

FUSES

Safety through quality



Superior engineering for circuit protection

In its 55 years history SIBA has developed a global product line which is backed by an efficient worldwide distribution network and technical customer support.

SIBA fuse products are designed and manufactured to a variety of major international standards such as

UL / CSA / IEC / DIN / BS / NF.



They provide reliable protection in power distribution, motor circuits, power electronics and telecommunication networks.

The design and manufacturing operation in Germany is **DIN EN ISO 9001** certified for quality management as well as **DIN EN ISO 14001** for environmental management.

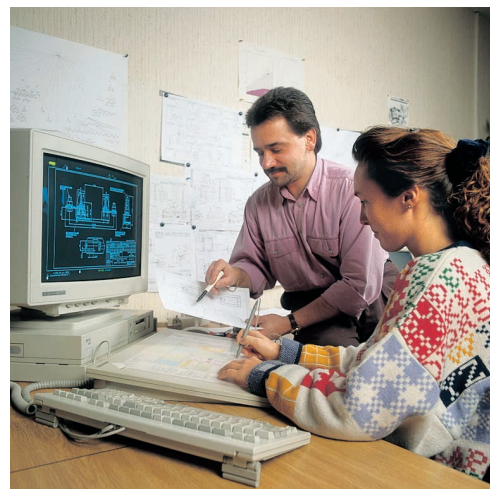
SIBA – Safety through quality

SIBA provides utmost reliable quality products based on the following resources:

- ▶ Type testing at international accredited testing stations like KEMA / Allan Bradley / IPH etc.
- ▶ DIN EN ISO 9001 for quality assurance
- ▶ DIN EN ISO 14001 for environmental management
- ▶ International approvals and standards such as



- ▶ Special design and partnerships for emerging technologies requiring new product design



The experts at SIBA with their extensive experience, innovation, advanced technology, state of the art design centers provide you with the know-how to help you solve your equipment requirements.

We welcome you to contact us for advice in any circuit protection topic, such as

Power supply:

Medium voltage fuses from 2.4 to 36 kV where SIBA is the European market leader. Our experts are familiar with all kinds of application in overhead lines / compact substations / oil submersible fuses for transformers / motor protection and capacitor circuits.



DC Fuses:

SIBA provide true DC fuse line for voltages up to 5000 V DC tested under DC conditions. These products use advanced technology to deliver reliable performance. With our advance technology we have set the standards in many areas such as Traction and DC Drives to mention a few.

Design partnership:

SIBA R&D, Engineering Services, Testing Facilities, and state of the art computer hardware and software systems are an assists to our customers in their product design development which will provide the best possible efficient automated manufacturing process in the world that leads to cost saving and superior quality in a competitive world.



FUSES

HIGH VOLTAGE FUSES

HH

- ▶ According to International Standards
- ▶ For indoor / outdoor / oil submersible use
- ▶ For Transformers / Motor / Capacitor protection



ULTRA RAPID FUSES

UR

- ▶ For AC and DC application
- ▶ DIN/IEC Standard,  Recognition
- ▶ Combination fuses for rectifier and line protection



LOW VOLTAGE FUSES

NH

- ▶ DIN/IEC Standard
- ▶ Combination Indicator
- ▶ Metal or insulated removal tags



MINIATURE FUSE LINKS

G

- ▶ SMD Fuses 125 and 250 V
- ▶ Cylindrical glass- and ceramic-tube fuses
- ▶ International Standards SEMKO, VDE, UL rec., SEV, BEAB



D-FUSES

D

- ▶ European Type „Diazed“ and „Neoazed“ fuses
- ▶ DIN/VDE Standard 400/500 V AC





FUSES

HIGH VOLTAGE FUSES

Over many decades SIBA has developed a global product line of High Voltage Fuses that are comprehensive for any and all applications.

