

# Medium Voltage Fuses

British Standard

For Oil Insulated Switchgears



**Medium-Voltage fuses for installation in oil insulated switchgear according to British Standard**

## ▶ Introduction

Medium voltage fuse-links according to British Standard are back-up fuse-links for the protection of substations up to 24 kV.

The fuse-links of this section comply with the following national and international standards:

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

Design and construction of these fuse-links follow the well-proven concept of all SIBA high voltage fuse-links. For pressure resistant encapsulation, high grade ceramic is used. Contact material consists of silver plated high conductivity copper. The pure silver melting elements have appropriate notches to ensure small time-current curve tolerances and low let-through currents. The arc quenching quartz sand is subject to particular survey criteria regarding its composition, grain size and humidity content.

## ▶ Fuse-links for oil insulated switchgear

These fuse-links comply with the requirements for tightness under oil as well as special mechanical properties for use in oil filled switchgears. The fuse-links are fitted with a striker and are very useful in Fuse/Switch-combinations, which comply with the requirements of IEC 62271 part 105.

For installations of fuse-links in oil filled transformers please refer to section HHO of this catalogue.



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**Selection Guide**

Type [Old BS-Code]	Rated Voltage [AC kV]	Length [mm]	Class	Part No.	Selector Guide [Page]	Technical Data [Page]
FO 1	7.2	254	Back-up / Oiltight	30 132 36	HHB 3	HHB 8
FO 2	7.2	359	Back-up / Oiltight	30 234 36	HHB 3	HHB 8
FO 1	12	254	Back-up / Oiltight	30 144 36	HHB 4	HHB 9
FO 2	12	359	Back-up / Oiltight	30 237 36	HHB 5	HHB 9
FO 1	15.5	254	Back-up / Oiltight	30 293 36	HHB 6	HHB 10
FO 2	15.5	359	Back-up / Oiltight	30 294 36	HHB 6	HHB 10
FO 2	24	359	Back-up / Oiltight	30 156 36	HHB 7	HHB 11



**Medium Voltage Fuses**  
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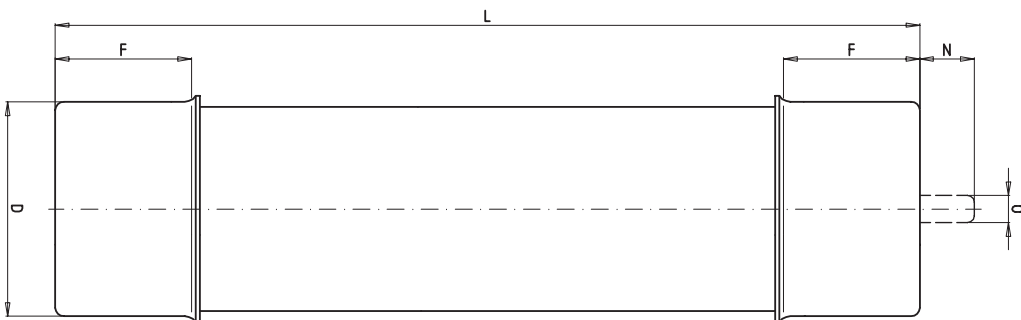
For Oil Insulated Switchgear

Type FO 1      Rated Voltage      Class      Standard  
**L= 254 mm      AC 7.2 kV      Back-up / Oiltight      BS 2692-1 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 132 36.6.3	2.5	63.5	40	1.8	1	HHB 8
10	30 132 36.10	2.5	63.5	40	1.8	1	HHB 8
16	30 132 36.16	2.5	63.5	40	1.8	1	HHB 8
20	30 132 36.20	2.5	63.5	40	1.8	1	HHB 8
25	30 132 36.25	2.5	63.5	40	1.8	1	HHB 8
31.5	30 132 36.31.5	2.5	63.5	40	1.8	1	HHB 8
40	30 132 36.40	2.5	63.5	40	1.8	1	HHB 8
50	30 132 36.50	2.5	63.5	40	1.8	1	HHB 8
63	30 132 36.63	2.5	63.5	40	1.8	1	HHB 8
80	30 132 36.80	2.5	63.5	40	1.8	1	HHB 8
100	30 132 36.100	2.5	63.5	40	1.8	1	HHB 8
112	30 132 36.112	2.5	63.5	40	1.8	1	HHB 8

