

# HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS



The striker pin system is connected by means of a high resistance parallel conductor. After melting the main fuse elements the striker pin will indicate the operation status of the fuse and open a load break switch or actuate a microswitch for remote indication.

## The temperature limiting function of the fuse striker pin

SIBA HV Fuse-links up to and including 160 A with a striker pin of 80 N are equipped with an integrated temperature limiter as standard. The temperature limiter is fitted inside the striker pin system. The SIBA striker pin system therefore has the following functions:

- thermal protection of adjacent equipment, especially SF6 Insulated switchgear
- limitation of failure current at the overload region
- improved properties for the switch-fuse combinations according IEC 60420

The integrated temperature limiter avoids inadmissible high temperatures – no matter for whatever reason they are generated – in gas-insulated switchgear or narrow switchgear enclosures. By means of a melting activator temperatures inside the fuse link enclosure are limited to below approx. 100°C. This design especially considers continuity of current supply for the end user for as long as possible. The system reacts in such a way that short time overloads do not cause the fuse to interrupt the circuit unnecessarily. Only when inadmissible values are exceeded the fuse will open the switch via the striker pin.

Higher temperatures on plastic fuse enclosures in SF6-insulated switchgear can be caused by:

- selection of a fuse rating too low for transformer protection
- fuses are loaded with fault currents below the minimum operating current
- deterioration of fuse links caused by transient fault currents (e.g. lightning strike)
- transformer faults currents (e.g. winding short-current)
- overloading of the fuse when loaded with currents as described in IEC 420 Test Duty 3
- additional temperatures rise because of poor clip fitting

Fuse-links with integrated temperature limiter are compatible with standard Fuse links. All coordination schedules can be used.

Further information on our temperature limiter, design, construction, can be obtained from our website.

## Design and construction

SIBA HV Fuse-links have parallel connected pure silver fuse-elements. The design and method of production of the elements ensures narrow tolerances of time-current-characteristics.

The fuse elements are wound on a ceramic support and are attached to the silver plated connection caps by means of spot-welding. The connection caps are fitted inside the silver plated copper end caps by spot welding. The copper end caps themselves are press-fitted onto the porcelain tube which is glazed inside and outside. The end caps are furthermore mechanically fixed to the porcelain tube and additionally sealed by a durable elastic sealing medium. This sealing method has been proven over many decades of positive field experience and ensures tightness against ingress of humidity.

## Striker pin

SIBA HV Fuse-links are available with striker pins of the force:

- 80 N (Part No. 30 ... 13 for basic-type) and
- 120 N (Part No. 30 ... 14 for variant-type)

The characteristics of both striker pins corresponds to IEC 60282-1, VDE 0670 Part 4 and are of the energy-category "medium".



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### Selection Guide

Rated Voltage AC kV	DIN Size E mm	Class	Part No.	Selection Guide Page	Techn. Data Page
3/7.2	192	Back up	30 002 13	HHD 5	HHD 23
3/7.2	192	Back up	30 010 13	HHD 5	HHD 23
3/7.2	192	Back up	30 018 13	HHD 5	HHD 23
3/7.2	192	Back up	30 018 14	HHD 5	HHD 23
3/7.2	292	Back up	30 098 13	HHD 6	HHD 23
3/7.2	292	Back up	30 099 13	HHD 6	HHD 23
3/7.2	292	Back up	30 100 13	HHD 6	HHD 23
3/7.2	292	Back up	30 100 14	HHD 6	HHD 23
3/7.2	442	Back up	30 109 13	HHD 7	HHD 24
3/7.2	442	Back up	30 110 13	HHD 7	HHD 24
3/7.2	442	Back up	30 110 14	HHD 7	HHD 24
6/12	192	Back up	30 119 13	HHD 8	HHD 25
6/12	192	Back up	30 267 13	HHD 8	HHD 25
6/12	292	Back up	30 004 13	HHD 9	HHD 25
6/12	292	Back up	30 012 13	HHD 9	HHD 25
6/12	292	Back up	30 020 13	HHD 9	HHD 25
6/12	292	Back up	30 020 14	HHD 9	HHD 25
6/12	442	Back up	30 101 13	HHD 10	HHD 26
6/12	442	Back up	30 102 13	HHD 10	HHD 26
6/12	442	Back up	30 103 13	HHD 10	HHD 26
6/12	442	Back up	30 103 14	HHD 10	HHD 26
6/12	537	Back up	30 211 13	HHD 11	HHD 26
6/12	537	Back up	30 211 14	HHD 11	HHD 26
10/17.5	292	Back up	30 255 13	HHD 12	HHD 27
10/17.5	292	Back up	30 221 13	HHD 12	HHD 27
10/17.5	292	Back up	30 222 13	HHD 12	HHD 27
10/17.5	367	Back up	30 176 13	HHD 13	HHD 27
10/17.5	367	Back up	30 177 13	HHD 13	HHD 27
10/17.5	367	Back up	30 178 13	HHD 13	HHD 27
10/17.5	367	Back up	30 178 14	HHD 13	HHD 27
10/17.5	442	Back up	30 231 13	HHD 14	HHD 28
10/17.5	442	Back up	30 232 13	HHD 14	HHD 28
10/17.5	442	Back up	30 233 13	HHD 14	HHD 28



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Rated Voltage AC kV	DIN Size E mm	Class	Part No.	Selection Guide Page	Techn. Data Page
10/24	292	Back up	30 180 13	HHD 15	HHD 29
10/24	292	Back up	30 225 13	HHD 15	HHD 29
10/24	442	Back up	30 006 13	HHD 16	HHD 29
10/24	442	Back up	30 014 13	HHD 16	HHD 29
10/24	442	Back up	30 022 13	HHD 16	HHD 29
10/24	537	Back up	30 203 13	HHD 17	HHD 30
10/24	537	Back up	30 204 13	HHD 17	HHD 30
10/24	537	Back up	30 196 13	HHD 17	HHD 30
10/24	537	Back up	30 196 14	HHD 17	HHD 30
20/36	442	Back up	30 181 13	HHD 18	HHD 31
20/36	537	Back up	30 008 13	HHD 19	HHD 31
20/36	537	Back up	30 016 13	HHD 19	HHD 31
20/36	537	Back up	30 024 13	HHD 19	HHD 31
6/12	292	General purpose	30 004 93	HHD 21	HHD 32
6/12	292	General purpose	30 012 93	HHD 21	HHD 32
6/12	292	General purpose	30 020 93	HHD 21	HHD 32
10/24	442	General purpose	30 006 93	HHD 22	HHD 32
10/24	442	General purpose	30 014 93	HHD 22	HHD 32
10/24	442	General purpose	30 022 93	HHD 22	HHD 32

**Selection Guide**

**Fuse-bases**

Article	Rated Voltage AC kV	DIN-Size E mm	Part No.	Techn. Data Page
Indoor Fuse-bases	7.2	192	31 001 02	HHD 40
	12	292	31 003 02	HHD 40
	24	442	31 005 02	HHD 40
	36	537	31 007 02	HHD 40
Outdoor Fuse-bases	24	292	31 221 01	HHD 40
	7.2	192	31 002 01	HHD 41
	12	292	31 004 01	HHD 41
	24	292	31 006 01	HHD 41
	36	537	31 008 01	HHD 41



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**Selection Guide**

**Microswitch fitting consists of**

Article	Length mm	Part No.	Techn. Data Page
Microswitch	660	31 001 10	HHD 42
	900	31 001 14	HHD 42
Fuse Clip		34 002 01	HHD 43
Distance Plate		31 002 01.3	HHD 43

**Selection Guide**

**Accessories**

Article	Rated Voltage kV	Part No.	Techn. Data Page
Extension Adapter	12/24	34 006 01	HHD 44
Test Fuse-link for gas insulated switchgear	24	33 010 03	HHD 45
Contact Clip 200 A indoor and outdoor		31 003 02.20	HHD 46
Contact Clip heavy duty		34 001 01.20	HHD 46
Storage Holder	12	33 004 01	HHD 47
	24	33 006 01	HHD 47
	36	33 008 01	HHD 47



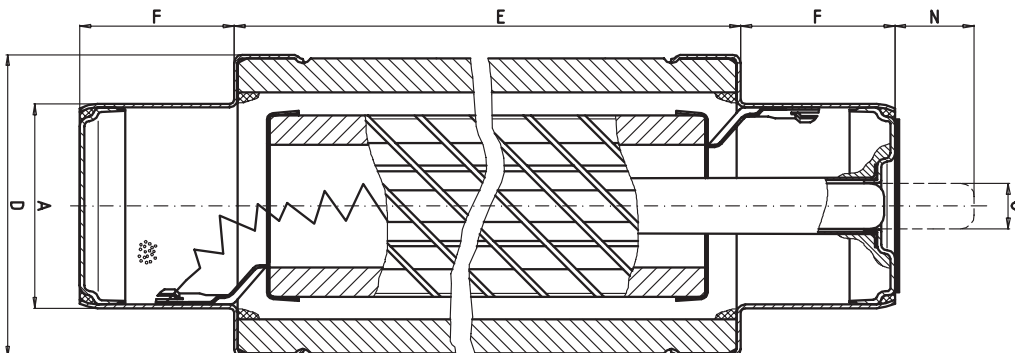
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<b>DIN Size</b> <b>E=192 mm</b>	<b>Rated voltage</b> <b>AC 3/7.2 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 002 13	2.10	53	63	1.2	1
10 A	30 002 13	2.10	53	63	1.2	1
16 A	30 002 13	2.10	53	63	1.2	1
20 A	30 002 13	2.10	53	63	1.2	1
25 A	30 002 13	2.10	53	63	1.2	1
31.5 A	30 002 13	2.10	53	63	1.2	1
40 A	30 002 13	2.10	53	63	1.2	1
50 A	30 002 13	2.10	53	63	1.2	1
63 A	30 010 13	2.64	67	63	1.5	1
80 A	30 010 13	2.64	67	63	1.5	1
100 A	30 010 13	2.64	67	63	1.5	1
125 A	30 010 13	2.64	67	63	1.5	1
160 A	30 018 13	3.35	85	63	2.9	1
200 A	30 018 14	3.35	85	50	2.9	1
250 A	30 018 14	3.35	85	50	2.9	1

**Preferred Standard size 3/7.2 kV**



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



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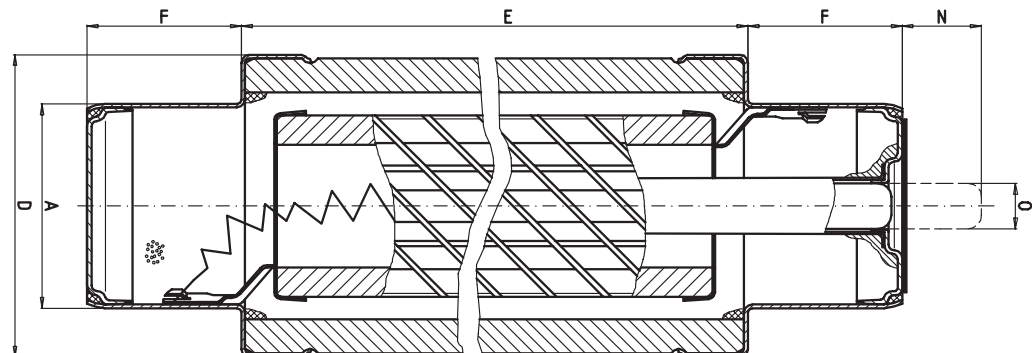
DIN Size  
**E= 292 mm**

Rated voltage  
**AC 3/7.2 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 098 13	2.10	53	63	1.6	1
10 A	30 098 13	2.10	53	63	1.6	1
16 A	30 098 13	2.10	53	63	1.6	1
20 A	30 098 13	2.10	53	63	1.6	1
25 A	30 098 13	2.10	53	63	1.6	1
31.5 A	30 098 13	2.10	53	63	1.6	1
40 A	30 098 13	2.10	53	63	1.6	1
50 A	30 098 13	2.10	53	63	1.6	1
63 A	30 099 13	2.64	67	63	2.0	1
80 A	30 099 13	2.64	67	63	2.0	1
100 A	30 099 13	2.64	67	63	2.0	1
125 A	30 099 13	2.64	67	63	2.0	1
160 A	30 100 13	3.35	85	50	3.8	1
200 A	30 100 14	3.35	85	50	3.8	1
250 A	30 100 14	3.35	85	50	3.8	1
315 A	30 100 14	3.35	85	50	3.8	1
355 A	30 100 14	3.35	85	50	3.8	1



<b>A</b>	<b>1.77"</b> (45 mm)
<b>F</b>	<b>1.30"</b> (33 mm)
<b>O</b>	<b>0.40"</b> (10 mm)
<b>N</b>	<b>1.38"</b> (35 mm)