Superior engineering, advanced technology and innovation give us the confidence to say “safety through quality”. Not just our motto but our passion. Our dedication to our clients is not solely represented in the quality of the design of our fuses or our world renown reliability:

- Our technical support staff is ready and able to answer all your questions
- Custom designs are not an inconvenience, but a welcome challenge
- Worldwide distributing network to serve all your fuse needs



This section of **HIGH VOLTAGE FUSES**
comprises the following :

HH



DIN Standard

HHD



British Standard

HHB



French Standard

HHF



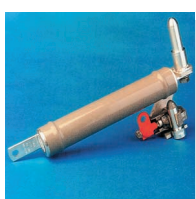
Medium Voltage Fuses for capacitors

HHC



Oil submersible Fuses

HHO



Plug-in Fuses for Overhead Line Transformers

HHP



Fuses for Motor Circuit Protection

HHM

Introduction

Applications

High Voltage fuse-links (HV fuse-links) are in use as protection devices in medium voltage switchgear. The big advantage is the very fast current limiting operation in case of short-circuit failures. Consequently they protect switchgear and equipment against dynamic thermal effects of such short-circuits in a very effective way.

SIBA-HV fuse-links can be used for the protection of:

- distribution transformers
- motors
- capacitor banks
- voltage transformers
- cable feeders

SIBA-HV fuse-links are suitable for the installation in

- indoor switchgears, air- and gas-insulated
- outdoor switchgear
- overhead lines
- service under severe climatic conditions
- installation in oil-insulated switchgear
- installation inside distribution transformers under oil

Features of the SIBA HV fuse-links:

- Reliable sealing system against humidity / dust and corrosion
- Free of ageing
- Low power losses and respectively, low temperature rise
- High breaking capacity
- High current limitation
- Low switching voltage
- High service reliability because of advanced controlled fabrication process
- Many decades of positive field experience

Standards

SIBA-HV fuse-links comply with the following standards and specifications:

IEC 60282-1 / VDE 0670 Part 4:
High-voltage fuses Part 1: Current limiting fuses

IEC 60 787 / VDE 0670 Part 402
Selection of current limiting fuses for transformer circuits

DIN 43625
High-voltage fuses, rated voltages 3.6 up to 36 kV

IEC 60644 / VDE 0670 Part 401
Requirements for HV fuse-links for motor circuit applications

IEC 60549
High voltage fuses for external protection of power capacitors

IEC 60420 / VDE 0670 Part 303
High-voltage alternating current switch-fuse combinations

Introduction

Definitions

Rated current

The rated current which a fuse-link can carry continuously without altering the time/current-characteristic curve. At higher ambient temperatures as well as at higher power losses generated by fuses of non-standardized very high rated currents, it is necessary to use derating factors. In general, this will be the case at rated currents above 160 A for protection of motor circuits.

Service voltage

This is the actual applied voltage in the circuit; voltage on the contacts of the fuse after interruption.

Time/current-characteristics

The time/current-characteristics (time/current-curve) show the relationship of the virtual melting time to the prospective short-circuit current and are given as a medium value.

The tolerance of the time/current-characteristics is $\pm 10\%$ in direction of current.

Switching voltage

The high number of tests according international standards show that the maximum possible switching voltages are well below the permissible value which is 3.2 times the service voltage. That means for example, fuse-links rated 10/24 kV can also be used in 10 kV networks.

Back-up fuses

Back-up fuses are able to break all currents from rated breaking current down to the minimum breaking current (I_3). Usually fault currents between the minimum breaking current and the rated current (I_N) cannot be safely interrupted.

General-purpose fuses

Because of their special design, SIBA General-purpose fuses, called "VS-Schutz", are able to interrupt any current from rated breaking current down to a current which causes melting of the fuse elements in less than 1 hour.

Application Guide

Changing of HV-Fuse links in 3-phase systems

If one HV-fuse-link in a 3-phase system has operated, IEC 282-1 / VDE 0670, Part 4 Section 23.2 recommends that all 3 fuse-links have to be changed.

In case of 2-pole or 3-pole short-circuits due to the manufacturing tolerances of the fuse elements, it is possible that only 1 or 2 fuse-links operate before all the fuse elements of the remaining fuse-links have melted. If such fuse-links were left in service, it is likely that nuisance operation may occur later.

