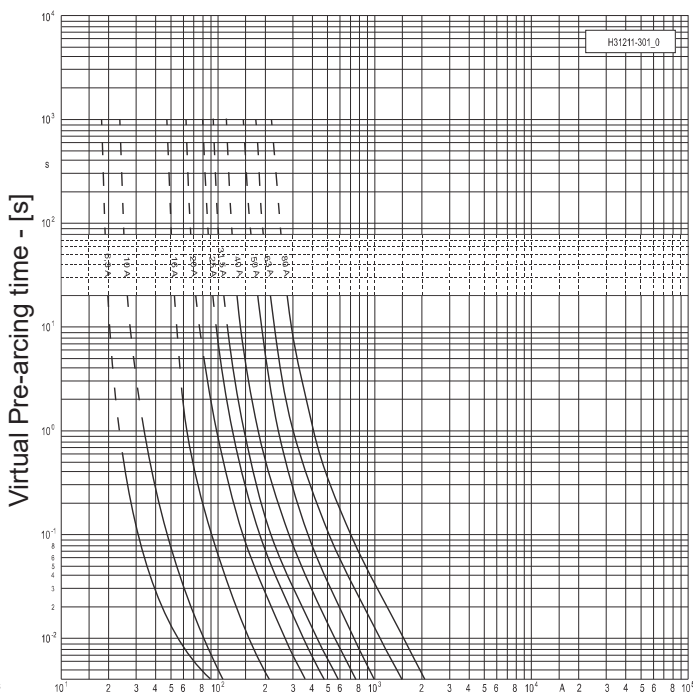
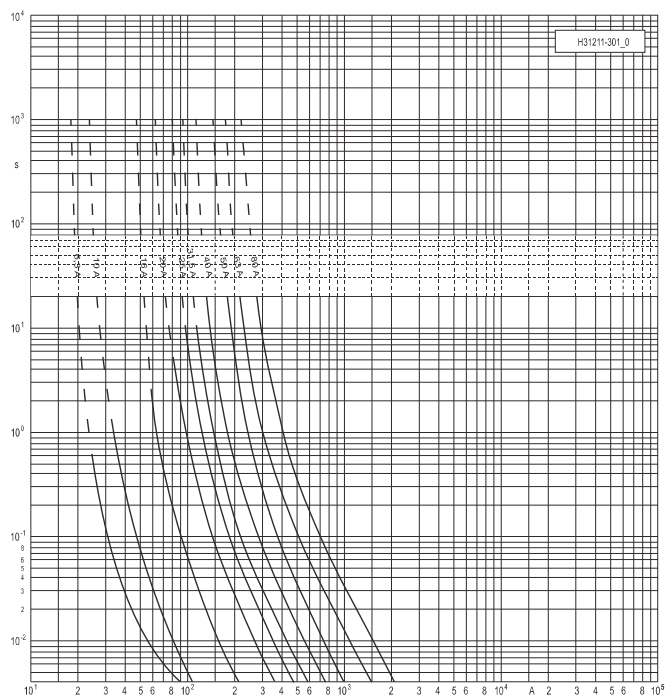
Phone 1-973-575-7422

Fax 1-973-575-5858

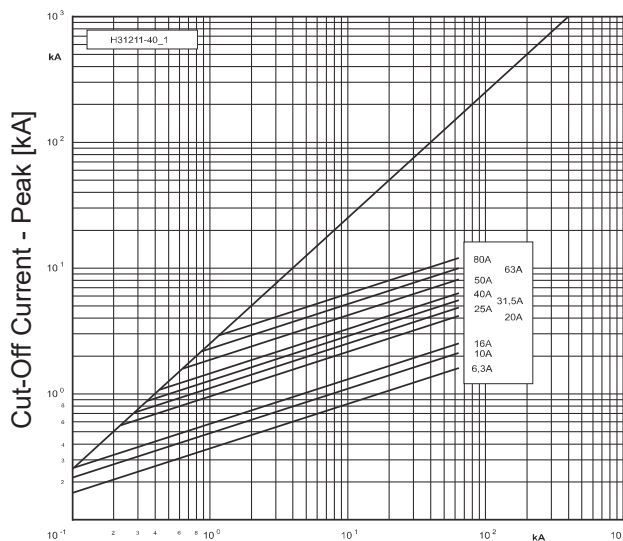
29 Fairfield Place
West Caldwell, New Jersey 07006portal: www.siballc.net
e-mail: info@sibafuse.com

HHOZ-B**Time-Current Characteristics - Minimum Melting and Total Clearing****Cut-Off Current Diagram****Current-Limiting, Back-Up, 24kV, L1 = 360mm (10A - 20A)**

3031211.6.3 - 80, 3031215.6.3 - 80, 3031216.6.3 - 80

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

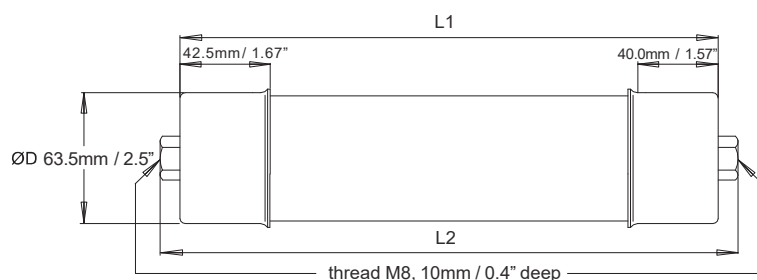
Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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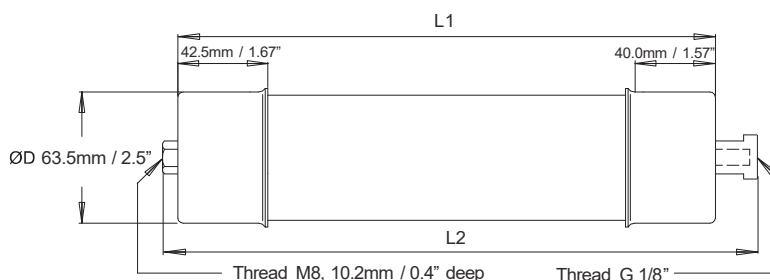
HHOZ-B**36kV- Rated Voltage[U_n]****High Voltage Current-Limiting Fuses**with 50N striker for use in
oil-insulated switchgear**Class****Back-Up****Standard(s)****IEC 60282-1****L1 = 360mm / 440mm**