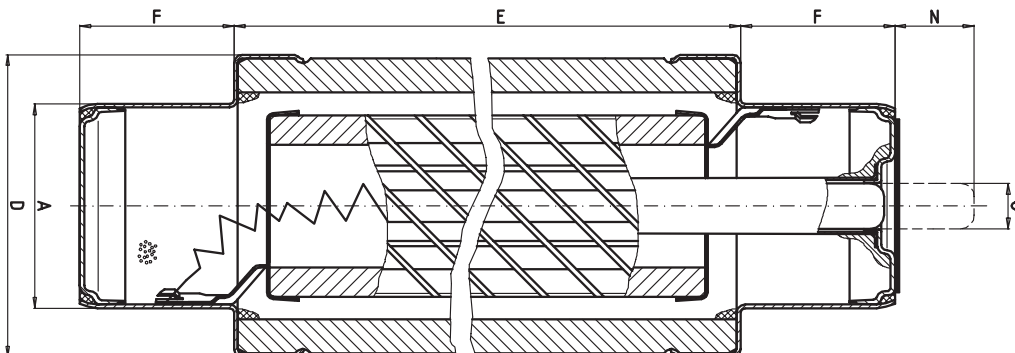


**HIGH VOLTAGE FUSES**  
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<b>DIN Size</b> <b>E= 442 mm</b>	<b>Rated voltage</b> <b>AC 3/7.2 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
100 A	30 109 13	2.64	67	63	2.9	1
125 A	30 109 13	2.64	67	63	2.9	1
160 A	30 110 13	3.35	85	63	5.4	1
200 A	30 110 14	3.35	85	50	5.4	1
250 A	30 110 14	3.35	85	50	5.4	1
315 A	30 110 14	3.35	85	50	5.4	1
355 A	30 110 14	3.35	85	50	5.4	1
400 A	30 110 14	3.35	85	50	5.4	1
500 A	30 110 14	3.35	85	50	5.4	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



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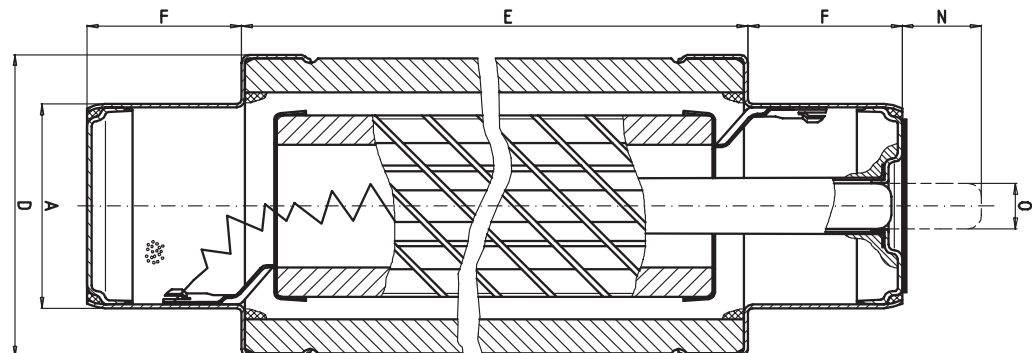
DIN Size  
**E= 192 mm**

Rated voltage  
**AC 6/12 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 119 13	2.10	53	63	1.2	1
10 A	30 119 13	2.10	53	63	1.2	1
16 A	30 119 13	2.10	53	63	1.2	1
20 A	30 267 13	2.64	67	63	1.5	1
25 A	30 267 13	2.64	67	63	1.5	1
31.5 A	30 267 13	2.64	67	63	1.5	1
40 A	30 267 13	2.64	67	63	1.5	1
50 A	30 267 13	2.64	67	63	1.5	1
63 A	30 267 13	2.64	67	63	1.5	1



- A** 1.77" (45 mm)
- F** 1.30" (33 mm)
- O** 0.40" (10 mm)
- N** 1.38" (35 mm)





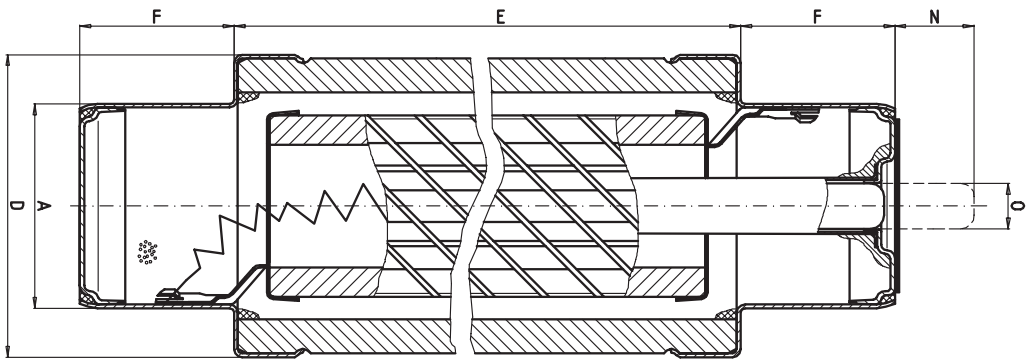
**HIGH VOLTAGE FUSES**  
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<b>DIN Size</b> <b>E= 292 mm</b>	<b>Rated voltage</b> <b>AC 6/12 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 004 13	2.10	53	63	1.6	1
10 A	30 004 13	2.10	53	63	1.6	1
16 A	30 004 13	2.10	53	63	1.6	1
20 A	30 004 13	2.10	53	63	1.6	1
25 A	30 004 13	2.10	53	63	1.6	1
31.5 A	30 004 13	2.10	53	63	1.6	1
40 A	30 004 13	2.10	53	63	1.6	1
50 A	30 004 13	2.10	53	63	1.6	1
63 A	30 012 13	2.64	67	63	2.0	1
80 A	30 012 13	2.64	67	63	2.0	1
100 A	30 012 13	2.64	67	63	2.0	1
125 A	30 012 13	2.64	67	63	2.0	1
160 A	30 020 13	3.35	85	63	3.8	1
200 A	30 020 14	3.35	85	50	3.8	1

**Preferred Standard size 6/12 kV**



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



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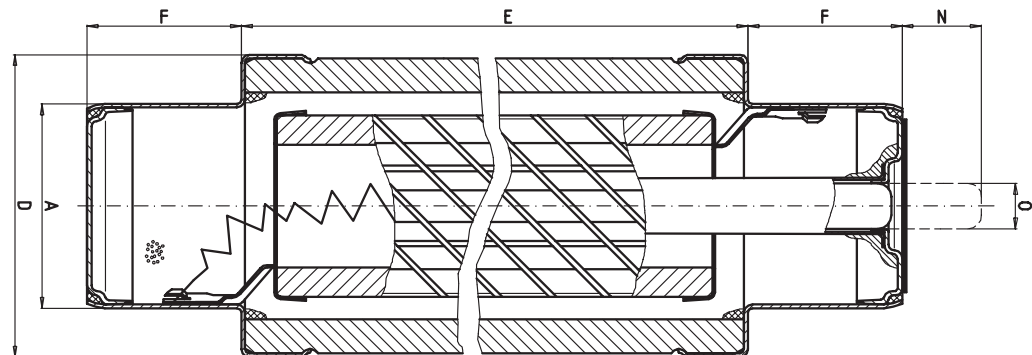
DIN Size  
**E= 442 mm**

Rated voltage  
**AC 6/12 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 101 13	2.10	53	63	2.2	1
10 A	30 101 13	2.10	53	63	2.2	1
16 A	30 101 13	2.10	53	63	2.2	1
20 A	30 101 13	2.10	53	63	2.2	1
25 A	30 101 13	2.10	53	63	2.2	1
31.5 A	30 101 13	2.10	53	63	2.2	1
40 A	30 101 13	2.10	53	63	2.2	1
50 A	30 101 13	2.10	53	63	2.2	1
63 A	30 102 13	2.64	67	63	2.9	1
80 A	30 102 13	2.64	67	63	2.9	1
100 A	30 102 13	2.64	67	63	2.9	1
125 A	30 102 13	2.64	67	63	2.9	1
160 A	30 103 13	3.35	85	63	5.4	1
200 A	30 103 14	3.35	85	50	5.4	1
250 A	30 103 14	3.35	85	50	5.4	1



- A** 1.77" (45 mm)
- F** 1.30" (33 mm)
- O** 0.40" (10 mm)
- N** 1.38" (35 mm)

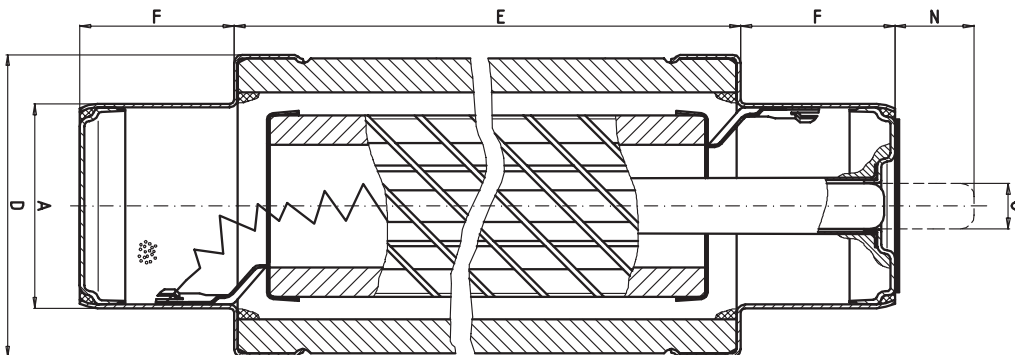


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<b>DIN Size</b> <b>E= 537 mm</b>	<b>Rated voltage</b> <b>AC 6/12 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
100 A	30 211 13	3.35	85	63	6.8	1
125 A	30 211 13	3.35	85	63	6.8	1
160 A	30 211 13	3.35	85	63	6.8	1
200 A	30 211 14	3.35	85	50	6.8	1
250 A	30 211 14	3.35	85	50	6.8	1
315 A	30 211 14	3.35	85	50	6.8	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



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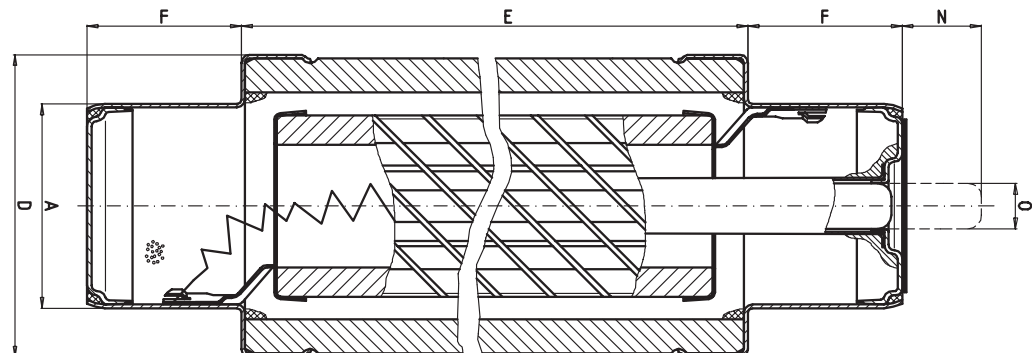
DIN Size  
**E= 292 mm**

Rated voltage  
**AC 10/17.5 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 255 13	2.10	53	63	1.6	1
10 A	30 255 13	2.10	53	63	1.6	1
16 A	30 255 13	2.10	53	63	1.6	1
20 A	30 221 13	2.64	67	63	2.0	1
25 A	30 221 13	2.64	67	63	2.0	1
31.5 A	30 221 13	2.64	67	63	2.0	1
40 A	30 221 13	2.64	67	63	2.0	1
50 A	30 221 13	2.64	67	63	2.0	1
63 A	30 221 13	2.64	67	63	2.0	1
80 A	30 222 13	3.35	85	63	3.8	1
100 A	30 222 13	3.35	85	63	3.8	1
125 A	30 222 13	3.35	85	63	3.8	1
160 A	30 222 13	3.35	85	63	3.8	1



- A** 1.77" (45 mm)
- F** 1.30" (33 mm)
- O** 0.40" (10 mm)
- N** 1.38" (35 mm)

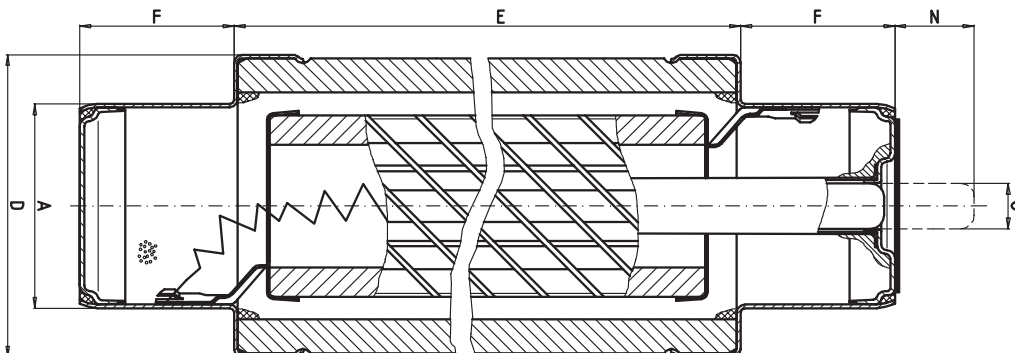


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<b>DIN Size</b> <b>E= 367 mm</b>	<b>Rated voltage</b> <b>AC 10/17.5 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 176 13	2.10	53	63	2.0	1
10 A	30 176 13	2.10	53	63	2.0	1
16 A	30 176 13	2.10	53	63	2.0	1
20 A	30 176 13	2.10	53	63	2.0	1
25 A	30 176 13	2.10	53	63	2.0	1
31.5 A	30 177 13	2.64	67	63	3.0	1
40 A	30 177 13	2.64	67	63	3.0	1
50 A	30 177 13	2.64	67	63	3.0	1
63 A	30 177 13	2.64	67	63	3.0	1
80 A	30 178 13	3.35	85	63	4.8	1
100 A	30 178 13	3.35	85	63	4.8	1
125 A	30 178 13	3.35	85	63	4.8	1
160 A	30 178 13	3.35	85	63	4.8	1
200 A	30 178 14	3.35	85	40	4.8	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



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FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