Type FO 2      Rated Voltage      Class      Standard  
**L= 359 mm      AC 7.2 kV      Back-up / Oiltight      BS 2692-1 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
125 A	30 234 36.125	2.5	63.5	40	2.5	1	HHB 8



<b>F</b>	<b>1.57" (40 mm)</b>
<b>N</b>	<b>0.50" (13 mm)</b>
<b>O</b>	<b>0.30" (8 mm)</b>



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For Oil Insulated Switchgear

Type FO 1

Rated Voltage

Class

Standard

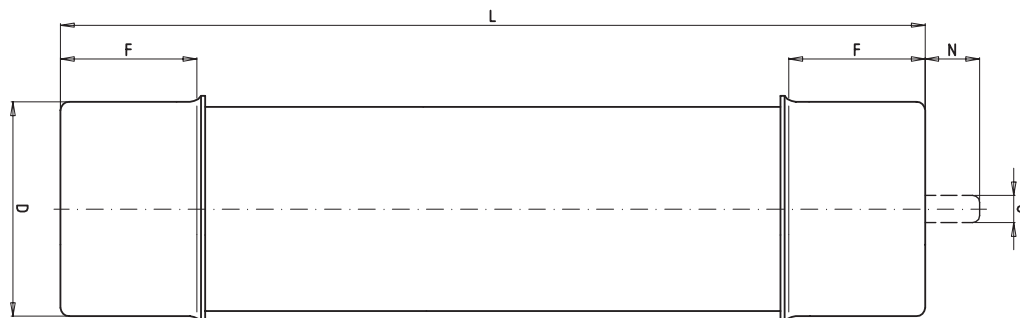
**L= 254 mm**

**AC 12 kV**

**Back-up / Oiltight**

**BS 2692 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 144 36.6.3	2.5	63.5	40	1.8	1	HHB 9
10	30 144 36.10	2.5	63.5	40	1.8	1	HHB 9
16	30 144 36.16	2.5	63.5	40	1.8	1	HHB 9
20	30 144 36.20	2.5	63.5	40	1.8	1	HHB 9
25	30 144 36.25	2.5	63.5	40	1.8	1	HHB 9
31.5	30 144 36.31.5	2.5	63.5	40	1.8	1	HHB 9
40	30 144 36.40	2.5	63.5	40	1.8	1	HHB 9
50	30 144 36.50	2.5	63.5	40	1.8	1	HHB 9
63	30 144 36.63	2.5	63.5	40	1.8	1	HHB 9
80	30 144 36.80	2.5	63.5	40	1.8	1	HHB 9



<b>F</b>	<b>1.57" (40 mm)</b>
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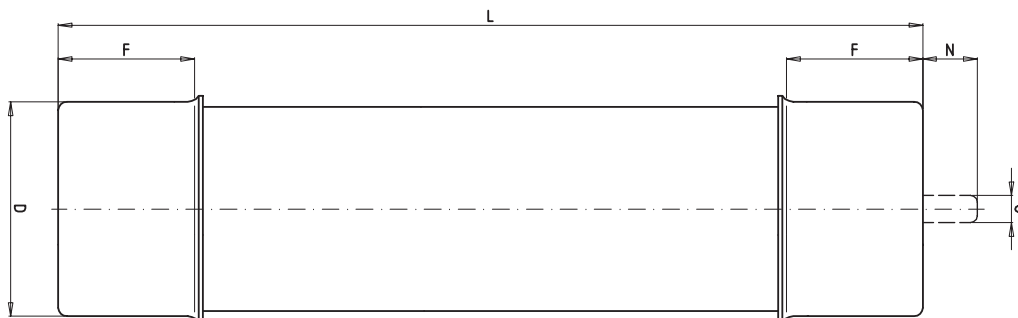