Rated current I_n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87 U_n [A ² s]	Power loss [W]	Cold resistance [mΩ]
L1 = 360mm / L2 = 371mm W/O Striker									
10	3032311.10	2.50 / 63.5	2.6	40	30	70	—	1 100	85
16	3032311.16	2.50 / 63.5	2.6	40	60	120	—	1 900	50
20	3032311.20	2.50 / 63.5	2.6	40	80	550	—	6 600	73
25	3032311.25	2.50 / 63.5	2.6	40	100	920	—	11 000	88
L1 = 440mm / L2 = 451mm W/O Striker									
31.5	3032411.31.5	2.50 / 63.5	3.6	40	130	1 400	—	16 800	132
40	3032411.40	2.50 / 63.5	3.6	40	160	2 640	—	31 700	155
L1 = 360mm / L2 = 383mm With 50N Striker									
10	3032316.10	2.50 / 63.5	2.6	40	30	70	—	1 100	85
16	3032316.16	2.50 / 63.5	2.6	40	60	120	—	1 900	50
20	3032316.20	2.50 / 63.5	2.6	40	80	550	—	6 600	73
25	3032316.25	2.50 / 63.5	2.6	40	100	920	—	11 000	88
L1 = 440mm / L2 = 463mm With 50N Striker									
31.5	3032416.31.5	2.50 / 63.5	3.6	40	130	1 400	—	16 800	132
40	3032416.40	2.50 / 63.5	3.6	40	160	2 640	—	31 700	155



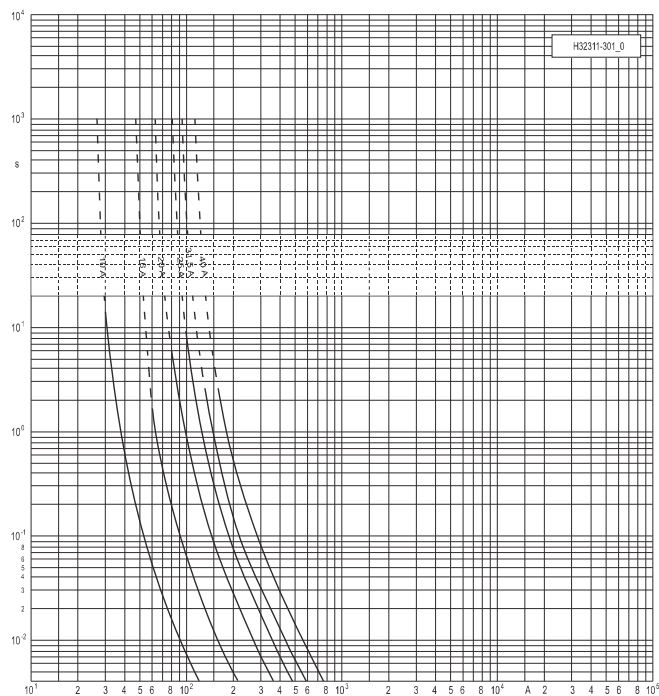
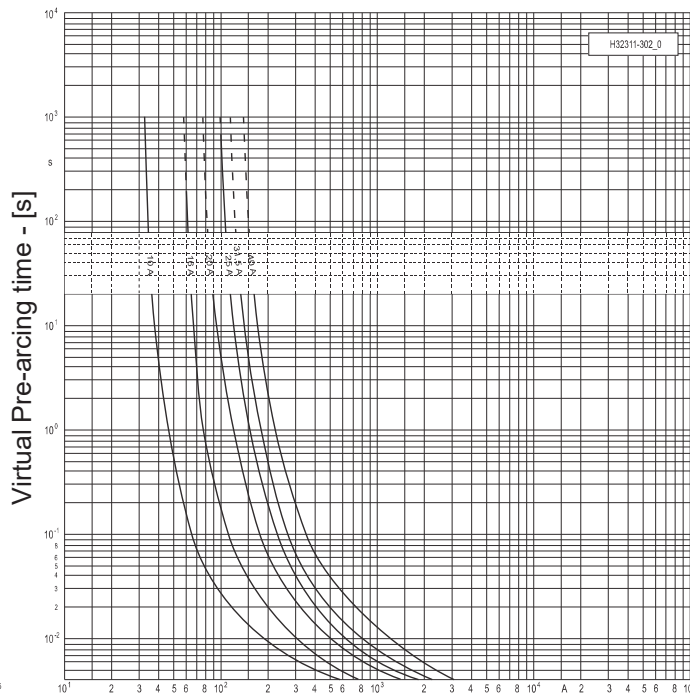
Dimensions [in/mm]		
3032311		3032316
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383
3032411		3032416
17.32 / 440	L1	17.32 / 440
17.76 / 451	L2	18.023 / 463

Maximum Torque 132lb•in / 15N•m

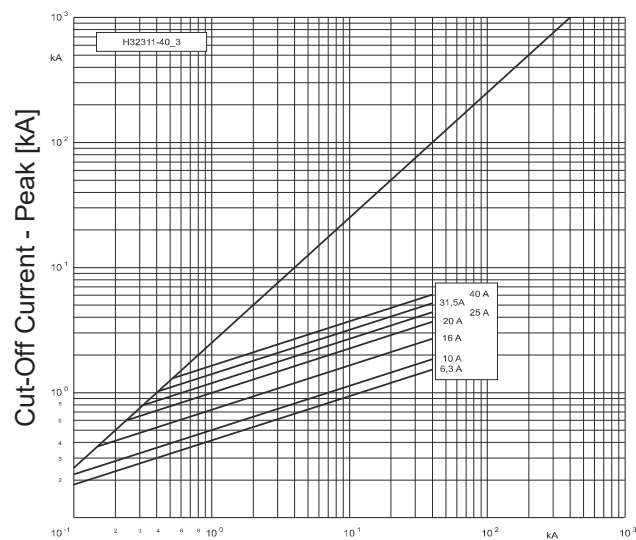


HHOZ-B**Time-Current Characteristics - Minimum Melting and Total Clearing
Cut-Off Current Diagram****Current-Limiting, Back-Up, 36kV, L1 = 360 / 440mm (10A - 40A)**

3032311.10 - 25, 3032411.31.5 - 40, 3032316.10 - 25, 3032416.31.5 - 40

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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HHOZ-G
12kV- Rated Voltage[U_n]