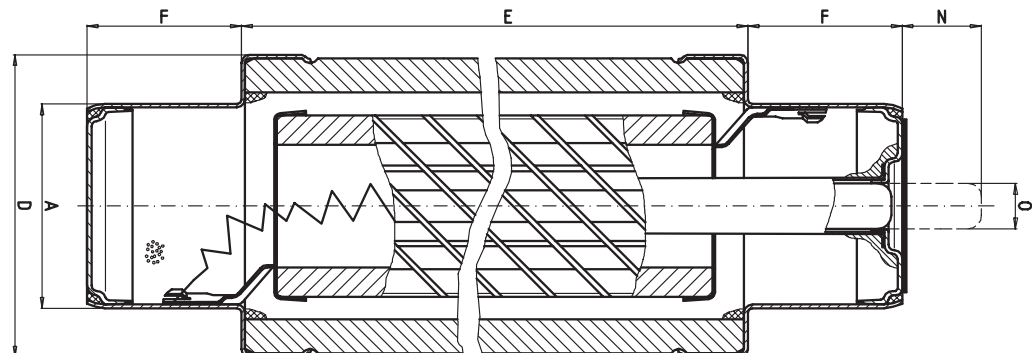
DIN Size  
**E= 442 mm**

Rated voltage  
**AC 10/17.5 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 231 13	2.10	53	63	2.2	1
10 A	30 231 13	2.10	53	63	2.2	1
16 A	30 231 13	2.10	53	63	2.2	1
20 A	30 231 13	2.10	53	63	2.2	1
25 A	30 231 13	2.10	53	63	2.2	1
31.5 A	30 231 13	2.10	53	63	2.2	1
40 A	30 231 13	2.10	53	63	2.2	1
50 A	30 232 13	2.64	67	63	2.9	1
63 A	30 232 13	2.64	67	63	2.9	1
80 A	30 232 13	2.64	67	63	2.9	1
100 A	30 233 13	3.35	85	63	5.4	1
125 A	30 233 13	3.35	85	63	5.4	1
160 A	30 233 13	3.35	85	63	5.4	1
200 A	30 233 14	3.35	85	40	5.4	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>

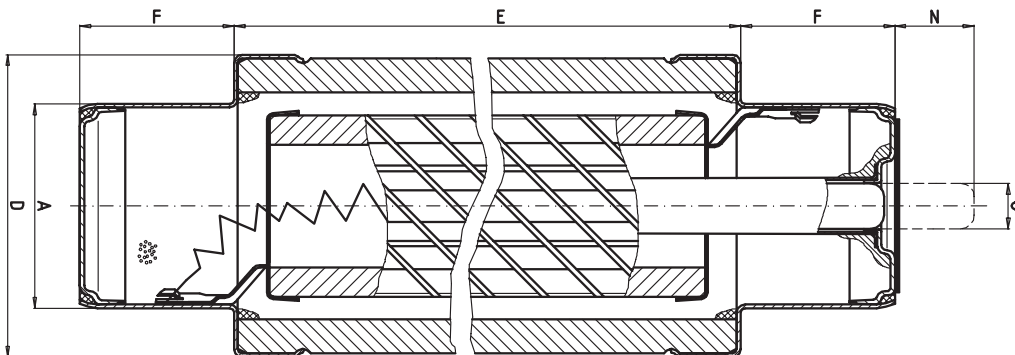


**HIGH VOLTAGE FUSES**  
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

<b>DIN Size</b> <b>E= 292 mm</b>	<b>Rated voltage</b> <b>AC 10/24 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 180 13	2.10	53	31.5	1.6	1
10 A	30 180 13	2.10	53	31.5	1.6	1
16 A	30 180 13	2.10	53	31.5	1.6	1
20 A	30 225 13	2.64	67	31.5	2.0	1
25 A	30 225 13	2.64	67	31.5	2.0	1
31.5 A	30 225 13	2.64	67	31.5	2.0	1
40 A	30 225 13	2.64	67	31.5	2.0	1
50 A	30 225 13	2.64	67	31.5	2.0	1
63 A	30 225 13	2.64	67	31.5	2.0	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



## HIGH VOLTAGE FUSES GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

DIN Size  
**E= 442 mm**

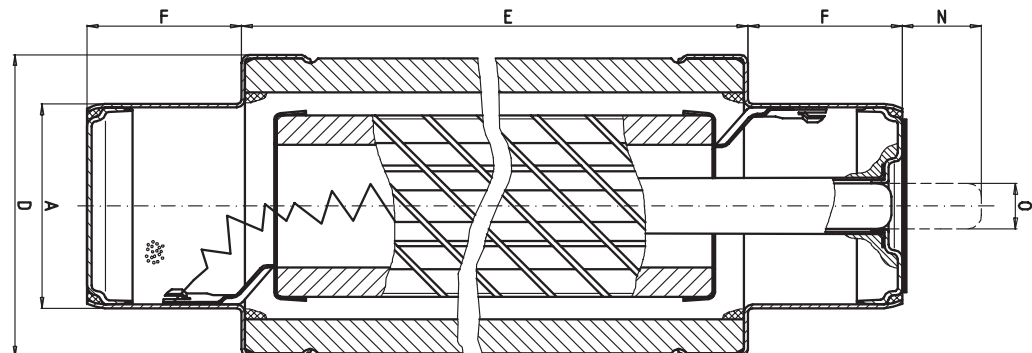
Rated voltage  
**AC 10/24 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 006 13	2.10	53	63	2.2	1
10 A	30 006 13	2.10	53	63	2.2	1
16 A	30 006 13	2.10	53	63	2.2	1
20 A	30 006 13	2.10	53	63	2.2	1
25 A	30 006 13	2.10	53	63	2.2	1
31.5 A	30 006 13	2.10	53	63	2.2	1
40 A	30 006 13	2.10	53	63	2.2	1
50 A	30 014 13	2.64	67	63	2.9	1
63 A	30 014 13	2.64	67	63	2.9	1
80 A	30 014 13	2.64	67	63	2.9	1
100 A	30 022 13	3.35	85	63	5.4	1
125 A	30 022 13	3.35	85	40	5.4	1

**Preferred Standard size 10/24 kV**



<b>A</b>	<b>1.77"</b> (45 mm)
<b>F</b>	<b>1.30"</b> (33 mm)
<b>O</b>	<b>0.40"</b> (10 mm)
<b>N</b>	<b>1.38"</b> (35 mm)



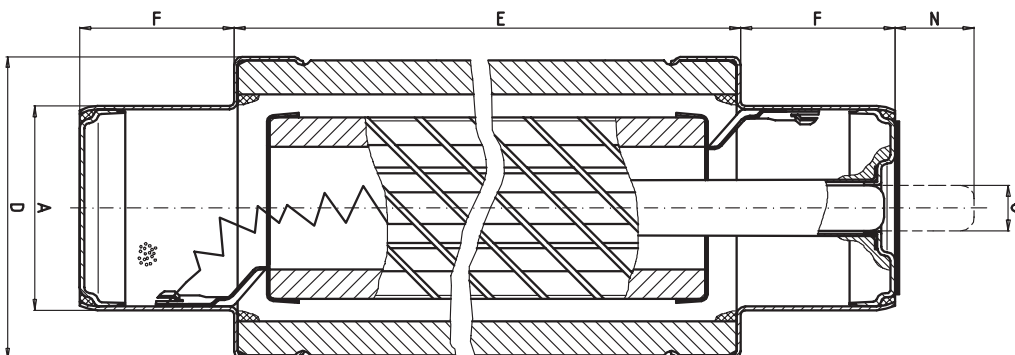


**HIGH VOLTAGE FUSES**  
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

<b>DIN Size</b> <b>E= 537 mm</b>	<b>Rated voltage</b> <b>AC 10/24 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 203 13	2.10	53	63	2.8	1
10 A	30 203 13	2.10	53	63	2.8	1
16 A	30 203 13	2.10	53	63	2.8	1
20 A	30 203 13	2.10	53	63	2.8	1
25 A	30 203 13	2.10	53	63	2.8	1
31.5 A	30 203 13	2.10	53	63	2.8	1
40 A	30 203 13	2.10	53	63	2.8	1
50 A	30 204 13	2.64	67	63	3.7	1
63 A	30 204 13	2.64	67	63	3.7	1
80 A	30 204 13	2.64	67	63	3.7	1
100 A	30 196 13	3.35	85	63	6.8	1
125 A	30 196 13	3.35	85	40	6.8	1
160 A	30 196 13	3.35	85	31.5	6.8	1
200 A	30 196 14	3.35	85	31.5	6.8	1
250 A	30 196 14	3.35	85	31.5	6.8	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



## HIGH VOLTAGE FUSES GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

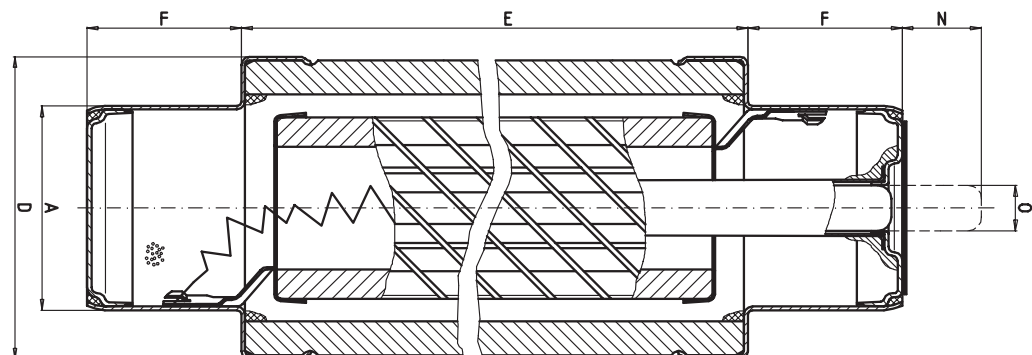
DIN Size  
**E= 442 mm**

Rated voltage  
**AC 20/36 kV**

Class  
**Back up**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 181 13	2.10	53	20	2.2	1
10 A	30 181 13	2.10	53	20	2.2	1
16 A	30 181 13	2.10	53	20	2.2	1



<b>A</b>	<b>1.77"</b> (45 mm)
<b>F</b>	<b>1.30"</b> (33 mm)
<b>O</b>	<b>0.40"</b> (10 mm)
<b>N</b>	<b>1.38"</b> (35 mm)



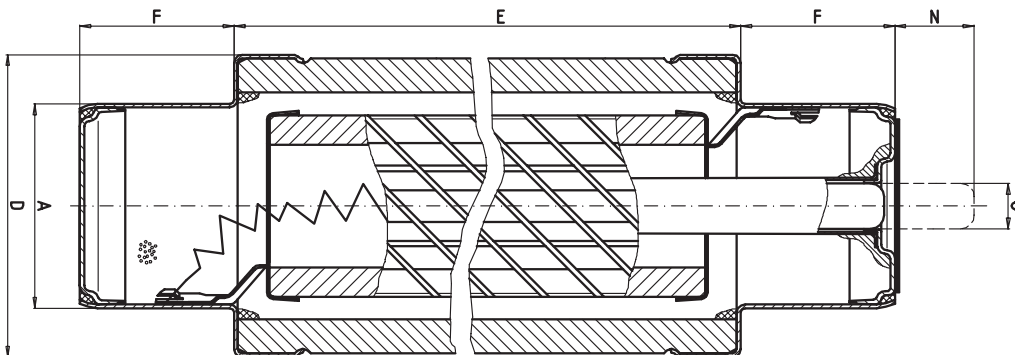
**HIGH VOLTAGE FUSES**  
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

<b>DIN Size</b> <b>E= 537 mm</b>	<b>Rated voltage</b> <b>AC 20/36 kV</b>	<b>Class</b> <b>Back up</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 008 13	2.10	53	40	2.6	1
10 A	30 008 13	2.10	53	40	2.6	1
16 A	30 008 13	2.10	53	40	2.6	1
20 A	30 008 13	2.10	53	40	2.6	1
25 A	30 008 13	2.10	53	40	2.6	1
31.5 A	30 016 13	2.64	67	40	3.5	1
40 A	30 016 13	2.64	67	40	3.5	1
50 A	30 024 13	3.35	85	40	6.0	1
63 A	30 024 13	3.35	85	40	6.0	1
80 A	30 024 13	3.35	85	40	6.0	1

**Preferred Standard size 20/36 kV**



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>

# HIGH VOLTAGE FUSES

GERMAN DIN STANDARD – GENERAL PURPOSE

FOR  
AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS



## VS-Protector for the overload and short-circuit range

- ▶ According to IEC 60 282-1 and VDE 0670 Part 4, a General-Purpose-Fuse interrupts fault currents between the rated breaking current and the current which causes melting within one hour. The protection range of the SIBA-VS-Protector extends this basic demand. The minimum breaking current is about 1.5 times the rated current. In combination with the temperature released striker pin a full range protection is possible. Additional feature is the small powerloss of the VS-Protector. It is up to 40 % smaller than the standard DIN-fuse.
- ▶ The dimensions of the VS-Protector are according to DIN 43625. The rated voltages 12 and 24 kV and also the available current ratings allow protection of transformers up to 630 kVA.
- ▶ The function of the VS-Protector is comparable to a typical Back up Fuse link. The melting elements of pure silver are wound inside onto a ceramic support. A short section in the center of the fuse is designed as a “Heat chamber”. Inside this chamber the elements are made of silver-alloy. They generate a certain level of temperature at overloads. As a result the fuses interrupt at low fault-currents without ageing.