HV fuse-links for transformer protection

To protect transformers in distribution networks back-up fuse-links are mainly used. To ensure a suitable protection, the values of selection table according to VDE 0670 Part 402, Table 2 may be applied. The extended tables on this basis are shown in the technical annex. These tables give recommendations for transformer ratings of 50-2000 kVA and are separated into 2 different applications which consider the concept of protection on the secondary side of the transformer:

- protection with low-voltage fuse-links of class gG
- isolating links only without any protection device

HV fuse-links for the protection of motor circuits

High-voltage fuse-links for motor circuits are back-up fuses which are designed to cover the special needs for motor protection.

The duty of such fuses is to protect the motor switches against inadmissible high overcurrents which may cause contact welding. Moreover, in case of short-circuits they have to provide interruption within milliseconds to protect the circuit against the dynamic effects of such currents.

Introduction

For selection of proper motor protection not only the fuse-link rated current has to be considered. Criteria like motor start-up current, number of starts per hour as well as duration of starts have to be taken into consideration. It is recommended also to protect motors with a reduced start-up current by fuse-links. Here the rated current of the fuses should be taken as twice the full load current of the motor.

Under consideration of motor starting current, starting time and starting frequency the rated currents of HV-fuse-links can be taken from diagrams in the technical annex.

HV fuse-links for voltage transformer protection

Although HV fuse-links are not able to protect voltage transformers efficiently in case of internal fault, they should be installed according to the requirements of VDE 0101. In case of fault the voltage transformer shall be disconnected from the supply as fast as possible in order to limit the fault effects. This is why HV fuse-links of lowest possible rated currents – as a rule 6.3 A – are recommended.

HV fuse-links for capacitor protection

Whenever capacitors are connected to a network or to a capacitor bank, high short-circuit peak currents flow, the size and the duration depend on

- capacitor size
- frequency and inductance of network
- closing angle of operation

In order to withstand the higher harmonics and to reduce temperature rise, the rated current of the fuse-links should be at least 2 times the capacitor bank rated current.

Increasing transient voltages can never be excluded. HV fuse-links of the next higher voltage range should be used for safety reasons.

The selection table classify HV fuse-links to the corresponding high voltage capacitors is shown in the technical annex.

Discriminations requirements

Discrimination between HV fuse-links

Discrimination problems may occur when distant branch stations in supply nets are protected by HV fuse links in line. In this case the rated current of the upstream HV fuse-links should be increased by a factor 2.

Discriminations between HV and LV fuse-links

To prevent the possibility of HV fuse interruption due to a low voltage side fault, a sufficient discrimination must be secured. For comparison the time/current-curves of both fuse-links have to be converted either to the low-voltage or the high-voltage level. This is especially important if several LV fuse-links in parallel are operated in the low voltage output. The fuse-link with the highest rated current is decisive for discrimination.

Discrimination between HV fuse-links and LV circuit-breaker

This operation mode requires comparison of time/current-characteristics of the HV-fuse links with the interrupting characteristics of the designated circuit breaker. For this purpose the time/current characteristics of the HV-fuse links are converted into the low voltage level and then compared with the characteristics of the breaker relay characteristics. Sufficient discrimination is given for this operation mode when the fuses clear the fault before the circuit breaking capacity is reached.

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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".

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.