High Voltage Current-Limiting Fuses
Oil Insulated-Transformers

Standard(s)
IEC 60282-1

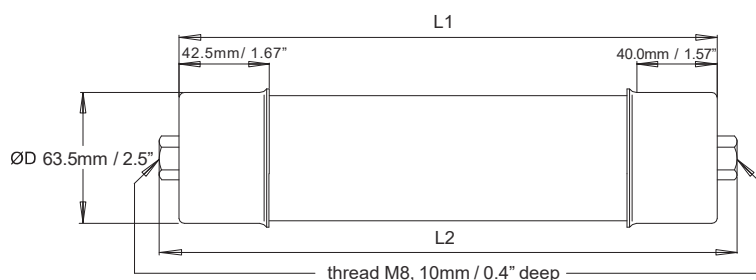
Class

General-Purpose

L1 = 360mm

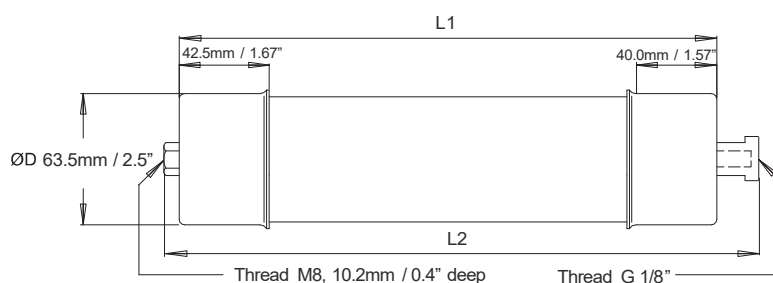


Rated current I_n [A]	Article Number	Diameter	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ $0.87U_n$		Power loss [W]	Cold resistance [mΩ]
		D								
		[in/mm]								
L2 = 371mm W/O Striker										
8	3031091.8	2.50 / 63.5	2.6	63	25	172	—	1 800	8	—
10	3031091.10	2.50 / 63.5	2.6	63	29	250	—	2 800	11	—
16	3031091.16	2.50 / 63.5	2.6	63	37	340	—	3 800	13	—
20	3031091.20	2.50 / 63.5	2.6	63	42	830	—	9 200	17	—
25	3031091.25	2.50 / 63.5	2.6	63	60	1 730	—	17 300	20	—
31.5	3031091.32	2.50 / 63.5	2.6	63	67	2 260	—	22 600	12	—
40	3031091.43	2.50 / 63.5	2.6	63	80	3 530	—	35 500	35	—
50	3031091.50	2.50 / 63.5	2.6	63	96	5 490	—	55 000	46	—
63	3031091.63	2.50 / 63.5	2.6	63	123	9 030	—	90 000	62	—
L2 = 383mm With 50N Striker										
8	3031096.8	2.50 / 63.5	2.6	63	25	172	—	1 800	8	—
10	3031096.10	2.50 / 63.5	2.6	63	29	250	—	2 800	11	—
16	3031096.16	2.50 / 63.5	2.6	63	37	340	—	3 800	13	—
20	3031096.20	2.50 / 63.5	2.6	63	42	830	—	9 200	17	—
25	3031096.25	2.50 / 63.5	2.6	63	60	1 730	—	17 300	20	—
31.5	3031096.31.5	2.50 / 63.5	2.6	63	67	2 260	—	22 600	12	—
40	3031096.40	2.50 / 63.5	2.6	63	80	3 530	—	35 500	35	—
50	3031096.50	2.50 / 63.5	2.6	63	96	5 490	—	55 000	46	—
63	3031096.63	2.50 / 63.5	2.6	63	123	9 030	—	90 000	62	—



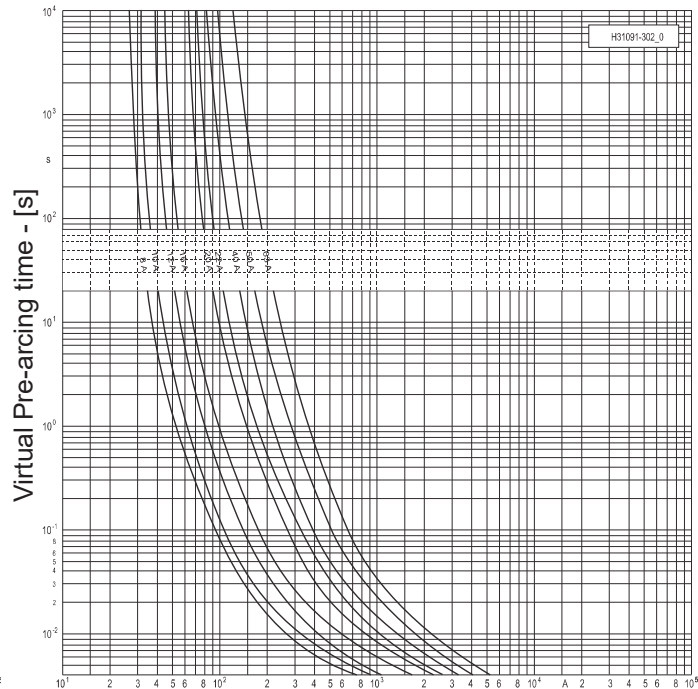
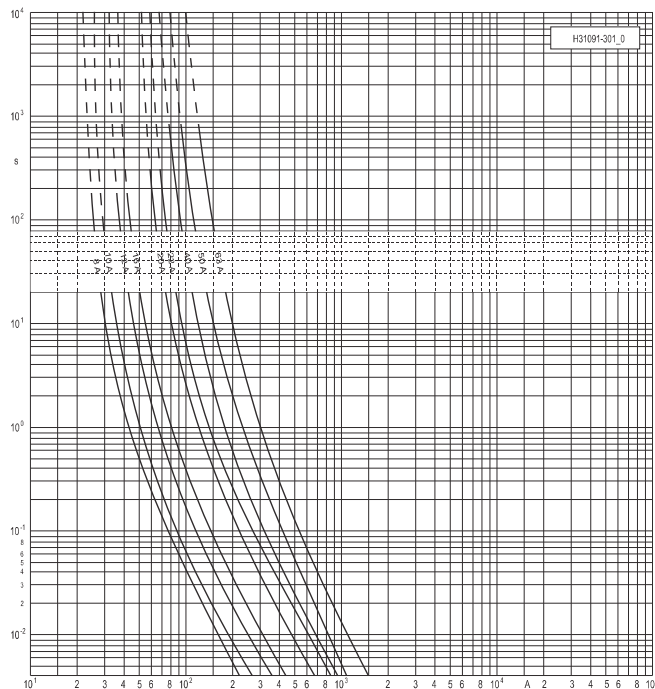
Dimensions [in/mm]		
3031091		3031096
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383