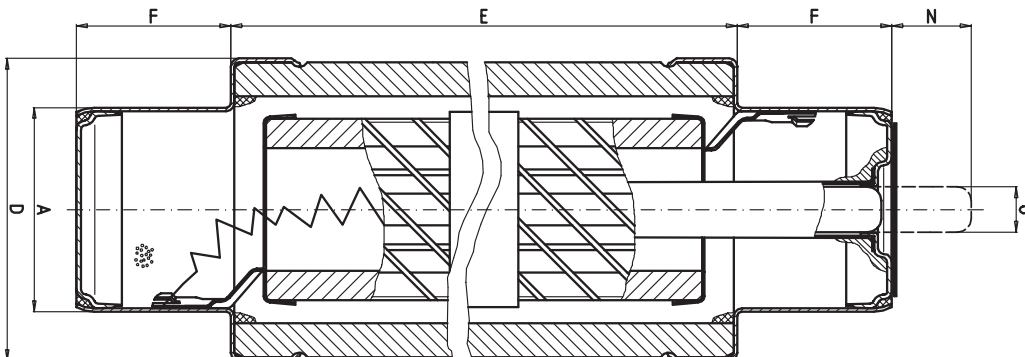


**HIGH VOLTAGE FUSES**  
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

<b>DIN Size</b> <b>E= 292 mm</b>	<b>Rated voltage</b> <b>AC 6/12 kV</b>	<b>Class</b> <b>General purpose</b>	<b>Standard</b> <b>DIN 43625 · IEC 60282-1</b>
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Rated current	Part No.	D= Diameter		Rated breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 004 93	2.10	53	63	1.6	1
8 A	30 012 13	2.64	67	63	2.0	1
10 A	30 012 93	2.64	67	63	2.0	1
16 A	30 012 93	2.64	67	63	2.0	1
20 A	30 012 93	2.64	67	63	2.0	1
25 A	30 012 93	2.64	67	63	2.0	1
31.5 A	30 012 93	2.64	67	63	2.0	1
40 A	30 012 93	2.64	67	63	2.0	1
50 A	30 020 93	3.35	85	63	3.8	1
63 A	30 020 93	3.35	85	63	3.8	1
80 A	30 020 93	3.35	85	63	3.8	1
100 A	30 020 93	3.35	85	63	3.8	1



<b>A</b>	<b>1.77" (45 mm)</b>
<b>F</b>	<b>1.30" (33 mm)</b>
<b>O</b>	<b>0.40" (10 mm)</b>
<b>N</b>	<b>1.38" (35 mm)</b>



**HIGH VOLTAGE FUSES**  
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS  
OUTDOOR SWITCHGEARS

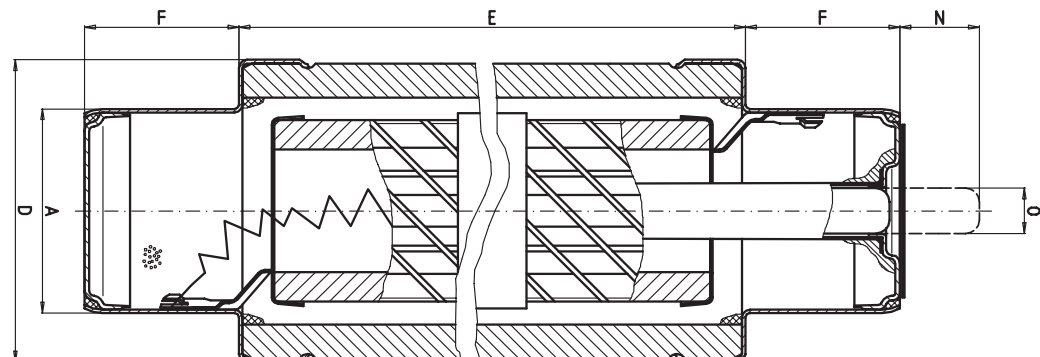
DIN Size  
**E= 442 mm**

Rated voltage  
**AC 10/24 kV**

Class  
**General purpose**

Standard  
**DIN 43625 · IEC 60282-1**

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack
		inch	mm	kA	(kg/1)	
6.3 A	30 006 93	2.10	53	40	2.2	1
10 A	30 014 93	2.64	67	40	2.9	1
16 A	30 014 93	2.64	67	40	2.9	1
20 A	30 014 93	2.64	67	40	2.9	1
25 A	30 014 93	2.64	67	40	2.9	1
31.5 A	30 022 93	3.35	85	40	5.4	1
40 A	30 022 93	3.35	85	40	5.4	1



- A** 1.77" (45 mm)
- F** 1.30" (33 mm)
- O** 0.40" (10 mm)
- N** 1.38" (35 mm)

**DIN Size  
E= 192 mm**
**Rated voltage  
AC 3/7.2 kV**
**Class  
Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 002 13	63	22	178.0	10	45	210	360
10 A	30 002 13	63	34	113.0	17	75	350	560
16 A	30 002 13	63	56	50.0	17	250	1,100	2,000
20 A	30 002 13	63	70	27.0	13	640	2,900	4,800
25 A	30 002 13	63	90	21.0	16	1,050	4,700	7,500
31.5 A	30 002 13	63	110	17.0	21	1,700	6,600	12,000
40 A	30 002 13	63	140	13.0	27	2,900	12,000	19,000
50 A	30 002 13	63	170	9.3	30	5,700	20,000	33,000
63 A	30 010 13	63	210	6.8	38	10,700	40,000	66,000
80 A	30 010 13	63	280	4.8	47	21,000	78,000	140,000
100 A	30 010 13	63	320	3.8	64	33,000	130,000	210,000
125 A	30 010 13	63	390	3.3	98	47,000	180,000	390,000
160 A	30 018 13	63	600	2.4	124	90,000	330,000	570,000
200 A	30 018 14	50	800	1.9	146	230,000	480,000	704,000
250 A	30 018 14	50	1,000	1.6	210	371,000	750,000	1,101,000

**DIN Size  
E= 292 mm**
**Rated voltage  
AC 3/7.2 kV**
**Class  
Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 098 13	63	22	178.0	10	45	210	360
10 A	30 098 13	63	34	113.0	17	75	350	560
16 A	30 098 13	63	56	50.0	17	250	1,100	2,000
20 A	30 098 13	63	70	27.0	13	640	2,900	4,800
25 A	30 098 13	63	90	21.0	16	1,050	4,700	7,500
31.5 A	30 098 13	63	110	17.0	21	1,700	6,600	12,000
40 A	30 098 13	63	140	13.0	27	2,900	12,000	19,000
50 A	30 098 13	63	170	9.3	30	5,700	20,000	33,000
63 A	30 099 13	63	210	6.8	38	10,700	40,000	66,000
80 A	30 099 13	63	280	4.8	47	21,000	78,000	140,000
100 A	30 099 13	63	320	3.8	64	33,000	130,000	210,000
125 A	30 099 13	63	390	3.3	98	47,000	180,000	390,000
160 A	30 100 13	63	600	2.3	103	90,000	330,000	570,000
200 A	30 100 14	50	800	1.9	134	230,000	480,000	704,000
250 A	30 100 14	50	1,000	1.6	191	371,000	750,000	1,101,000
315 A	30 100 14	50	1,260	1.2	281	545,000	1,066,000	1,616,000
355 A	30 100 14	50	1,420	1.0	336	825,000	1,420,000	2,225,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

DIN Size  
**E= 442 mm**

Rated voltage  
**AC 3/7.2 kV**

Class  
**Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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
100 A	30 109 13	63	320	3.8	64	33,000	130,000	210,000
125 A	30 109 13	63	390	3.3	98	47,000	180,000	390,000
160 A	30 110 13	63	600	2.3	85	90,000	330,000	570,000
200 A	30 110 14	50	800	2.1	155	230,000	480,000	704,000
250 A	30 110 14	50	1,000	1.8	233	371,000	750,000	1,101,000
315 A	30 110 14	50	1,260	1.5	281	545,000	1,066,000	1,616,000
355 A	30 110 14	50	1,420	1.3	320	825,000	1,420,000	2,225,000
400 A	30 110 14	50	1,600	1.1	347	1,000,000	1,900,000	2,528,000
500 A	30 110 14	50	2,000	0.85	430	1,668,000	3,162,000	4,500,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**



**DIN Size E= 192 mm      Rated voltage AC 6/12 kV      Class Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 119 13	63	22	297	16	45	210	360
10 A	30 119 13	63	34	189	28	75	350	560
16 A	30 119 13	63	56	87	28	250	1,100	2,000
20 A	30 267 13	63	70	46	23	640	2,900	4,800
25 A	30 267 13	63	90	36	29	1,050	4,700	7,500
31.5 A	30 267 13	63	110	29	38	1,700	6,600	12,000
40 A	30 267 13	63	140	22	50	2,900	12,000	19,000
50 A	30 267 13	63	170	16	56	5,700	20,000	33,000
63 A	30 267 13	63	210	12	63	10,700	40,000	66,000

**DIN Size E= 292 mm      Rated voltage AC 6/12 kV      Class Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 004 13	63	22	297.0	16	45	210	360
10 A	30 004 13	63	34	189.0	28	75	350	560
16 A	30 004 13	63	56	84.0	28	250	1,100	2,000
20 A	30 004 13	63	70	45.0	23	640	2,900	4,800
25 A	30 004 13	63	90	34.0	29	1,050	4,700	7,500
31.5 A	30 004 13	63	110	28.0	38	1,700	6,600	12,000
40 A	30 004 13	63	140	22.0	50	2,900	12,000	19,000
50 A	30 004 13	63	170	16.0	56	5,700	20,000	33,000
63 A	30 012 13	63	210	12.0	63	10,700	40,000	66,000
80 A	30 012 13	63	280	8.5	76	21,000	78,000	140,000
100 A	30 012 13	63	320	6.5	104	33,000	130,000	210,000
125 A	30 012 13	63	390	5.5	159	47,000	180,000	390,000
160 A	30 020 13	63	600	3.9	173	90,000	330,000	570,000
200 A	30 020 14	50	800	3.0	234	230,000	480,000	704,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

DIN Size  
E= 442 mm

Rated voltage  
AC 6/12 kV

Class  
Back up

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 101 13	63	22	297.0	16	45	210	360
10 A	30 101 13	63	34	189.0	28	75	350	560
16 A	30 101 13	63	56	87.0	19	250	1,100	2,000
20 A	30 101 13	63	70	46.0	22	640	2,900	4,800
25 A	30 101 13	63	90	36.0	28	1,050	4,700	7,500
31.5 A	30 101 13	63	110	29.0	37	1,700	6,600	12,000
40 A	30 101 13	63	140	22.0	48	2,900	12,000	19,000
50 A	30 101 13	63	170	16.0	54	5,700	20,000	33,000
63 A	30 102 13	63	210	12.0	58	10,700	40,000	66,000
80 A	30 102 13	63	280	8.5	70	21,000	78,000	140,000
100 A	30 102 13	63	320	6.5	96	33,000	130,000	210,000
125 A	30 102 13	63	390	5.5	147	47,000	180,000	390,000
160 A	30 103 13	63	600	3.9	172	90,000	330,000	570,000
200 A	30 103 14	50	800	2.9	193	230,000	480,000	704,000
250 A	30 103 14	50	1,000	2.6	269	371,000	750,000	1,101,000

DIN Size  
E= 537 mm

Rated voltage  
AC 6/12 kV

Class  
Back up

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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
100 A	30 211 13	63	320	6.5	96	33,000	130,000	210,000
125 A	30 211 13	63	390	5.5	147	47,000	180,000	390,000
160 A	30 211 13	63	600	3.9	172	90,000	330,000	570,000
200 A	30 211 14	50	800	3.2	193	230,000	480,000	704,000
250 A	30 211 14	50	1,000	2.6	274	371,000	750,000	1,101,000
315 A	30 211 14	50	1,260	2.2	382	545,000	1,066,000	1,616,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 292 mm**                      **AC10/17.5 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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	@ 17.5 kV A <sup>2</sup> s
6.3 A	30 255 13	53	22	397.0	21	45	210	360
10 A	30 255 13	53	34	252.0	38	75	350	560
16 A	30 255 13	53	56	116.0	37	250	1,100	2,000
20 A	30 221 13	63	70	62.0	40	640	2,900	4,800
25 A	30 221 13	63	90	48.0	56	1,050	4,700	7,500
31.5 A	30 221 13	63	110	39.0	65	1,700	6,600	12,000
40 A	30 221 13	63	140	29.0	84	2,900	12,000	19,000
50 A	30 221 13	63	170	21.0	101	5,700	20,000	33,000
63 A	30 222 13	85	210	16.0	106	10,700	40,000	66,000
80 A	30 222 13	85	280	11.0	137	21,000	78,000	140,000
100 A	30 222 13	85	320	8.7	182	33,000	130,000	210,000
125 A	30 222 13	85	390	7.5	235	47,000	180,000	390,000
160 A	30 222 13	85	600	5.2	290	90,000	330,000	570,000

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 367 mm**                      **AC 10/17.5 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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	@ 17.5 kV A <sup>2</sup> s
6.3 A	30 176 13	63	22	397.0	21	45	210	360
10 A	30 176 13	63	34	252.0	38	75	350	560
16 A	30 176 13	63	56	116.0	37	250	1,100	2,000
20 A	30 176 13	63	70	62.0	40	640	2,900	4,800
25 A	30 176 13	63	90	48.0	56	1,050	4,700	7,500
31.5 A	30 177 13	63	110	39.0	65	1,700	6,600	12,000
40 A	30 177 13	63	140	29.0	84	2,900	12,000	19,000
50 A	30 177 13	63	170	21.0	101	5,700	20,000	33,000
63 A	30 177 13	63	210	16.0	106	10,700	40,000	66,000
80 A	30 178 13	63	280	11.0	137	21,000	78,000	140,000
100 A	30 178 13	63	320	8.7	182	33,000	130,000	210,000
125 A	30 178 13	63	390	7.5	235	47,000	180,000	390,000
160 A	30 178 13	63	600	5.2	290	90,000	330,000	570,000
200 A	30 178 14	40	800	3.85	330	230,000	480,000	704,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