**Medium Voltage Fuses**  
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Type FO 2      Rated Voltage      Class      Standard  
**L= 359 mm**      **AC 12 kV**      **Back-up / Oiltight**      **BS 2692 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 237 36.6.3	2.5	63.5	40	2.5	1	HHB 9
10	30 237 36.10	2.5	63.5	40	2.5	1	HHB 9
16	30 237 36.16	2.5	63.5	40	2.5	1	HHB 9
20	30 237 36.20	2.5	63.5	40	2.5	1	HHB 9
25	30 237 36.25	2.5	63.5	40	2.5	1	HHB 9
31.5	30 237 36.31.5	2.5	63.5	40	2.5	1	HHB 9
40	30 237 36.40	2.5	63.5	40	2.5	1	HHB 9
50	30 237 36.50	2.5	63.5	40	2.5	1	HHB 9
63	30 237 36.63	2.5	63.5	40	2.5	1	HHB 9
80	30 237 36.80	2.5	63.5	40	2.5	1	HHB 9
100	30 237 36.100	2.5	63.5	40	2.5	1	HHB 9
125	30 237 36.125	2.5	63.5	40	2.5	1	HHB 9



<b>F</b>	<b>1.57" (40 mm)</b>
<b>N</b>	<b>0.50" (13 mm)</b>
<b>O</b>	<b>0.30" (8 mm)</b>



## Medium Voltage Fuses

British Standard

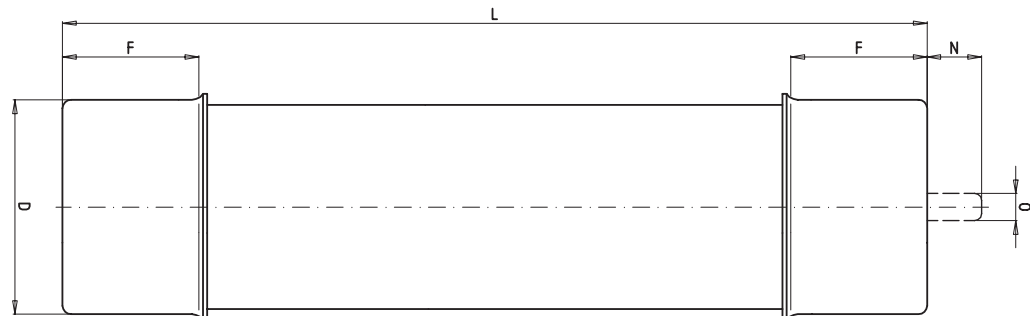
For Oil Insulated Switchgear

Type FO 1      Rated Voltage      Class      Standard  
**L= 254 mm      AC 15.5 kV      Back-up / Oiltight      BS 2692 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 293 36.6.3	2.5	63.5	40	1.8	1	HHB 10
10	30 293 36.10	2.5	63.5	40	1.8	1	HHB 10
16	30 293 36.16	2.5	63.5	40	1.8	1	HHB 10
20	30 293 36.20	2.5	63.5	40	1.8	1	HHB 10
25	30 293 36.25	2.5	63.5	40	1.8	1	HHB 10
31.5	30 293 36.31.5	2.5	63.5	40	1.8	1	HHB 10
40	30 293 36.40	2.5	63.5	40	1.8	1	HHB 10
50	30 293 36.50	2.5	63.5	40	1.8	1	HHB 10
63	30 293 36.63	2.5	63.5	40	1.8	1	HHB 10

Type FO 2      Rated Voltage      Class      Standard  
**L= 359 mm      AC 15.5 kV      Back-up / Oiltight      BS 2692 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 294 36.6.3	2.5	63.5	40	2.5	1	HHB 10
10	30 294 36.10	2.5	63.5	40	2.5	1	HHB 10
16	30 294 36.16	2.5	63.5	40	2.5	1	HHB 10
20	30 294 36.20	2.5	63.5	40	2.5	1	HHB 10
25	30 294 36.25	2.5	63.5	40	2.5	1	HHB 10
31.5	30 294 36.31.5	2.5	63.5	40	2.5	1	HHB 10
40	30 294 36.40	2.5	63.5	40	2.5	1	HHB 10
50	30 294 36.50	2.5	63.5	40	2.5	1	HHB 10
63	30 294 36.63	2.5	63.5	40	2.5	1	HHB 10
80	30 294 36.80	2.5	63.5	40	2.5	1	HHB 10
90	30 294 36.90	2.5	63.5	40	2.5	1	HHB 10