Maximum Torque 132lb•in / 15N•m

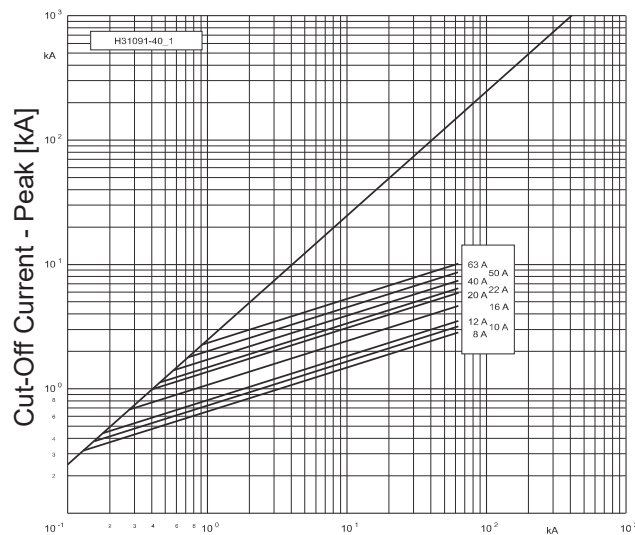


HHOZ-G**Time-Current Characteristics - Minimum Melting and Total Clearing****Cut-Off Current Diagram****Current-Limiting, General-Purpose, 12kV, L1 = 360mm (6.3A - 63A)**

3031091.8 - 63, 3031096.8 - 63

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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HHOZ-G
17.5kV- Rated Voltage[U_n]

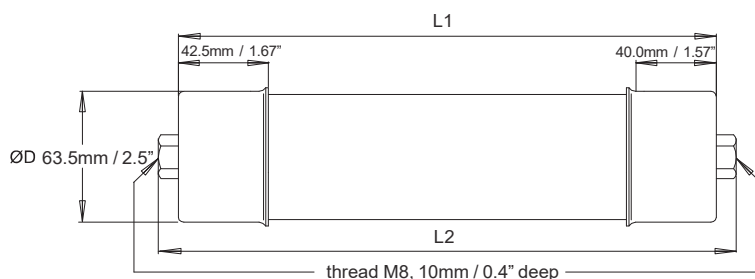
High Voltage Current-Limiting Fuses
Oil Insulated Transformers

Standard(s)
IEC 60282-1



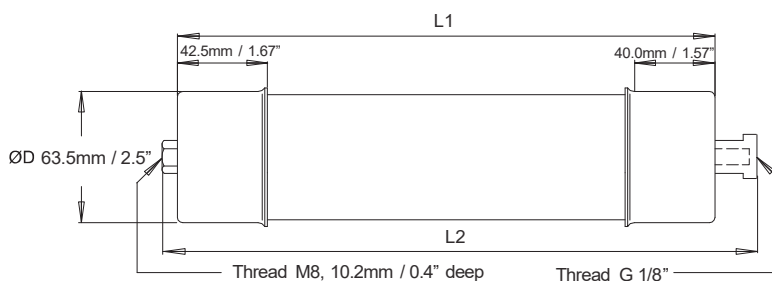
L1 = 360mm
Class
General-Purpose

Rated current I _n [A]	Article Number	Diameter	Weight [kg/l]	Rated breaking current I ₁ [kA]	Minimum breaking current I ₃ [A]	Pre-arcing I ² t [A ² s]	Total I ² t @ 0.87U _n [A ² s]	Power loss [W]	Cold resistance [mΩ]	
		D [in/mm]								
L2 = 371mm W/O Striker										
10	3031191.10	2.50 / 63.5	2.6	63	33	250	—	2 400	16	—
16	3031191.16	2.50 / 63.5	2.6	63	41	1 100	—	12 000	18	—
20	3031191.20	2.50 / 63.5	2.6	63	57	1 700	—	13 500	18	—
L2 = 383mm With 50NStriker										
10	3031196.10	2.50 / 63.5	2.6	63	33	250	—	2 400	16	—
16	3031196.16	2.50 / 63.5	2.6	63	41	1 100	—	12 000	18	—
20	3031196.20	2.50 / 63.5	2.6	63	57	1 700	—	13 500	18	—



Dimensions [in/mm]		
3031191		3031196
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383

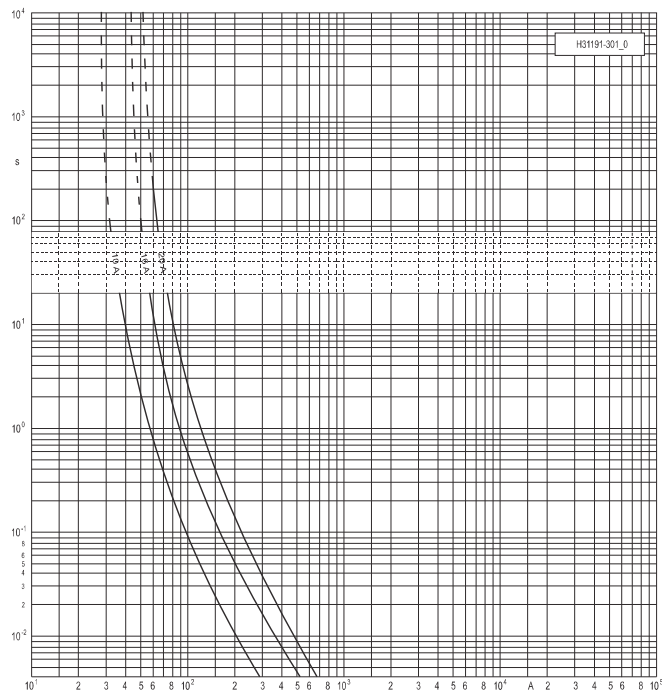
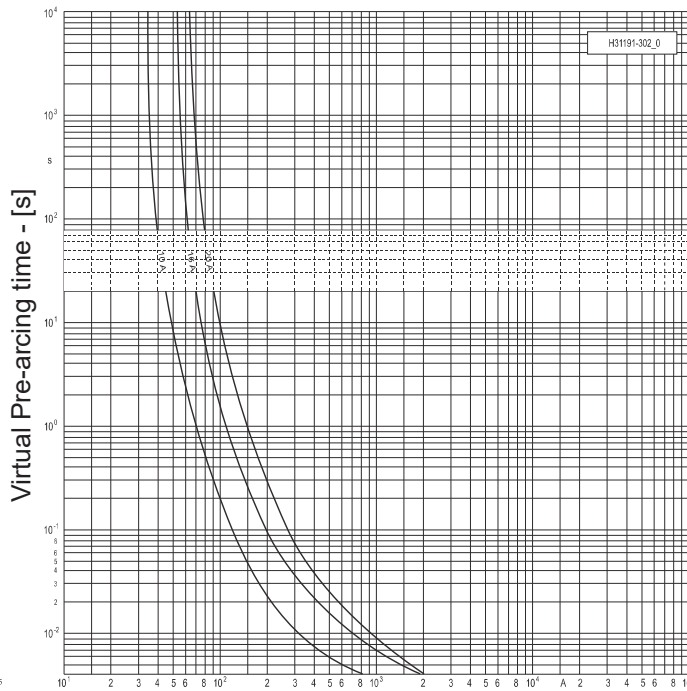
Maximum Torque 132lb•in / 15N•m