DIN Size  
**E= 442 mm**

Rated voltage  
**AC 10/17.5 kV**

Class  
**Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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	@ 17.5 kV A <sup>2</sup> s
6.3 A	30 231 13	63	22	397.0	21	45	210	360
10 A	30 231 13	63	34	252.0	38	75	350	560
16 A	30 231 13	63	56	116.0	37	250	1,100	2,000
20 A	30 231 13	63	70	62.0	42	640	2,900	4,800
25 A	30 231 13	63	90	48.0	56	1,050	4,700	7,500
31.5 A	30 231 13	63	110	39.0	60	1,700	6,600	12,000
40 A	30 231 13	63	140	29.0	84	2,900	12,000	19,000
50 A	30 232 13	63	170	21.0	101	5,700	20,000	33,000
63 A	30 232 13	63	210	16.0	106	10,700	40,000	66,000
80 A	30 232 13	63	280	11.0	137	21,000	78,000	140,000
100 A	30 233 13	63	320	8.7	182	33,000	130,000	210,000
125 A	30 233 13	63	390	7.5	235	47,000	180,000	390,000
160 A	30 233 13	63	600	5.2	290	90,000	330,000	570,000
200 A	30 233 14	40	800	3.85	330	230,000	480,000	704,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 292 mm**                      **AC 10/24 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 180 13	31.5	22	546	29	45	210	360
10 A	30 180 13	31.5	34	347	52	75	350	560
16 A	30 180 13	31.5	56	160	59	250	1,100	2,000
20 A	30 225 13	31.5	70	86	46	640	2,900	4,800
25 A	30 225 13	31.5	90	66	56	1,050	4,700	7,500
31.5 A	30 225 13	31.5	110	53	72	1,700	6,600	12,000
40 A	30 225 13	31.5	140	41	106	2,900	12,000	19,000
50 A	30 225 13	31.5	170	29	108	5,700	20,000	33,000
63 A	30 225 13	31.5	210	21	132	10,700	40,000	66,000

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 442 mm**                      **AC 10/24 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 006 13	63	22	546	29	45	210	360
10 A	30 006 13	63	34	347	52	75	350	560
16 A	30 006 13	63	56	151	59	250	1,100	2,000
20 A	30 006 13	63	70	83	46	640	2,900	4,800
25 A	30 006 13	63	90	62	56	1,050	4,700	7,500
31.5 A	30 006 13	63	110	52	72	1,700	6,600	12,000
40 A	30 006 13	63	140	41	106	2,900	12,000	19,000
50 A	30 014 13	63	170	29	108	5,700	20,000	33,000
63 A	30 014 13	63	210	22	132	10,700	40,000	66,000
80 A	30 014 13	63	280	16	174	21,000	78,000	140,000
100 A	30 022 13	63	320	13	234	33,000	130,000	210,000
125 A	30 022 13	40	390	11	320	47,000	180,000	390,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

DIN Size  
E= 537 mm

Rated voltage  
AC 10/24 kV

Class  
Back up

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	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 A	30 203 13	63	22	546.0	29	45	210	360
10 A	30 203 13	63	34	347.0	52	75	350	560
16 A	30 203 13	63	56	160.0	57	250	1,100	2,000
20 A	30 203 13	63	70	86.0	45	640	2,900	4,800
25 A	30 203 13	63	90	66.0	55	1,050	4,700	7,500
31.5 A	30 203 13	63	110	53.0	70	1,700	6,600	12,000
40 A	30 203 13	63	140	43.0	103	2,900	12,000	19,000
50 A	30 204 13	63	170	29.0	101	5,700	20,000	33,000
63 A	30 204 13	63	210	21.0	121	10,700	40,000	66,000
80 A	30 204 13	63	280	16.0	147	21,000	78,000	140,000
100 A	30 196 13	63	320	13.0	240	33,000	130,000	210,000
125 A	30 196 13	40	390	11.0	320	47,000	180,000	390,000
160 A	30 196 13	31.5	600	8.0	381	90,000	330,000	570,000
200 A	30 196 14	31.5	800	5.3	440	230,000	480,000	704,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 442 mm**                      **AC 20/36 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	Pre-arcing I <sup>2</sup> t-value A <sup>2</sup> s	Total I <sup>2</sup> t value	
							@ 20 kV A <sup>2</sup> s	@ 36 kV A <sup>2</sup> s
6.3 A	30 181 13	20	22	819	44	45	210	360
10 A	30 181 13	20	34	521	78	75	350	560
16 A	30 181 13	20	56	241	74	250	1,100	3,000

**DIN Size**                      **Rated voltage**                      **Class**  
**E= 537 mm**                      **AC 20/36 kV**                      **Back up**

Rated current	Part No.	Rated breaking current kA	Minimum breaking current A	Cold resistance mOhm	Power loss W	Pre-arcing I <sup>2</sup> t-value A <sup>2</sup> s	Total I <sup>2</sup> t value	
							@ 20 kV A <sup>2</sup> s	@ 36 kV A <sup>2</sup> s
6.3 A	30 008 13	40	22	819	44	45	210	360
10 A	30 008 13	40	34	521	78	75	350	560
16 A	30 008 13	40	56	241	79	250	1,100	2,000
20 A	30 008 13	40	70	129	66	640	2,900	4,800
25 A	30 008 13	40	90	99	87	1,050	4,700	7,500
31.5 A	30 016 13	40	110	80	102	1,700	6,600	12,000
40 A	30 016 13	40	140	60	144	2,900	12,000	19,000
50 A	30 024 13	40	170	44	186	5,700	20,000	33,000
63 A	30 024 13	40	210	32	224	10,700	40,000	66,000
80 A	30 024 13	40	280	23	280	21,000	78,000	140,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGES HHD 33 AND HHD 34**

**DIN Size**  
**E= 292 mm**
**Rated voltage**  
**AC 6/12 kV**
**Class**  
**General Purpose**

Rated current	Part No.	Breaking current kA	Cold resistance mOhm	Power loss W	Pre-arcing I <sup>2</sup> t-value A <sup>2</sup> s	Total I <sup>2</sup> t value @ 12 kV A <sup>2</sup> s
6.3 A	30 004 93	63	150	7	110	900
8 A	30 012 93	63	120	9	180	1,400
10 A	30 012 93	63	100	12	240	2,000
16 A	30 012 93	63	40	12	530	4,400
20 A	30 012 93	63	31	15	850	7,000
25 A	30 012 93	63	25	18	1,330	11,000
31.5 A	30 012 93	63	20	23	2,100	18,000
40 A	30 012 93	63	16	29	3,400	28,000
50 A	30 020 93	63	15	42	5,500	33,000
63 A	30 020 93	63	12	54	8,500	68,000
80 A	30 020 93	63	9	79	16,200	142,000
100 A	30 020 93	63	7.7	108	23,500	183,000

**DIN Size**  
**E= 442 mm**
**Rated voltage**  
**AC 10/24 kV**
**Class**  
**General Purpose**

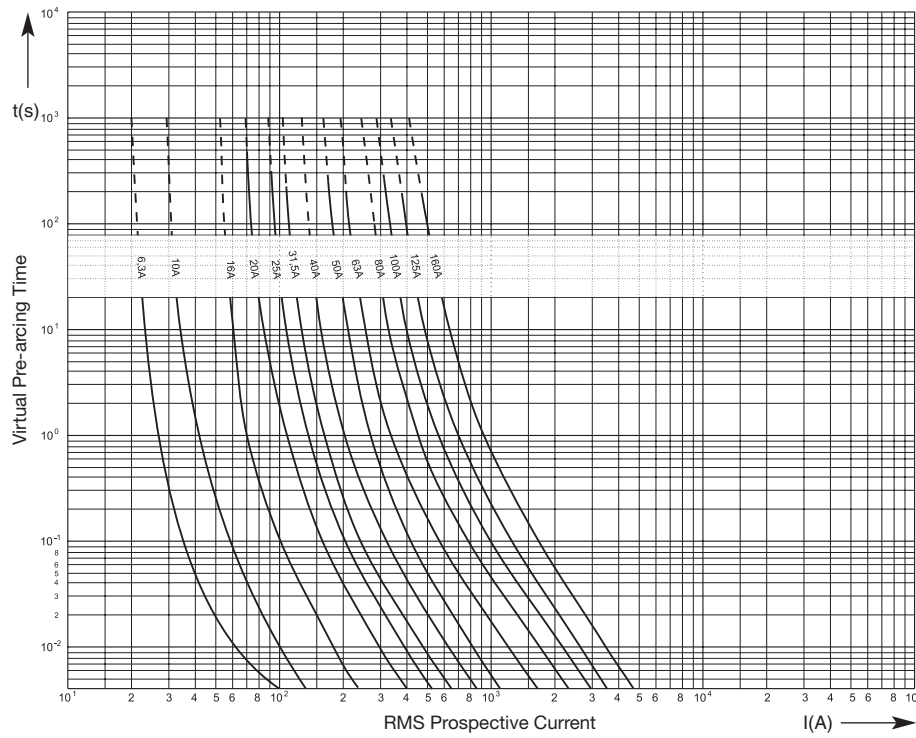
Rated current	Part No.	Breaking current kA	Cold resistance mOhm	Power loss W	Pre-arcing I <sup>2</sup> t-value A <sup>2</sup> s	Total I <sup>2</sup> t value @ 24 kV A <sup>2</sup> s
6.3 A	30 006 93	40	273	13	110	900
8 A	30 014 93	40	220	17	180	1,400
10 A	30 014 93	40	180	22	240	2,000
16 A	30 014 93	40	70	19	530	4,400
20 A	30 014 93	40	55	27	850	7,000
25 A	30 014 93	40	45	38	1,330	11,000
31.5 A	30 022 93	40	41	54	2,100	18,000
40 A	30 022 93	40	33	77	3,400	28,000

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM  
PLEASE REFER TO PAGE HHD 35**