- F** 1.57" (40 mm)
- N** 0.50" (13 mm)
- O** 0.30" (8 mm)

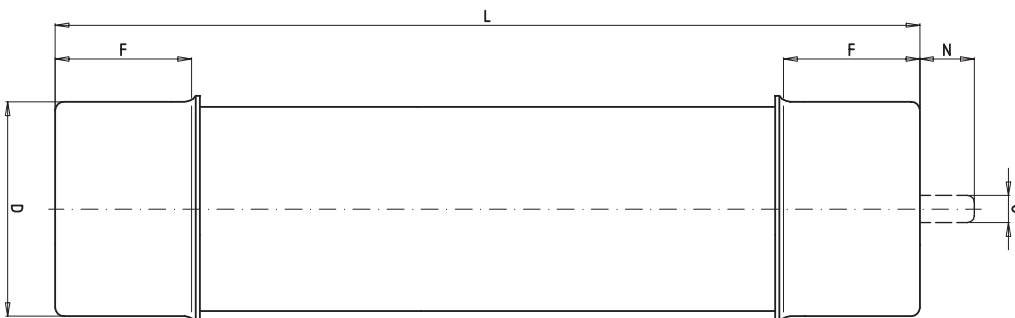


**Medium Voltage Fuses**  
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For Oil Insulated Switchgear

Type FO 2      Rated Voltage      Class      Standard  
**L= 359 mm**      **AC 24 kV**      **Back-up / Oiltight**      **BS 2692 · IEC 60282-1 · ESI 12-8**

Rated Current [A]	Part No.	D= Diameter		Rated Breaking Current [kA]	Weight [kg/1]	Pack	Technical Data [Page]
		[inch]	[mm]				
6.3	30 156 36.6.3	2.5	63.5	40	2.5	1	HHB 11
10	30 156 36.10	2.5	63.5	40	2.5	1	HHB 11
16	30 156 36.16	2.5	63.5	40	2.5	1	HHB 11
20	30 156 36.20	2.5	63.5	40	2.5	1	HHB 11
25	30 156 36.25	2.5	63.5	40	2.5	1	HHB 11
31.5	30 156 36.31.5	2.5	63.5	40	2.5	1	HHB 11
40	30 156 36.40	2.5	63.5	40	2.5	1	HHB 11
50	30 156 36.50	2.5	63.5	40	2.5	1	HHB 11



<b>F</b>	<b>1.57" (40 mm)</b>
<b>N</b>	<b>0.50" (13 mm)</b>
<b>O</b>	<b>0.30" (8 mm)</b>

Length  
**L= 254 mm**

Rated Voltage  
**AC 7.2 kV**

**Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 3 kV [A <sup>2</sup> s]	@ 7.2 kV [A <sup>2</sup> s]
6.3	30 132 36.6.3	40	14	80	140
10	30 132 36.10	40	50	270	450
16	30 132 36.16	40	190	1 070	1 800
20	30 132 36.20	40	290	1 680	2 900
25	30 132 36.25	40	600	3 670	6 100
31.5	30 132 36.31.5	40	1 000	6 000	10 000
40	30 132 36.40	40	2 300	13 400	22 300
50	30 132 36.50	40	2 800	21 600	36 000
63	30 132 36.63	40	6 500	38 200	65 500
80	30 132 36.80	40	9 900	56 500	100 000
90	30 132 36.90	40	15 500	91 400	157 000
100	30 132 36.100	40	22 200	127 200	218 500
112	30 132 36.112	40	28 300	166 700	278 000

Length  
**L= 359 mm**

Rated voltage  
**AC 7.2 kV**

**Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 3 kV [A <sup>2</sup> s]	@ 7.2 kV [A <sup>2</sup> s]
125	30 234 36.125	40	37 100	218 500	364 200