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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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Selection Guide

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	
	24	292	31 221 01	HHD 40	
Outdoor Fuse-bases	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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DIN Size
E=192 mm

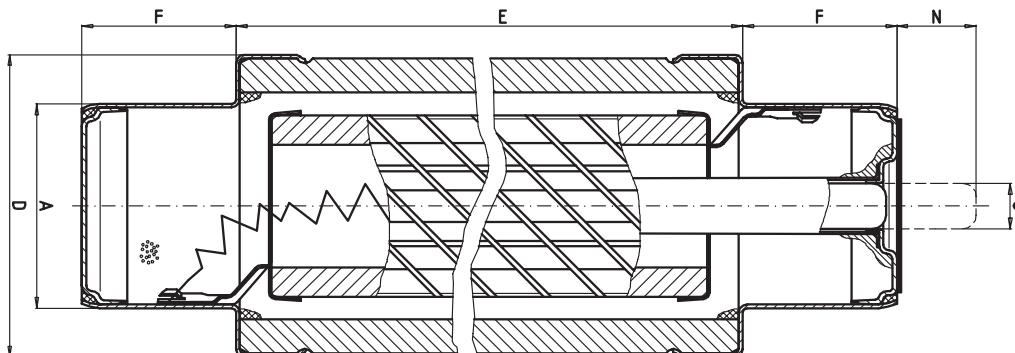
Rated voltage
AC 3/7.2 kV

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	30 002 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



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

HIGH VOLTAGE FUSES GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
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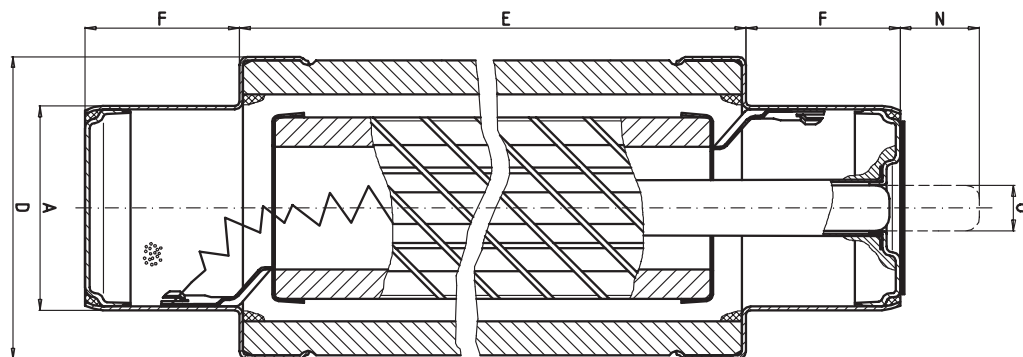
DIN Size
E= 292 mm

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	Weight	Pack	
		inch	mm	kA	(kg/1)		
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	



A	1.77" (45 mm)
F	1.30" (33 mm)
O	0.40" (10 mm)
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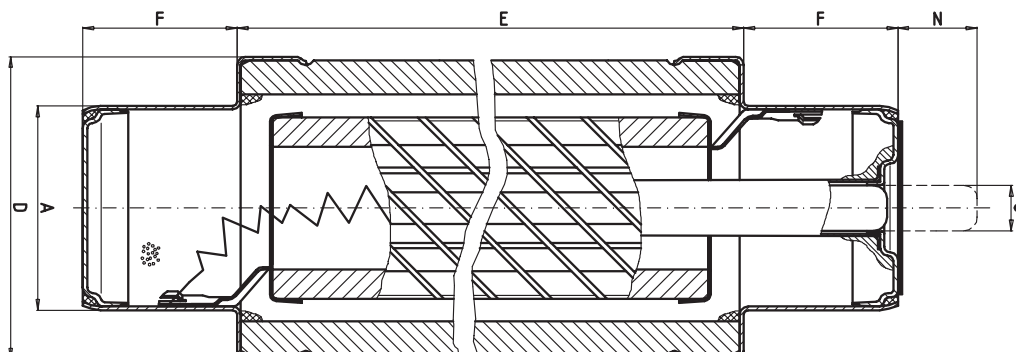
DIN Size
E= 442 mm

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				
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	