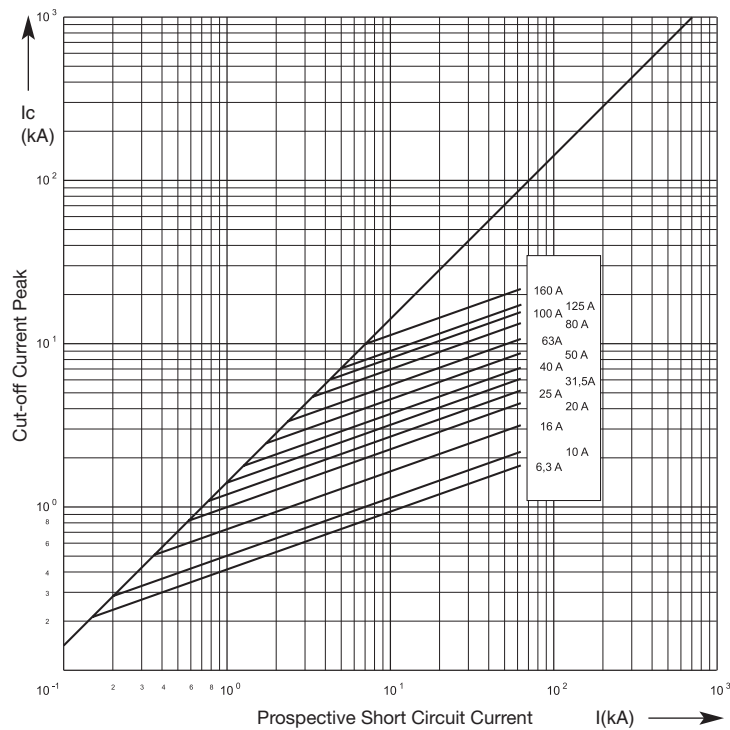
Time Current Characteristics

Back up



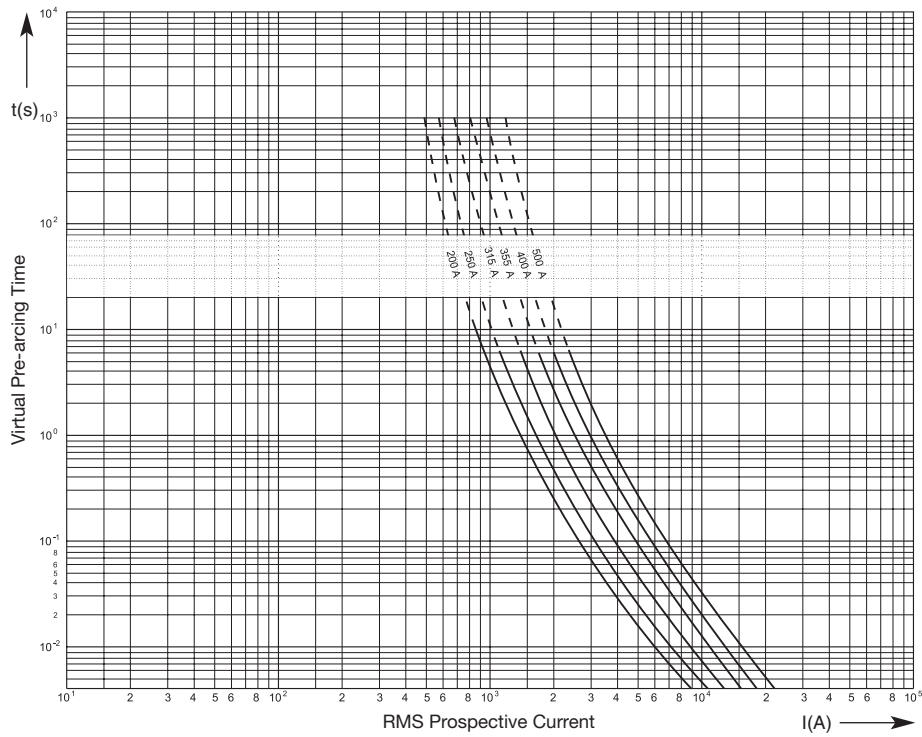
Cut Off Current Diagram

Back up



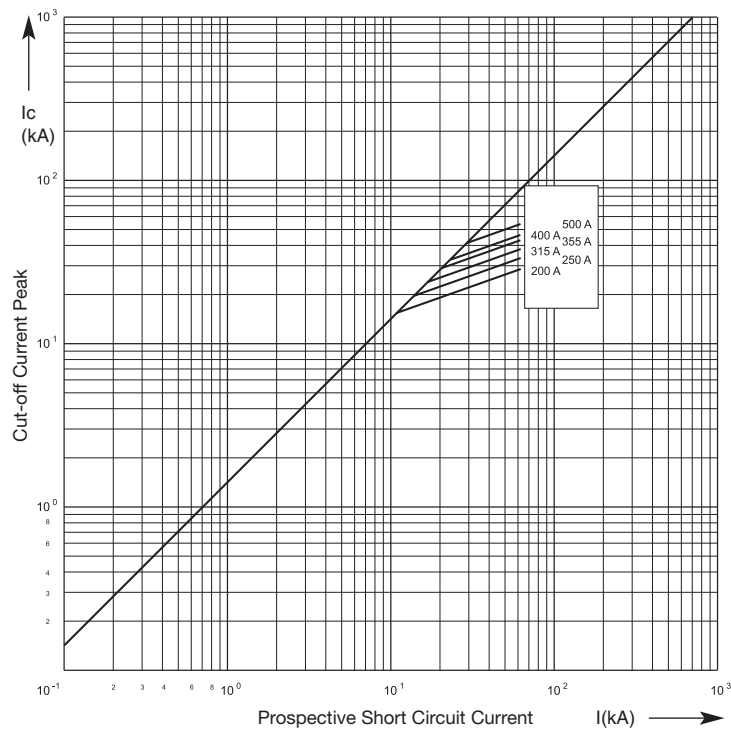
Time Current Characteristics

Back up



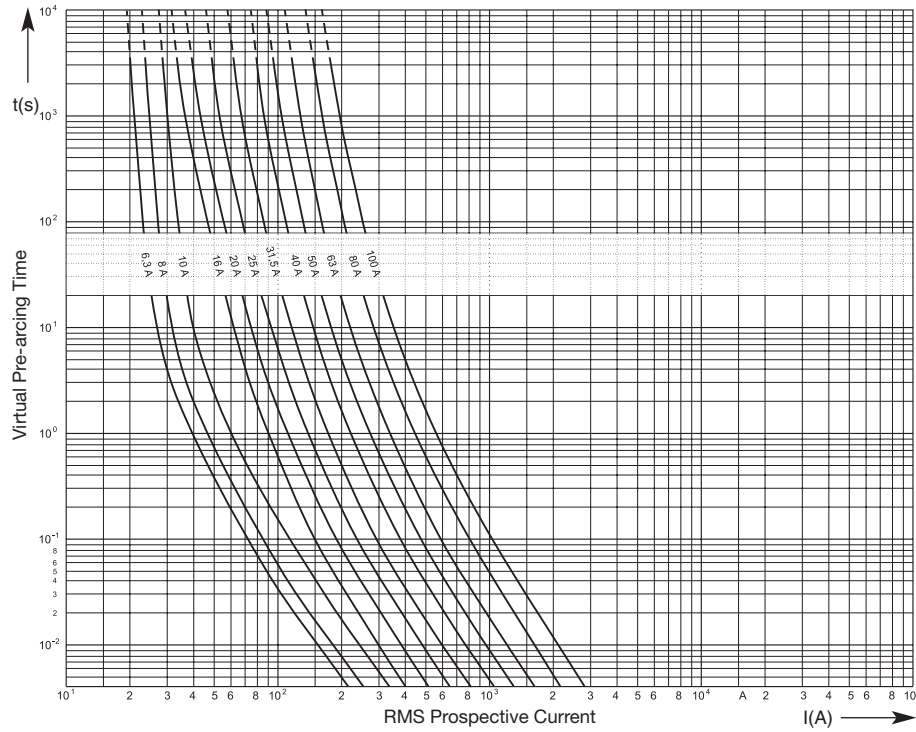
Cut Off Current Diagram

Back up



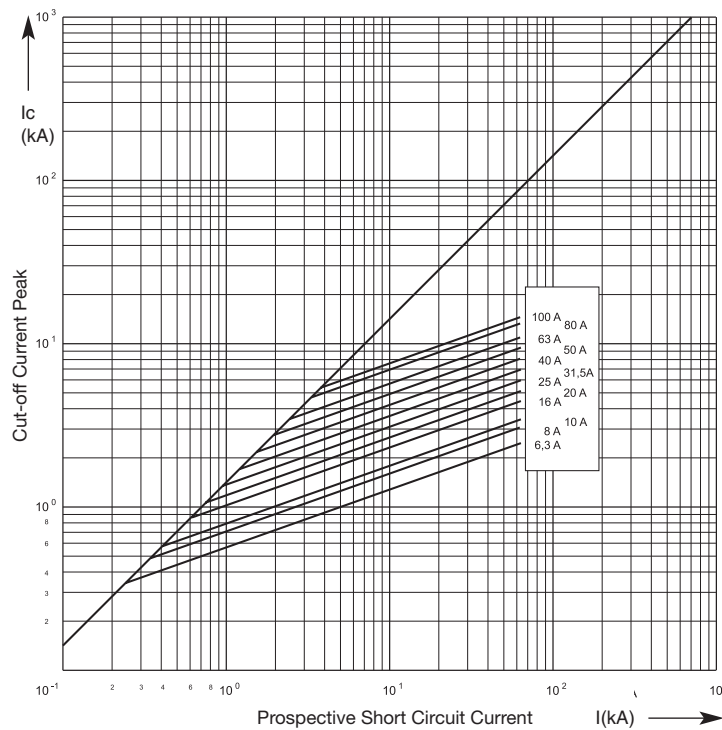
Time Current Characteristics

General Purpose

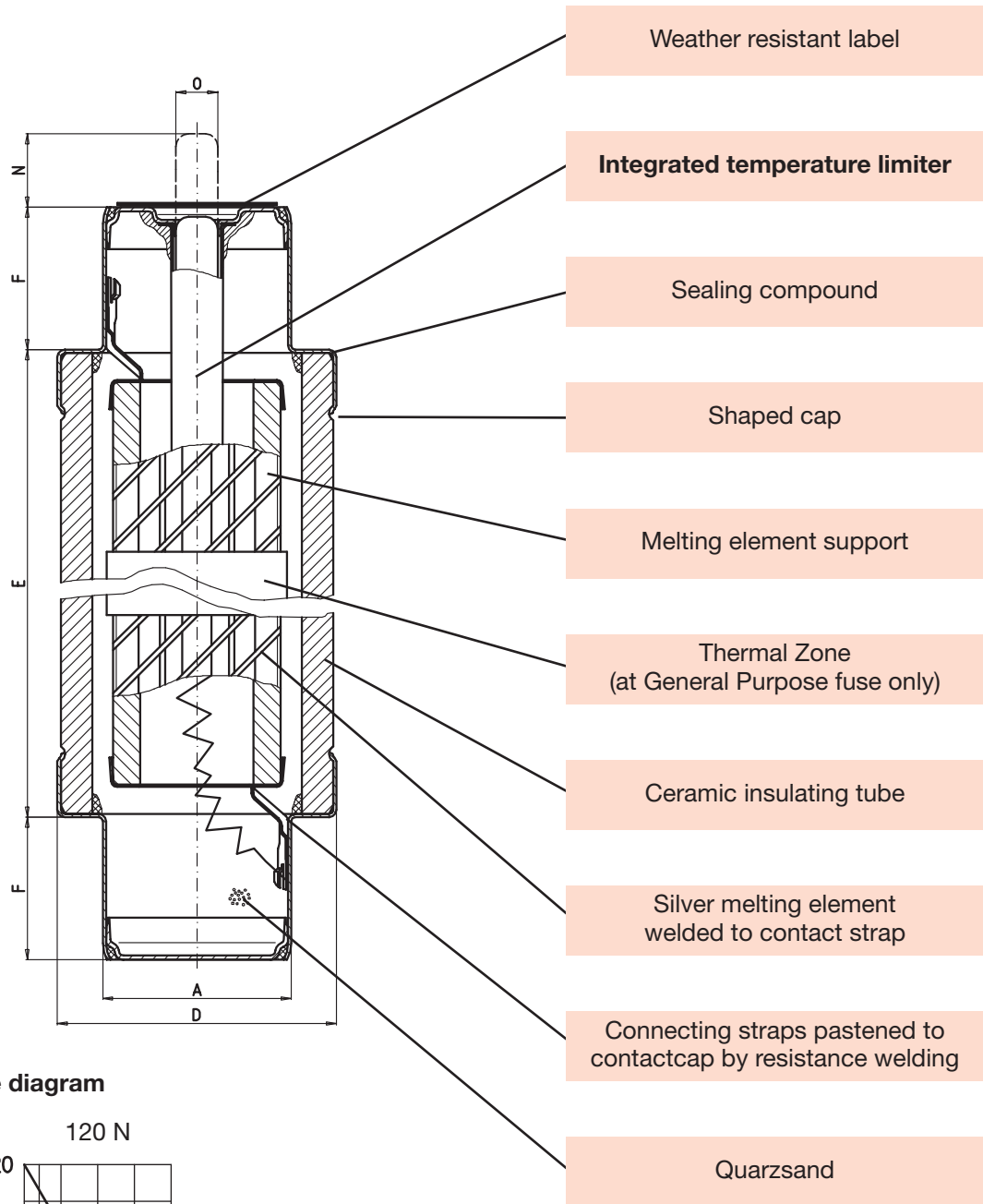


Cut Off Current Diagram

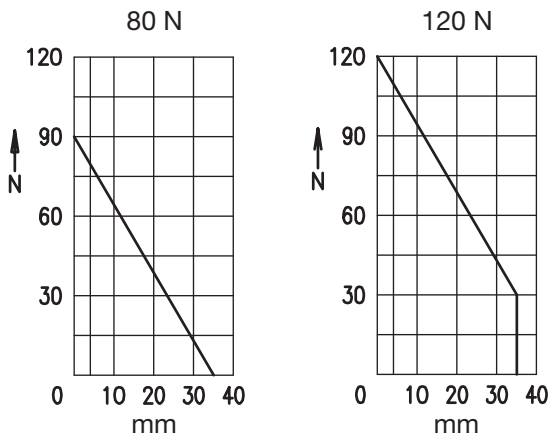
General Purpose



**HV fuse link**  
Vertical Cross Section



**Force / distance diagram**

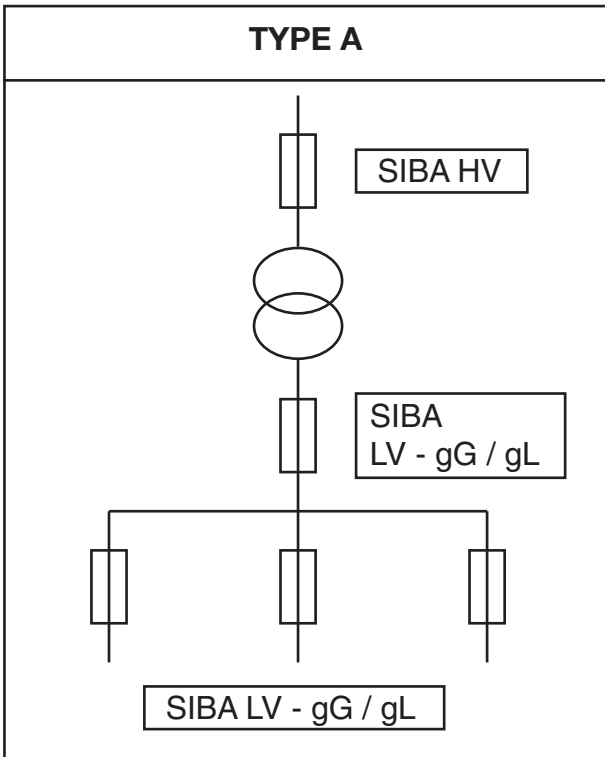


**Recommendation for the protection of main transformer with HV-Fuse links DIN Standard**

**Protection using LV-Fuse links\* operating class gG / gL on the low voltage side** **TYPE A**

Transformer rated capacity (kVA)	Line Voltage (kV)				LV fuse gG / gL (A)
	6 - 7.2	10 - 12	20 - 24	30 - 36	
	Rated current of the HV-fuse (A)				
50	10 - 16	10	6.3	4 - 6.3	63
100	20 - 31.5	16 - 20	10	6.3 - 10	125
125	25 - 40	16 - 25	10 - 16	10	160
160	31.5 - 50	20 - 31.5	16 - 20	10 - 16	200
200	40 - 63	25 - 40	16 - 20	16	250
250	50 - 80	31.5 - 50	20 - 25	16 - 20	315
315	63 - 100	40 - 50	20 - 25	20 - 25	400
400	80 - 100	50 - 80	25 - 40	20 - 25	500
500	100 - 125	63 - 80	31.5 - 50	25 - 31.5	630
630	125 - 160	80 - 125	40 - 63	31.5 - 40	800
800	160	100 - 125	63	40 - 50	1000
1000	160 - 200	125 - 160	63 - 80	40 - 50	1250
1250	250	160	80	50	-
1600	2 x 160	200	100	63	-
2000	2 x 200	250	125	80	-