**Time-current characteristics and cut-off current diagram  
please refer to pages HHB 12 and HHB 13**



Length **L= 254 mm**      Rated Voltage **AC 12 kV**      **Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 6 kV [A <sup>2</sup> s]	@ 12 kV [A <sup>2</sup> s]
6.3	30 144 36.6.3	40	14	80	140
10	30 144 36.10	40	50	270	450
16	30 144 36.16	40	190	1 070	1 800
20	30 144 36.20	40	290	1 680	2 900
25	30 144 36.25	40	600	3 670	6 100
31.5	30 144 36.31.5	40	1 000	6 000	10 000
40	30 144 36.40	40	2 300	13 400	22 300
50	30 144 36.50	40	2 800	21 600	36 000
63	30 144 36.63	40	6 500	38 200	65 500
80	30 144 36.80	40	9 900	56 500	100 000

Length **L= 359 mm**      Rated Voltage **AC 12 kV**      **Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 6 kV [A <sup>2</sup> s]	@ 12 kV [A <sup>2</sup> s]
6.3	30 237 36.6.3	40	14	80	140
10	30 237 36.10	40	50	270	450
16	30 237 36.16	40	190	1 070	1 800
20	30 237 36.20	40	290	1 680	2 900
25	30 237 36.25	40	600	3 670	6 100
31.5	30 237 36.31.5	40	1 000	6 000	10 000
40	30 237 36.40	40	2 300	13 400	22 300
50	30 237 36.50	40	2 800	21 600	36 000
63	30 237 36.63	40	6 500	38 200	65 500
80	30 237 36.80	40	9 900	56 500	100 000
100	30 237 36.100	40	22 200	127 200	218 500
125	30 237 36.125	40	37 100	218 500	364 200

**Time-current characteristics and cut-off current diagram please refer to pages HHB 12 and HHB 13**

Length  
**L= 254 mm**

Rated Voltage  
**AC 15.5 kV**

**Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 10 kV [A <sup>2</sup> s]	@ 15.5 kV [A <sup>2</sup> s]
6.3	30 293 36.6.3	40	14	80	140
10	30 293 36.10	40	50	270	450
16	30 293 36.16	40	190	1 070	1 800
20	30 293 36.20	40	290	1 680	2 900
25	30 293 36.25	40	600	3 670	6 100
31.5	30 293 36.31.5	40	1 000	6 000	10 000
40	30 293 36.40	40	2 300	13 400	22 300
50	30 293 36.50	40	2 800	21 600	36 000
63	30 293 36.63	40	6 500	38 200	65 500

Length  
**L= 359 mm**

Rated Voltage  
**AC 15.5 kV**

**Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 10 kV [A <sup>2</sup> s]	@ 15.5 kV [A <sup>2</sup> s]
6.3	30 294 36.6.3	40	14	80	140
10	30 294 36.10	40	50	270	450
16	30 294 36.16	40	190	1 070	1 800
20	30 294 36.20	40	290	1 680	2 900
25	30 294 36.25	40	600	3 670	6 100
31.5	30 294 36.31.5	40	1 000	6 000	10 000
40	30 294 36.40	40	2 300	13 400	22 300
50	30 294 36.50	40	2 800	21 600	36 000
63	30 294 36.63	40	6 500	38 200	65 500
80	30 294 36.80	40	9 900	56 500	100 000