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



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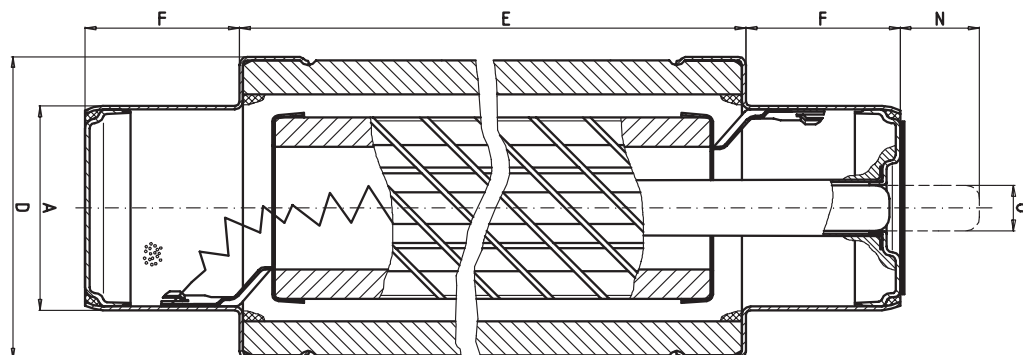
DIN Size
E= 192 mm

Rated voltage
AC 6/12 kV

Class
Back up

Standard
DIN 43625 · IEC 60282-1

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
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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FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

DIN Size
E= 292 mm

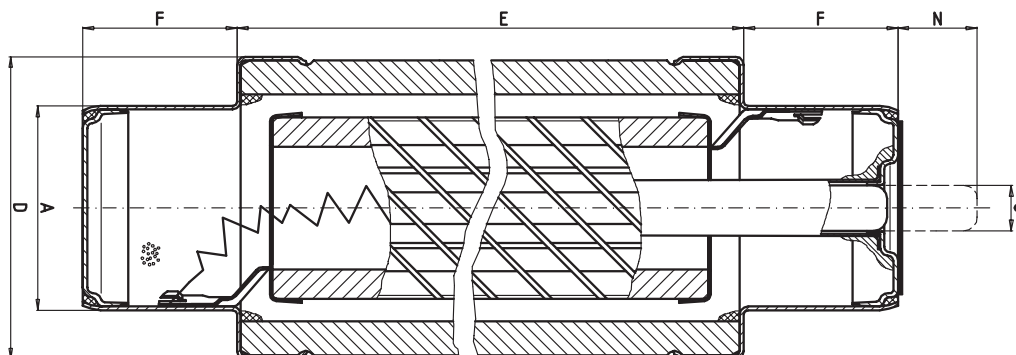
Rated voltage
AC 6/12 kV

Class
Back up

Standard
DIN 43625 · IEC 60282-1

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
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



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

HIGH VOLTAGE FUSES GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS



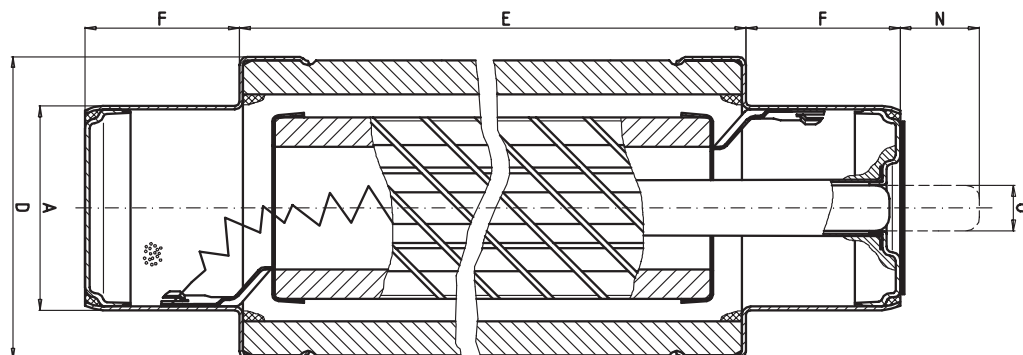
DIN Size
E= 442 mm

Rated voltage
AC 6/12 kV

Class
Back up

Standard
DIN 43625 · IEC 60282-1

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
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)