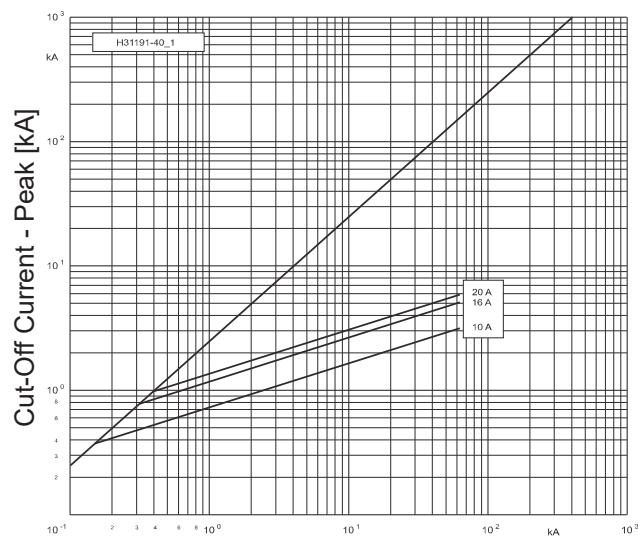
HHOZ-G

Time-Current Characteristics - Minimum Melting and Total Clearing
Cut-Off Current Diagram
 Current-Limiting, General-Purpose, 17.5kV, L1 = 360mm (10A - 20A)

3031191.10 - 20, 3031196.10 - 20

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

HHOZ-G

24kV- Rated Voltage[U_n]

High Voltage Current-Limiting Fuses

Oil Insulated Transformers

Standard(s)

IEC 60282-1

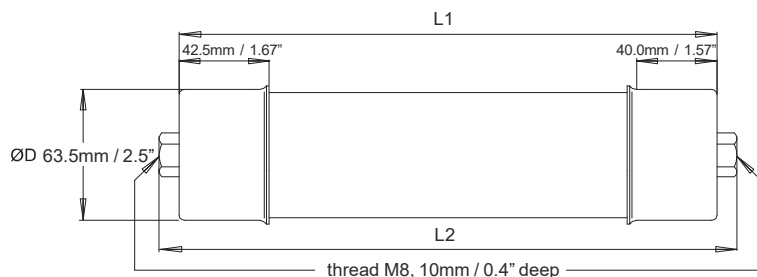
Class



L1 = 360mm

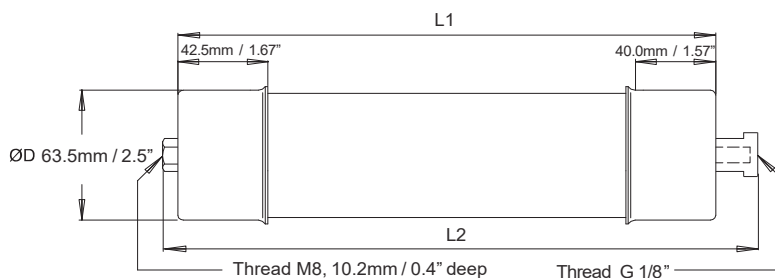
General-Purpose

Rated current I _n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I ₁ [kA]	Minimum breaking current I ₃ [A]	Pre-arcing I ² t [A ² s]	Total I ² t @ 0.87U _n [A ² s]	Power loss [W]	Cold resistance [mΩ]
L2 = 371mm W/O Striker									
8	3031291.8	2.50 / 63.5	2.6	63	25	172	—	1 900	17
10	3031291.10	2.50 / 63.5	2.6	63	29	250	—	2 800	21
12	3031291.12	2.50 / 63.5	2.6	63	37	460	—	5 100	24
16	3031291.16	2.50 / 63.5	2.6	63	42	830	—	8 300	31
20	3031291.20	2.50 / 63.5	2.6	63	60	1 730	—	17 300	21
L2 = 383mm With Striker									
8	3031296.8	2.50 / 63.5	2.6	63	25	172	—	1 900	17
10	3031296.10	2.50 / 63.5	2.6	63	29	250	—	2 800	21
12	3031296.12	2.50 / 63.5	2.6	63	37	460	—	5 100	24
16	3031296.16	2.50 / 63.5	2.6	63	42	830	—	8 300	31
20	3031296.20	2.50 / 63.5	2.6	63	60	1 730	—	17 300	21



Dimensions [in/mm]		
3031291		3031296
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383