**Time-current characteristics and cut-off current diagram  
please refer to pages HHB 12 and HHB 13**

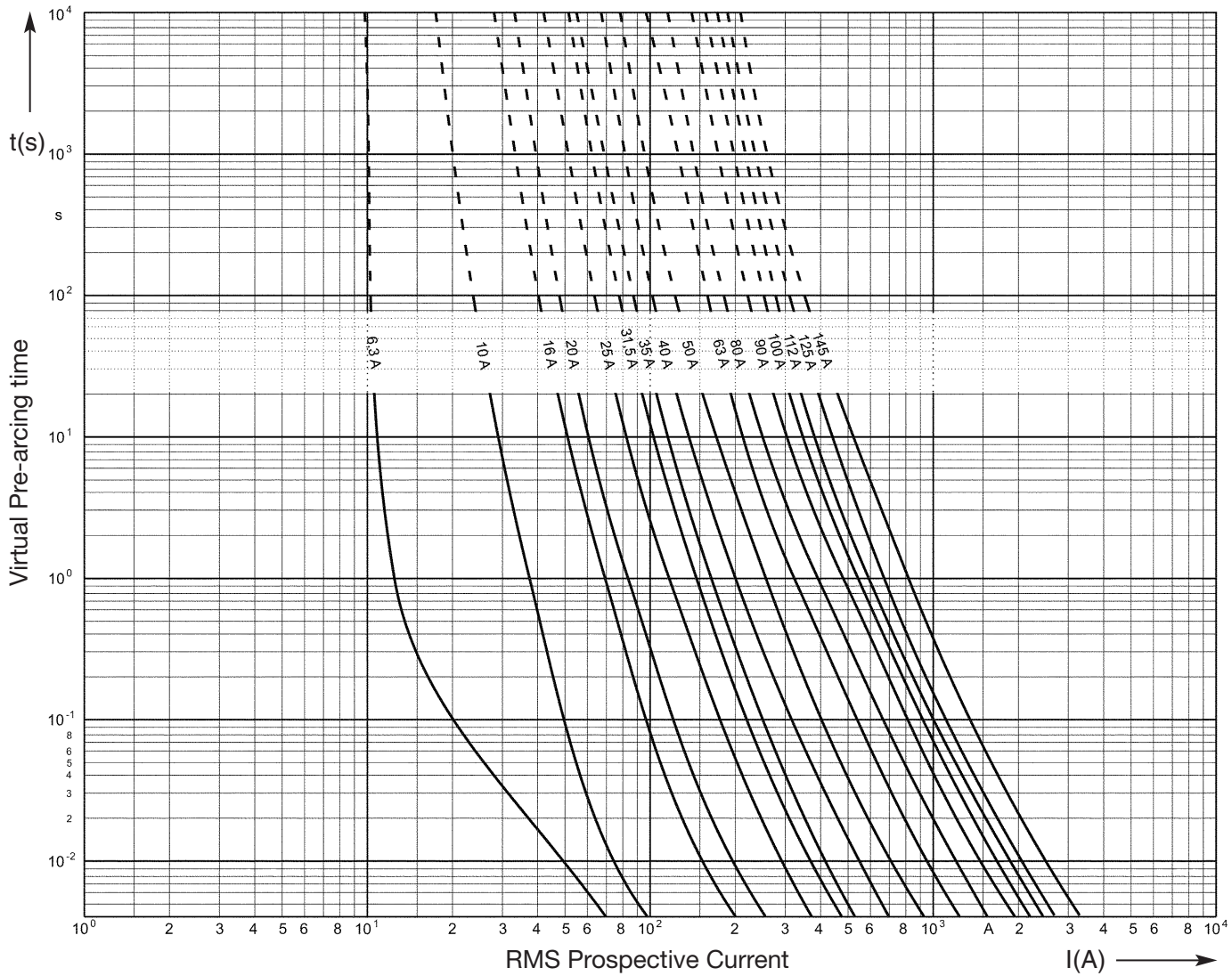
Length **L= 359 mm**      Rated Voltage **AC 24 kV**      **Use under Oil / Oiltight**

Rated Current [A]	Part No.	Rated Breaking Current [kA]	Pre-arcing I <sup>2</sup> t-value [A <sup>2</sup> s]	Total I <sup>2</sup> t-value	
				@ 10 kV [A <sup>2</sup> s]	@ 24 kV [A <sup>2</sup> s]
6.3	30 156 36.6.3	40	14	80	140
10	30 156 36.10	40	50	270	450
16	30 156 36.16	40	190	1 070	1 800
20	30 156 36.20	40	290	1 680	2 900
25	30 156 36.25	40	600	3 670	6 100
31.5	30 156 36.31.5	40	1 000	6 000	10 000
40	30 156 36.40	40	2 300	13 400	22 300
50	30 156 36.50	40	2 800	21 600	36 000