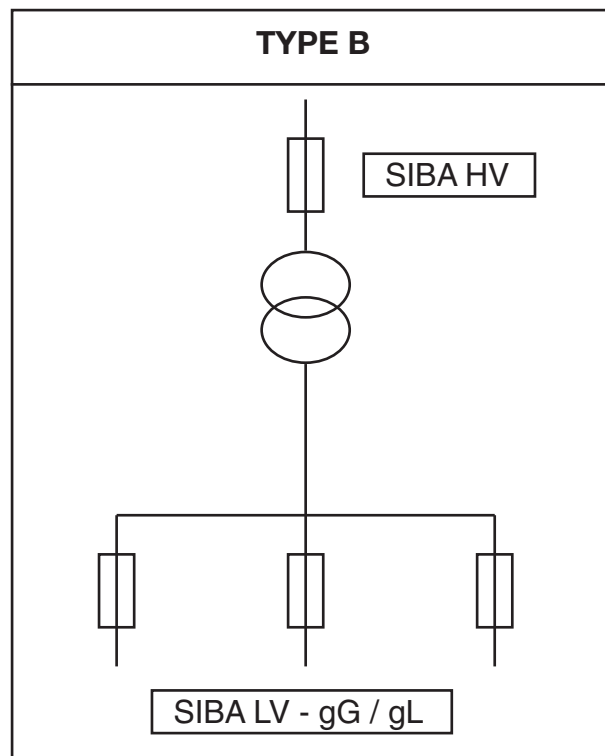
\* Use of the recommended HV-Fuse links in connection with LV-fuse links of other manufacturer must be checked before installation



**Recommendation for the protection of main transformer with HV-Fuse links DIN Standard**

**Protection without using a common LV-Fuse link on the low voltage side; TYPE B the individual cable exits are protected with a LV-Fuse link operating class gL / gG**

Transformer rated capacity (kVA)	Line Voltage (kV)				
	6 - 7.2	10 - 12	15 - 17.5	20 - 24	30 - 36
	Rated current of the HV-fuse (A)				
50	10 - 16	10	6.3 - 10	6.3	4 - 6.3
100	16 - 31.5	16 - 25	16	10	6.3 - 10
125	20 - 40	16 - 31.5	20	10 - 16	6.3 - 10
160	31.5 - 50	20 - 31.5	20 - 25	16 - 20	10 - 16
200	31.5 - 63	25 - 40	20 - 31.5	16 - 20	10 - 16
250	40 - 80	25 - 40	25 - 31.5	16 - 25	10 - 20
315	50 - 100	31.5 - 50	31.5	16 - 25	16 - 25
400	63 - 100	40 - 63	31.5 - 50	20 - 40	16 - 25
500	80 - 125	50 - 80	31.5 - 63	25 - 50	20 - 31.5
630	100 - 160	63 - 100	40 - 80	31.5 - 63	20 - 40
800	125 - 160	80 - 125	63 - 100	40 - 63	25 - 50
1000	160 - 200	100 - 160	63 - 100	50 - 80	31.5 - 50
1250	250	160	100	80	50
1600	2 x 160	200	125	100	63
2000	2 x 200	250	160	125	80



**Application recommendation for protection of capacitors with HV-Fuse links DIN Standard**

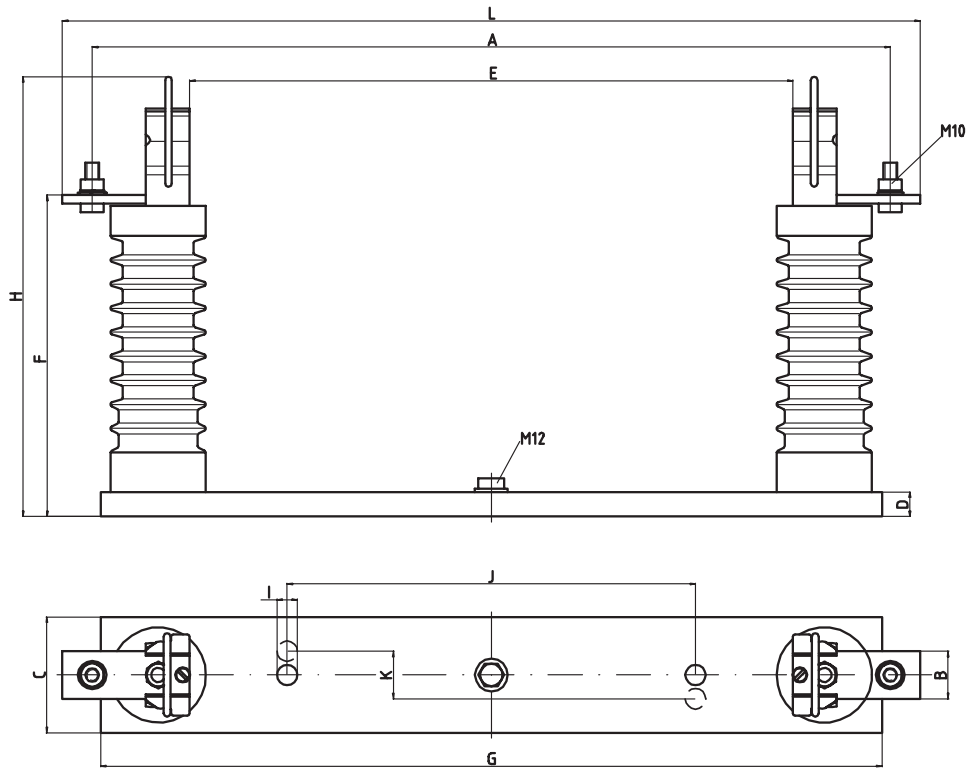
**Assignment of rated currents of HV-Fuse links to DIN Standard to Capacitor rated capacities**

Capacitor rated capacity (kVAr)	Line Voltage (kV)		
	6 - 7.2	10 - 12	20 - 24
	Rated current of the HV-fuse (A)		
50	10	6.3	6.3
100	20	10	6.3
200	40	20	10
250	50	25	16
300	63	31.5	16
400	80	40	20
500	100	50	25
750	160	80	40
1000	200	100	50
1250	250	125	63
1600	315	160	80
2000	315	200	100

To control the occurring voltage during switch off Fuse link should be chosen from the next higher voltage range. e.g. 10 kV Capacitor with 20 kV Fuse links. (See also IEC 549, Chapter II, § 3.2)

## HV Fuse-bases

for indoor application



Rated Voltage 7.2 kV  
Part No. 31 001 02

Rated Voltage 12 kV  
Part No. 31 003 02

Rated Voltage 24 kV  
Part No. 31 005 02

Rated Voltage 36 kV  
Part No. 31 007 02

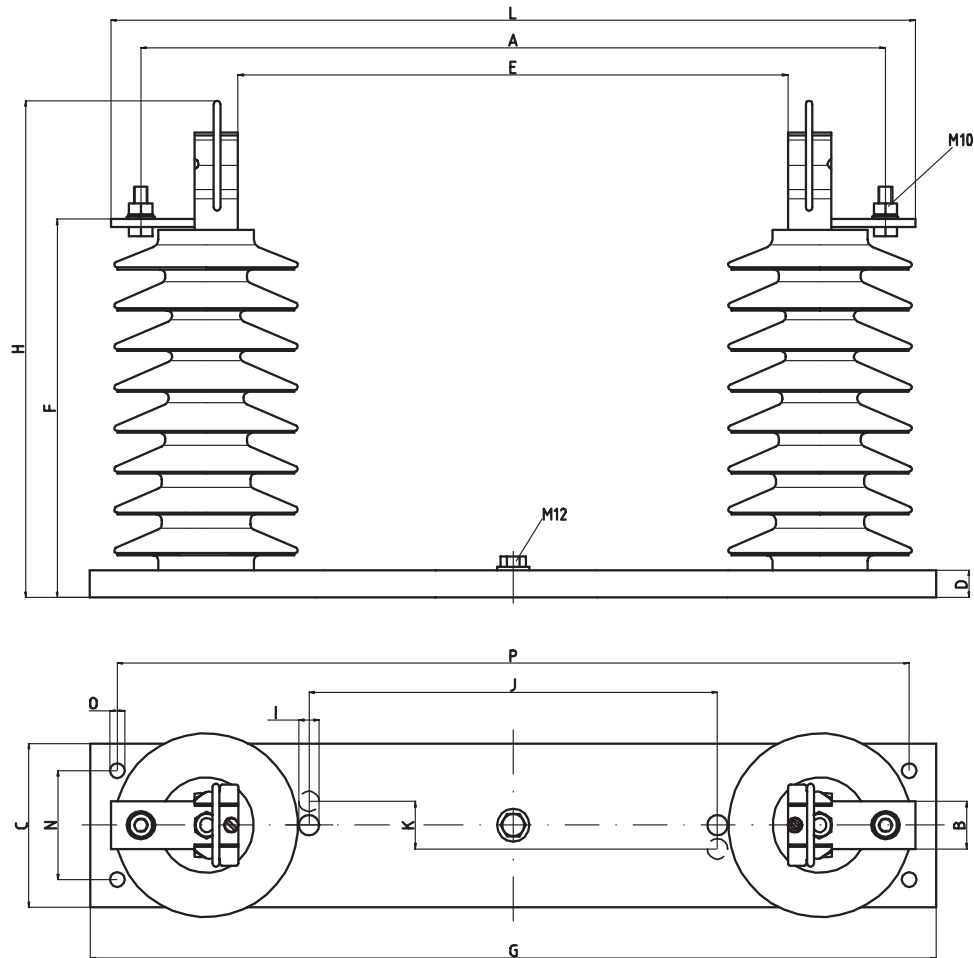
Rated Voltage 24 kV  
Part No. 31 221 01\*

A	13.78" (350 mm)	A	17.72" (450 mm)	A	23.62" (600 mm)	A	27.36" (695 mm)	A	17.72" (450 mm)
B	1.38" (35 mm)	B	1.38" (35 mm)	B	1.38" (35 mm)	B	1.38" (35 mm)	B	1.38" (35 mm)
C	3.35" (85 mm)	C	3.35" (85 mm)	C	3.35" (85 mm)	C	3.35" (85 mm)	C	3.35" (85 mm)
D	0.70" (18 mm)	D	0.70" (18 mm)	D	0.70" (18 mm)	D	0.70" (18 mm)	D	0.70" (18 mm)
E	7.60" (193 mm)	E	11.54" (293 mm)	E	17.44" (443 mm)	E	21.18" (538 mm)	E	11.54" (293 mm)
F	6.14" (156 mm)	F	6.14" (156 mm)	F	9.30" (236 mm)	F	12.83" (326 mm)	F	9.30" (236 mm)
G	12.20" (310 mm)	G	16.14" (410 mm)	G	22.60" (574 mm)	G	26.60" (676 mm)	G	16.14" (410 mm)
H	9.53" (242 mm)	H	9.53" (242 mm)	H	12.68" (322 mm)	H	16.22" (412 mm)	H	12.68" (322 mm)
I	0.60" (15 mm)	I	0.60" (15 mm)	I	0.60" (15 mm)	I	0.60" (15 mm)	I	0.60" (15 mm)
J	2.17" (55 mm)	J	7.10" (180 mm)	J	11.80" (300 mm)	J	14.96" (380 mm)	J	7.10" (180 mm)
K	1.38" (35 mm)								
L	14.96" (380 mm)	L	18.90" (480 mm)	L	24.80" (630 mm)	L	28.54" (725 mm)	L	18.90" (480 mm)

\* Reduced Length for 24 kV Fuse links, E= 292 mm



**HV Fuse-bases for outdoor application**



**Rated Voltage 7.2 kV**  
**Part No. 31 002 01**

**Rated Voltage 12 kV**  
**Part No. 31 004 01**

**Rated Voltage 24 kV**  
**Part No. 31 006 01**

**Rated Voltage 36 kV**  
**Part No. 31 008 01**

A	13.78" (350 mm)
B	1.38" (35 mm)
C	4.72" (120 mm)
D	0.80" (20 mm)
E	7.60" (193 mm)
F	9.33" (237 mm)
G	16.14" (410 mm)
H	12.80" (325 mm)
I	0.60" (15 mm)
J	2.17" (55 mm)
K	1.38" (35 mm)
L	14.96" (380 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	14.57" (370 mm)

A	17.72" (450 mm)
B	1.38" (35 mm)
C	4.72" (120 mm)
D	0.80" (20 mm)
E	11.54" (293 mm)
F	9.33" (237 mm)
G	20.08" (510 mm)
H	12.80" (325 mm)
I	0.60" (15 mm)
J	7.10" (180 mm)
L	18.90" (480 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	18.50" (470 mm)

A	23.62" (600 mm)
B	1.38" (35 mm)
C	4.72" (120 mm)
D	0.80" (20 mm)
E	17.44" (443 mm)
F	12.09" (307 mm)
G	25.98" (660 mm)
H	15.55" (395 mm)
I	0.60" (15 mm)
J	11.81" (300 mm)
L	24.80" (630 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	24.40" (620 mm)

A	27.36" (695 mm)
B	1.38" (35 mm)
C	4.72" (120 mm)
D	0.80" (20 mm)
E	21.18" (538 mm)
F	15.24" (387 mm)
G	30.91" (785 mm)
H	18.70" (475 mm)
I	0.60" (15 mm)
J	14.95" (380 mm)
L	28.54" (725 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	29.33" (620 mm)