Maximum Torque 132lb•in / 15N•m

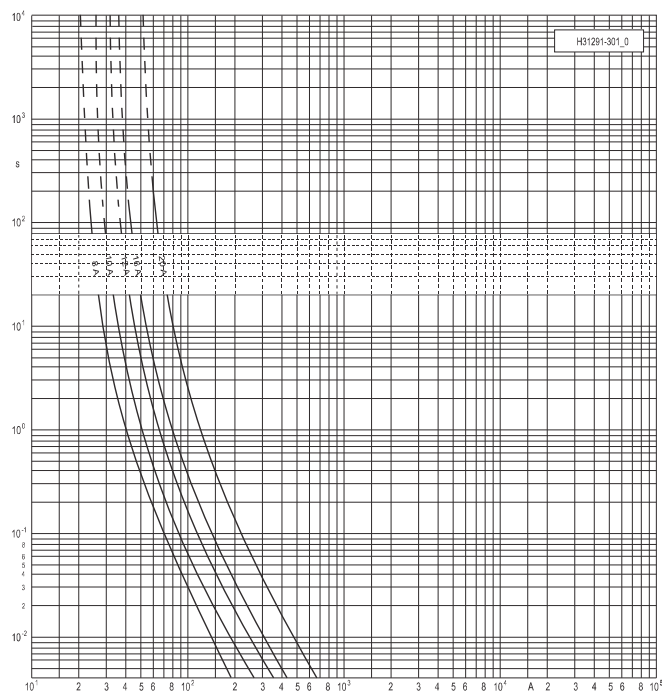
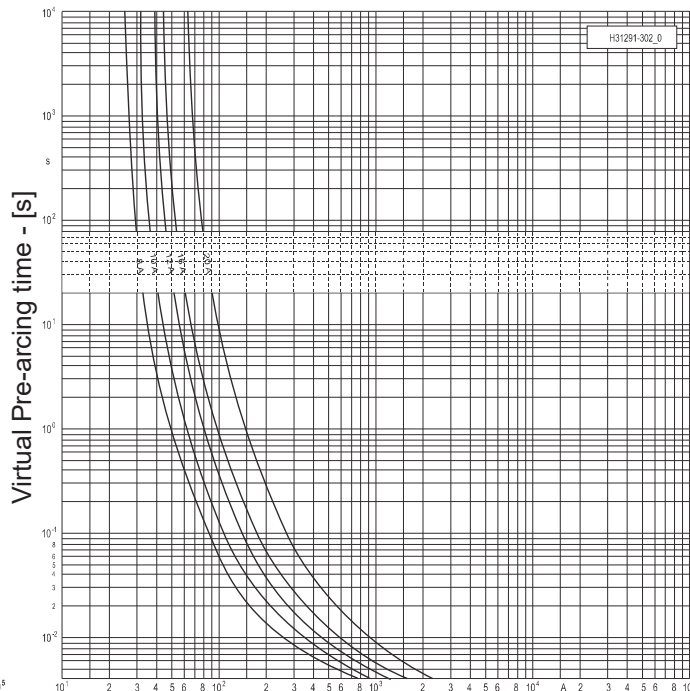


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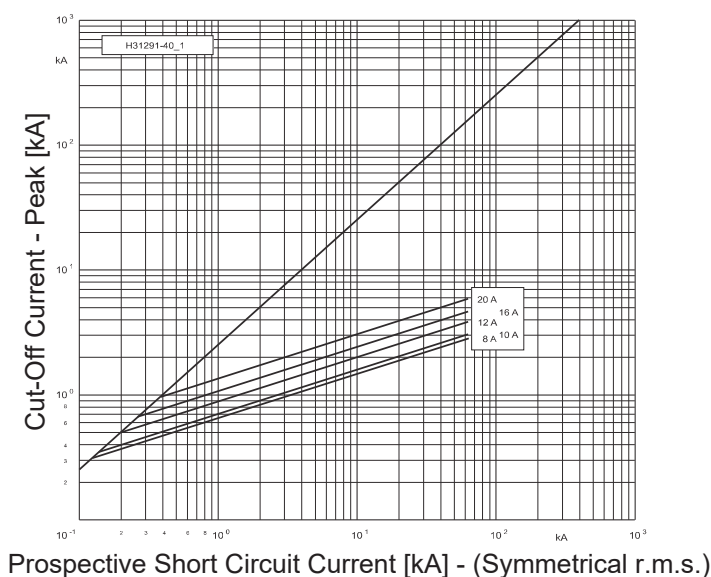
29 Fairfield Place
West Caldwell, New Jersey 07006Phone 1-973-575-7422
Fax 1-973-575-5858portal: www.siballc.net
e-mail: info@sibafuse.com

**HHOZ-G Time-Current Characteristics - Minimum Melting and Total Clearing
Cut-Off Current Diagram**
Current-Limiting, General-Purpose, 24kV, L1 = 360mm (8A - 20A)

3031291.8 - 20, 3031296.8 - 20

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Full size graphs available upon request.

HHOZ-G

24kV- Rated Voltage[U_n]

High Voltage Current-Limiting Fuses

Oil Insulated Transformers

Standard(s)