**Time-current characteristics and cut-off current diagram please refer to pages HHB 12 and HHB 13**

**Time-Current Characteristics**

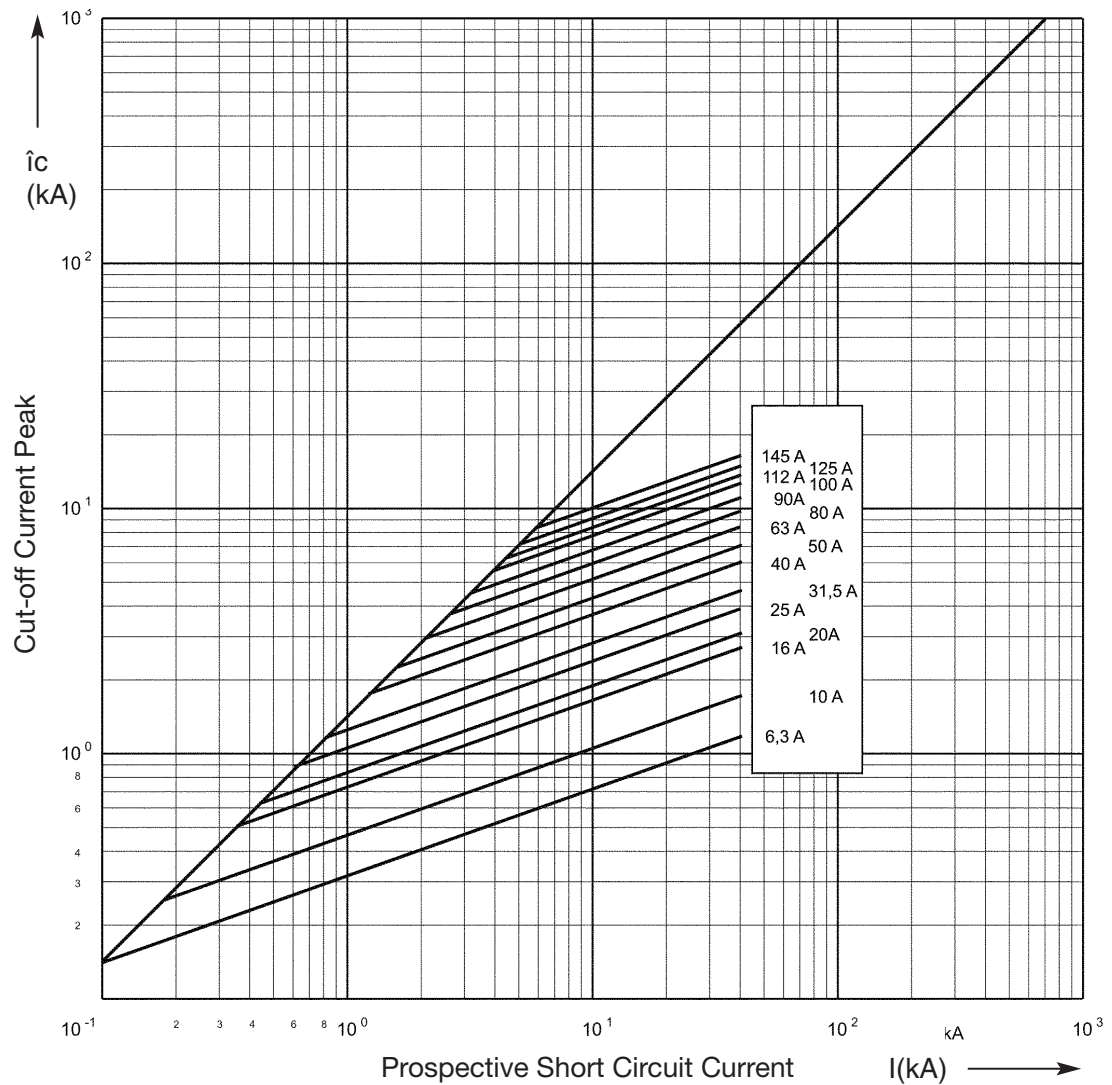
**Use under Oil**



**Applicable for all fuse-links  
shown on pages HHB 3 - HHB 7**

**Cut-Off Current Diagram**

**Use under Oil**



**Applicable for all fuse-links  
shown on pages HHB 3 - HHB 7**

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