**Microswitch**

L= 660 mm

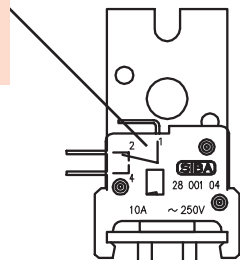
L= 900 mm

**Part No.**

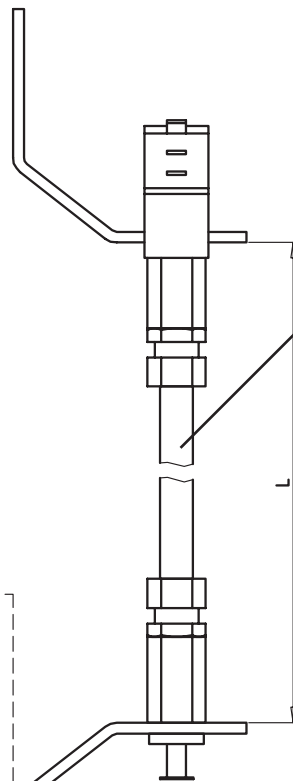
31 001 10

31 001 14

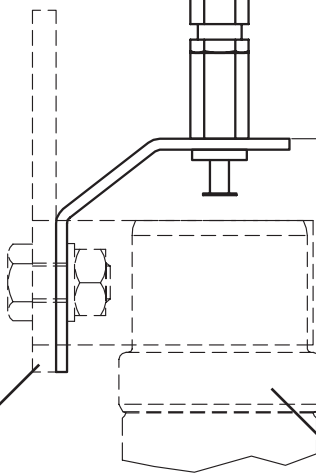
**Microswitch**  
**Part No. 28 001 04**  
250 V / 6 A  
1 change over contact



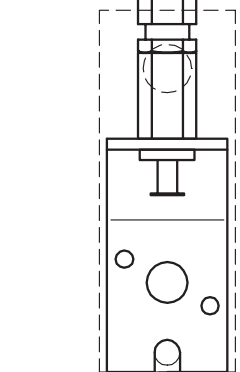
**Flexible  
Cable**



**HV-Fuse cap**

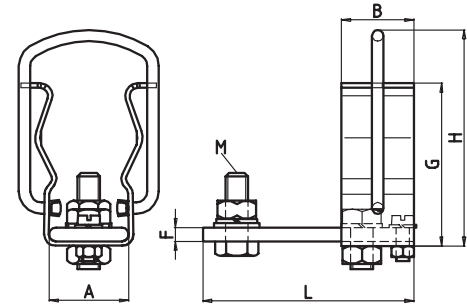


**Connection bar  
of the  
spring clip contact**  
**Part No. 34 002 01**



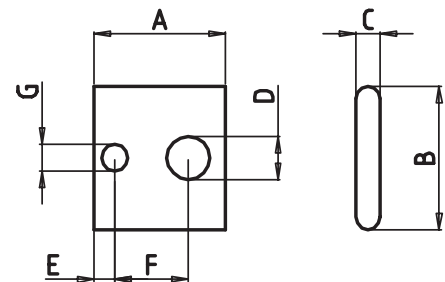
**Fuse Clip** **Part No.**  
34 002 01  
HV-Spring clip contact with connection bar

A	1.38" (35 mm)
B	1.26" (32 mm)
F	0.24" (6 mm)
G	2.80" (71.5 mm)
H	3.74" (95 mm)
L	3.66" (93 mm)
M	M 10



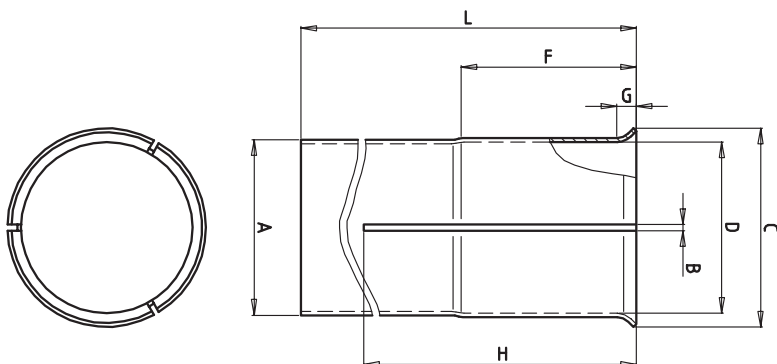
**Spacer** **Part No.**  
31 002 01.3

A	1.26" (32 mm)
B	1.38" (35 mm)
C	0.24" (6 mm)
D	0.40" (10 mm)
E	0.20" (5 mm)
F	0.70" (18 mm)
G	0.26" (6.5 mm)



**24 kV Extension adapter**

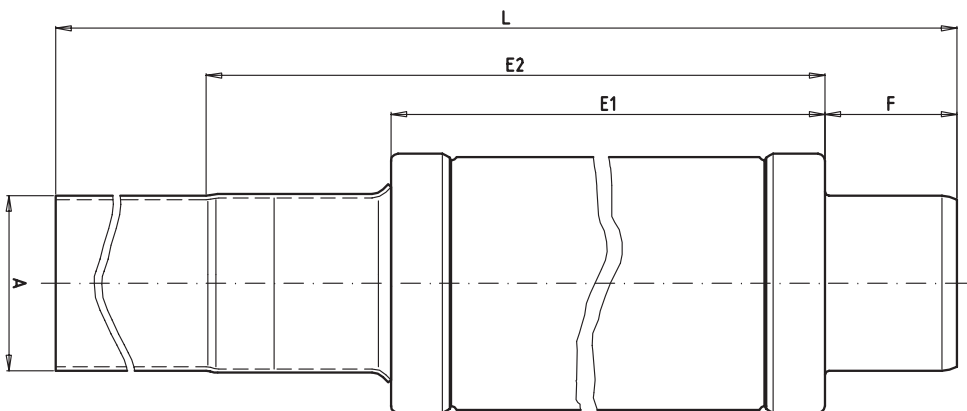
**for high voltage Fuses 12kV**



**Part No.**  
**34 006 01**

<b>A</b>	<b>1.77"</b> (45 mm)
<b>B</b>	<b>0.06"</b> (1.5 mm)
<b>C</b>	<b>2.00"</b> (51 mm)
<b>D</b>	<b>1.73"</b> (44 mm)
<b>F</b>	<b>1.77"</b> (45 mm)
<b>G</b>	<b>0.20"</b> (5 mm)
<b>H</b>	<b>2.76"</b> (70 mm)
<b>L</b>	<b>7.28"</b> (185 mm)

**HV-Fuse with 24 kV Extension adapter (Part No. 34 006 01)**

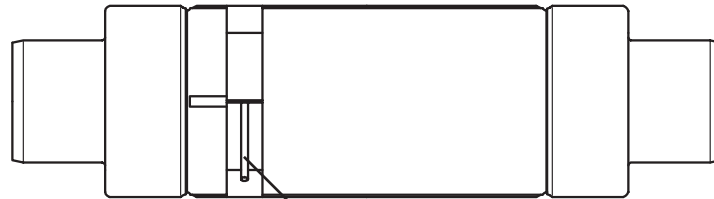


<b>A</b>	<b>1.77"</b> (45 mm)
<b>E1</b>	<b>11.50"</b> (292 mm)
<b>E2</b>	<b>17.40"</b> (442 mm)
<b>F</b>	<b>1.30"</b> (33 mm)
<b>L</b>	<b>20.00"</b> (508 mm)

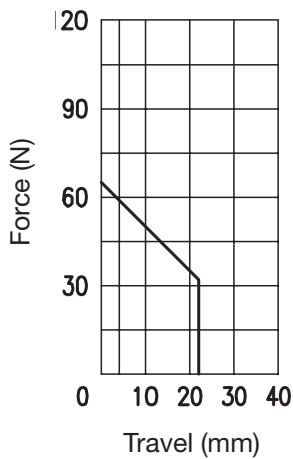
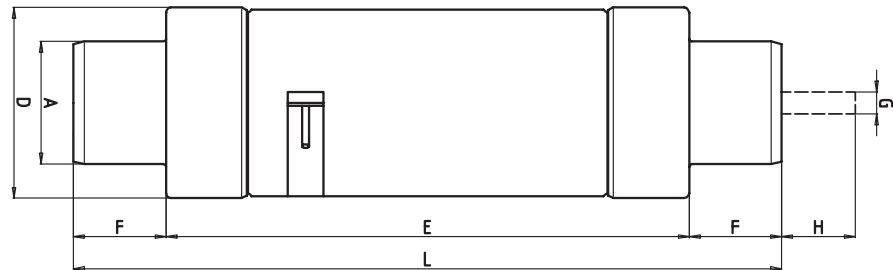
**Test-Fuse** with time delayed release  
for testing the release mechanism in enclosed medium voltage switchgear

**Part No.**  
33 010 03

<b>A</b>	<b>1.77"</b> (45 mm)
<b>D</b>	<b>2.76"</b> (70 mm)
<b>E</b>	<b>7.56"</b> (192 mm)
<b>F</b>	<b>1.34"</b> (34 mm)
<b>G</b>	<b>0.30"</b> (8 mm)
<b>H</b>	<b>1.06"</b> (27 mm)
<b>L</b>	<b>10.24"</b> (260 mm)



**Clamp lever  
for timer**

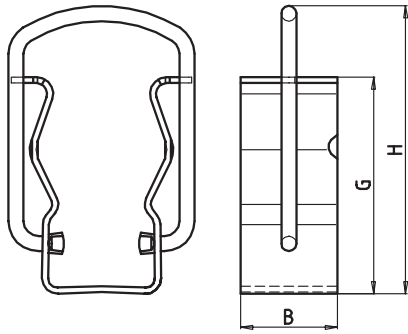


**To change E an adaptor is available**  
 from 192 mm to 292 mm **Part No.** 34 004 02  
 from 192 mm to 442 mm **Part No.** 34 006 02

**HV-Contact clip**

**Rated Current**  
200 A

**for indoor and outdoor application**



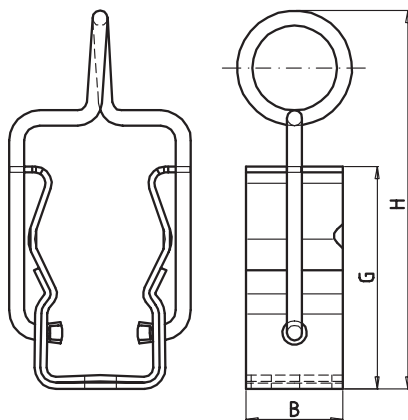
**Part No.**  
31 003 02.20

<b>B</b>	<b>1.26"</b> (32 mm)
<b>G</b>	<b>2.80"</b> (71.5 mm)
<b>H</b>	<b>3.74"</b> (95 mm)

**HV-Contact clip**

**Rated Current**  
> 200 A

**for indoor and outdoor application**

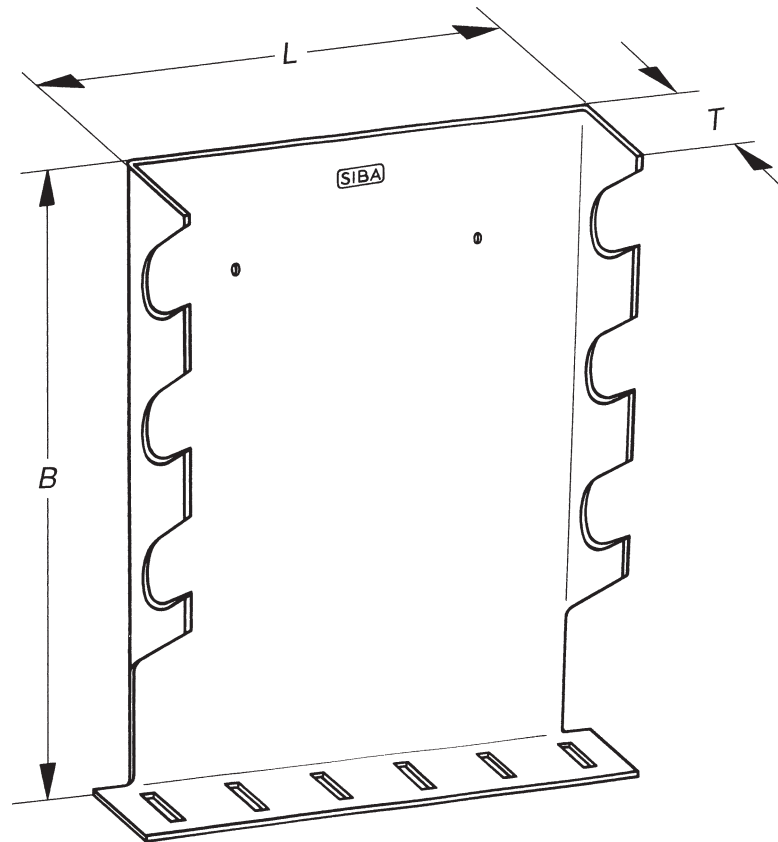


**Part No.**  
34 001 01.20

<b>B</b>	<b>1.26"</b> (32 mm)
<b>G</b>	<b>2.90"</b> (73.5 mm)
<b>H</b>	<b>4.92"</b> (125 mm)

**Storage holder**  
for HV- and LV-Fuses

Rated Voltage kV	Part No.	HV-Fuses (pieces)	LV-Fuses (pieces)	L		B		T		Weight (kg/1)
				inch	mm	inch	mm	inch	mm	
12	33 004 01	3	6	11.96	304	16.06	408	4.13	105	1.0
24	33 006 01	3	6	17.87	454	16.06	408	4.13	105	1.4
36	33 008 01	3	6	21.65	550	16.06	408	4.13	105	1.9



**HHD**

**SIBA**  
FUSES