IEC 60282-1

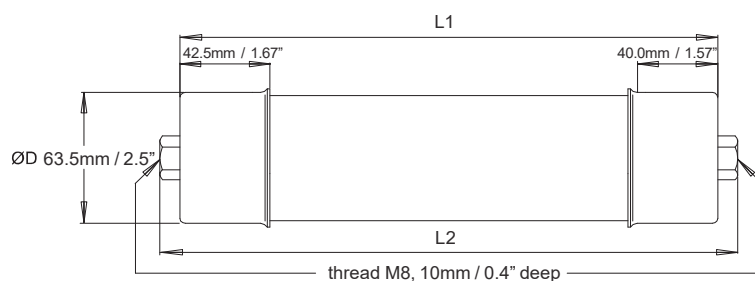
Class

General-Purpose

L1 = 360mm

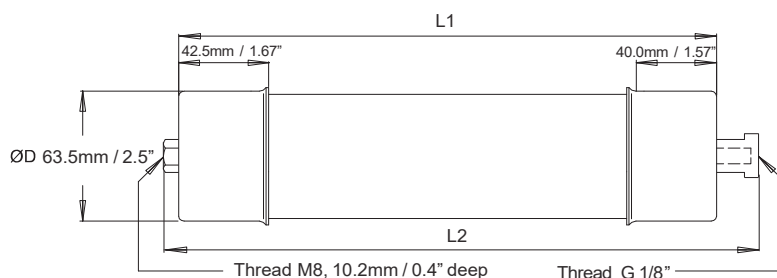


Rated current I _n [A]	Article Number	Diameter D [in/mm]	Weight [kg/l]	Rated breaking current I ₁ [kA]	Minimum breaking current I ₃ [A]	Pre-arcing I ² t [A ² s]	Total I ² t @ 0.87U _n [A ² s]	Power loss [W]	Cold resistance [mΩ]
L2 = 371mm W/O Striker									
8	3031391.8	2.50 / 63.5	2.6	63	25	172	—	1 900	17
10	3031391.10	2.50 / 63.5	2.6	63	29	250	—	2 800	21
12	3031391.12	2.50 / 63.5	2.6	63	37	460	—	5 100	24
16	3031391.16	2.50 / 63.5	2.6	63	42	830	—	8 300	31
20	3031391.20	2.50 / 63.5	2.6	63	60	1 730	—	17 300	21
L2 = 383mm With Striker									
8	3031396.8	2.50 / 63.5	2.6	63	25	172	—	1 900	17
10	3031396.10	2.50 / 63.5	2.6	63	29	250	—	2 800	21
12	3031396.12	2.50 / 63.5	2.6	63	37	460	—	5 100	24
16	3031396.16	2.50 / 63.5	2.6	63	42	830	—	8 300	31
20	3031396.20	2.50 / 63.5	2.6	63	60	1 730	—	17 300	21



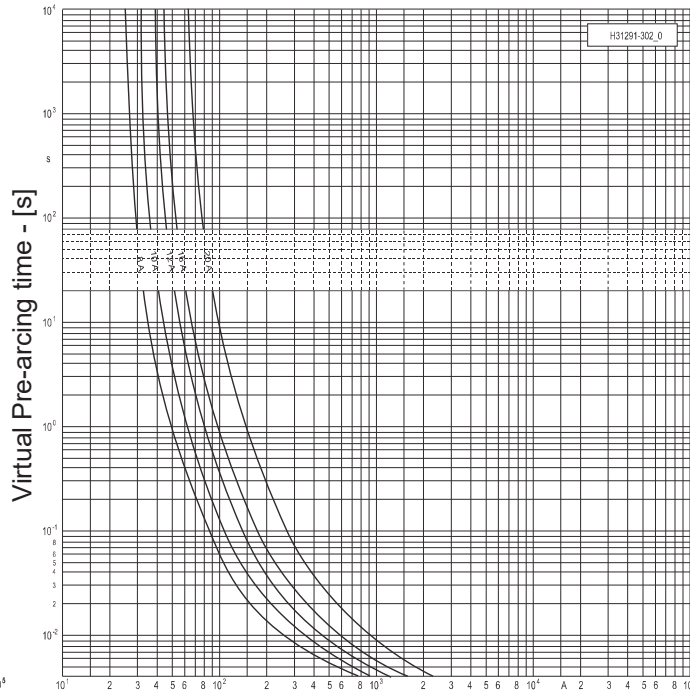
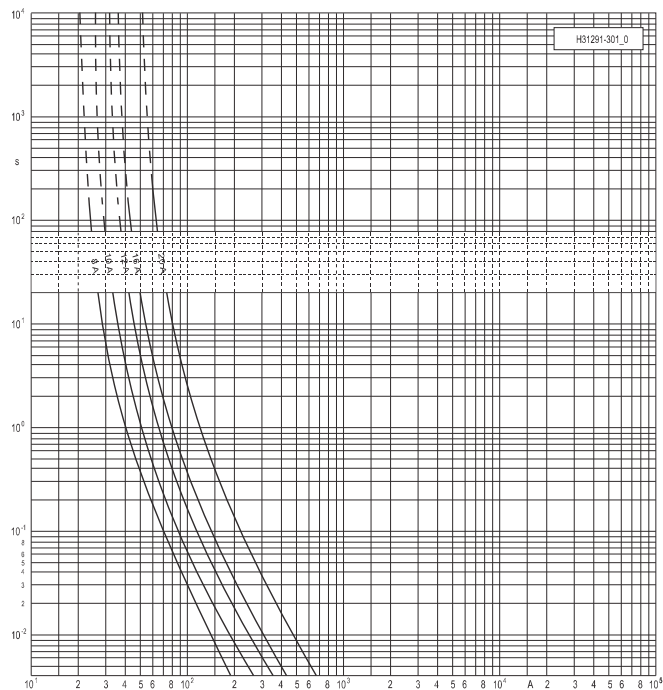
Dimensions [in/mm]		
3031291		3031296
14.17 / 360	L1	14.17 / 360
14.61 / 371	L2	15.08 / 383

Maximum Torque 132lb•in / 15N•m

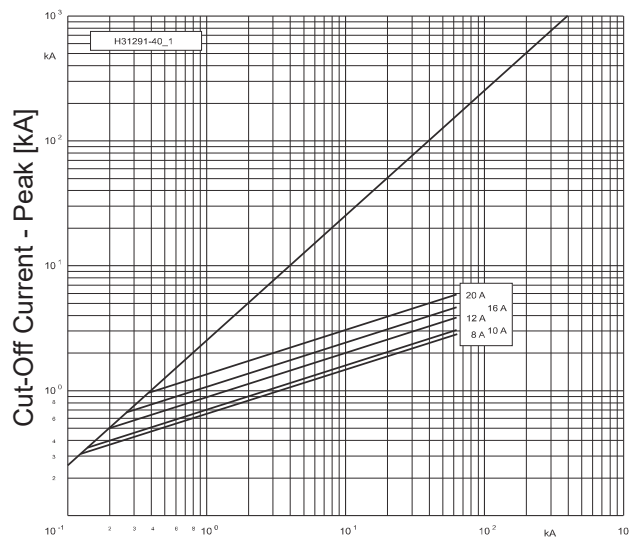


HHOZ-G**Time-Current Characteristics - Minimum Melting and Total Clearing****Cut-Off Current Diagram****Current-Limiting, General-Purpose, 24kV, L1 = 360mm (8A - 20A)**

3031291.8 - 20, 3031296.8 - 20

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

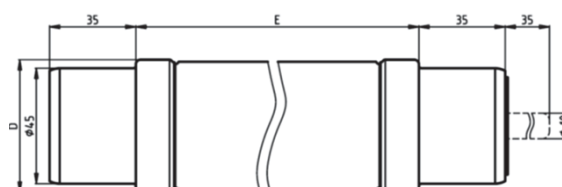
Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.

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HHOD-B**24kV- Rated Voltage[U_n]****High Voltage Current-Limiting Fuses****For Oil Transformer applications****Standard(s)****IEC 60282-1****DIN 43 625****VDE 0670-4****E=442mm****Class
Back-Up**

Rated current I_n [A]	Article Number	Diameter	Weight [kg/l]	Rated breaking current I_1 [kA]	Minimum breaking current I_3 [A]	Pre-arcing I^2t [A ² s]	Total I^2t @ 0.87U _n [A ² s]	Power loss [W]	Cold resistance [mΩ]	
		D [in/mm]								
With 80N Striker and Thermal Limiter/ w/o screen										
16	3032913.16	2.09 / 53	2.2	63	56	250	—	2 000	59	—
With 80N Striker and Thermal Limiter/ w/ screen										
16	3033013.16	2.09 / 53	2.2	63	56	250	—	2 000	59	—
20	3033013.20	2.09 / 53	2.2	63	70	640	—	4 800	46	—
25	3033013.25	2.09 / 53	2.2	63	90	1 050	—	7 500	56	—
31.5	3033013.31.5	2.09 / 53	2.2	63	110	1 700	—	12 000	72	—
40	3033013.40	2.09 / 53	2.2	63	140	2 900	—	19 000	106	—
50	3046513.50	2.64 / 67	2.6	63	170	5 700	—	33 000	108	—
63	3046513.63	2.64 / 67	2.6	63	210	10 700	—	66 000	132	—

**Dimensions [mm]****Accessories**

Article Description	E=537mm			Page(s)
Fuse base, indoor	—	—		—
Fuse base, outdoor	—	—		—
Fuse clips	3100302.20	—		192
Fuse clips w/connecting bar	3400201	—		
Microswitch fittings	660mm - 3100110			189

SIBA LLC

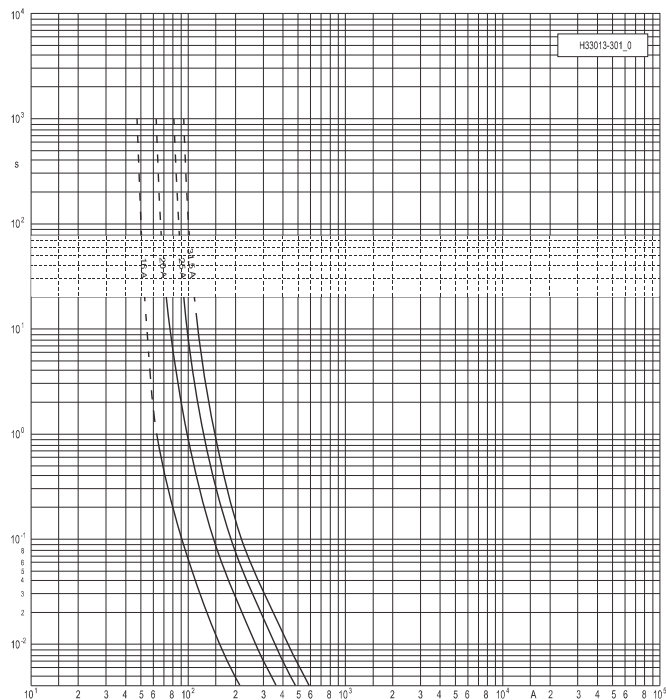
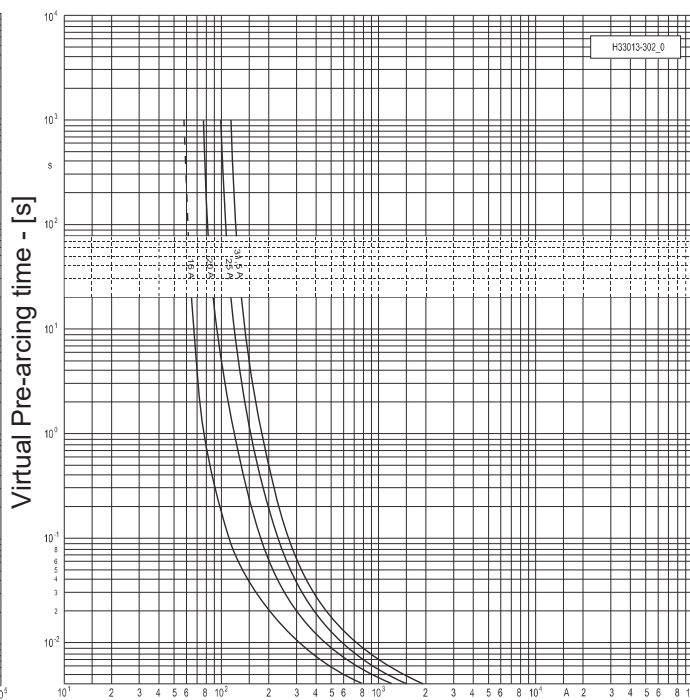
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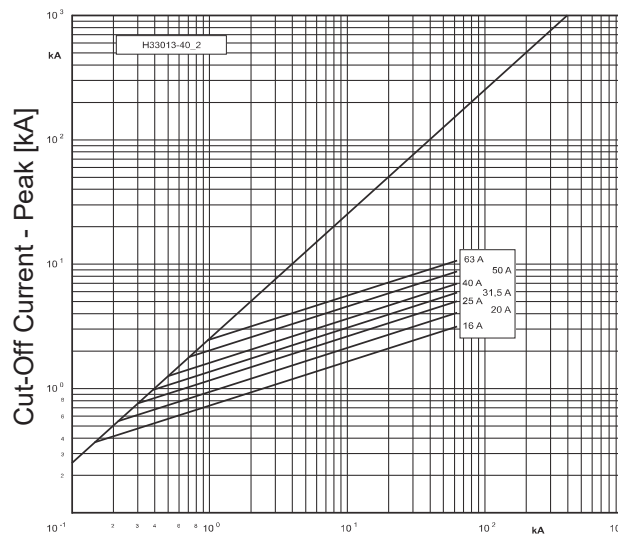
portal: www.siballc.net
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HHOD-B**Time-Current Characteristics - Minimum Melting and Total Clearing****Cut-Off Current Diagram****Current-Limiting, Back-Up, 24kV, E = 442mm (16A - 31.5A)**

3032913.16, 3033013.16 - 40, 3046513.50 - 63

Minimum Melting**Total Clearing**

R.M.S. Prospective Current [A]

Cut-Off Current

Prospective Short Circuit Current [kA] - (Symmetrical r.m.s.)

Full size graphs available upon request.