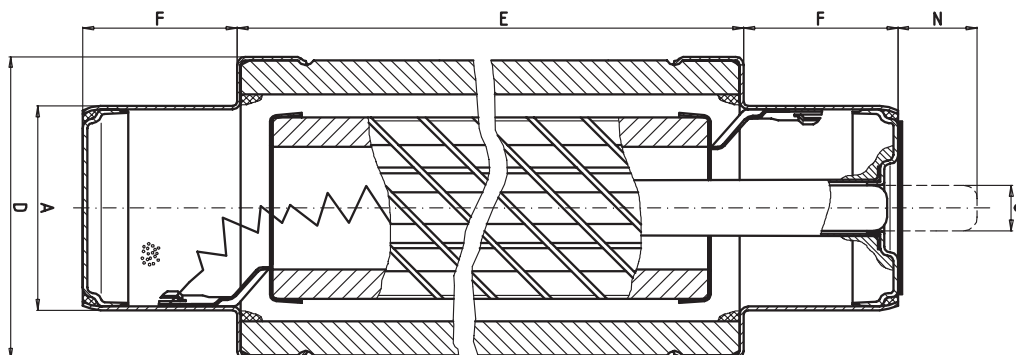
HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

DIN Size E= 537 mm	Rated voltage AC 6/12 kV	Class Back up	Standard DIN 43625 · IEC 60282-1
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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	



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



HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

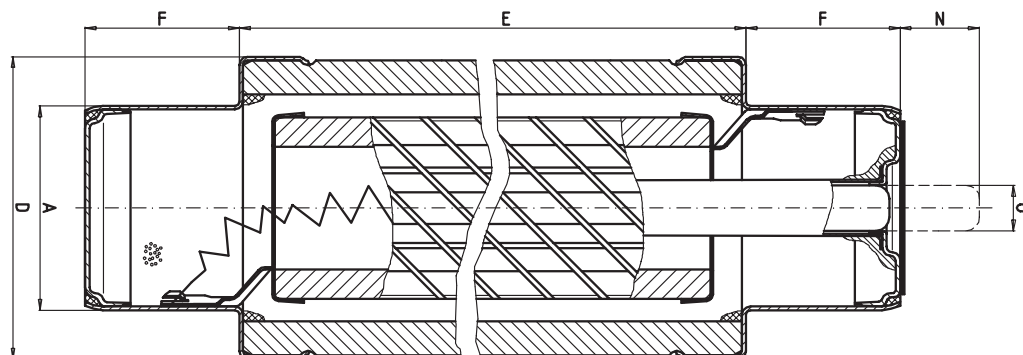
DIN Size
E= 292 mm

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	Weight	Pack	
		inch	mm	kA	(kg/1)		
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)



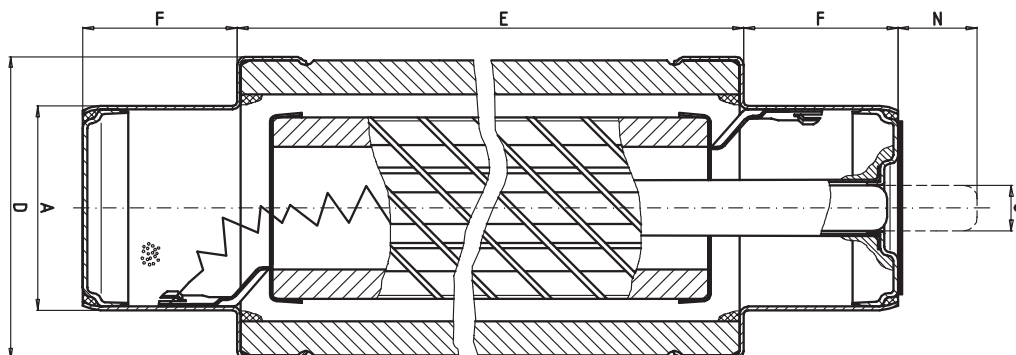
HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

DIN Size E= 367 mm	Rated voltage AC 10/17.5 kV	Class Back up	Standard DIN 43625 · IEC 60282-1
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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	



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



HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

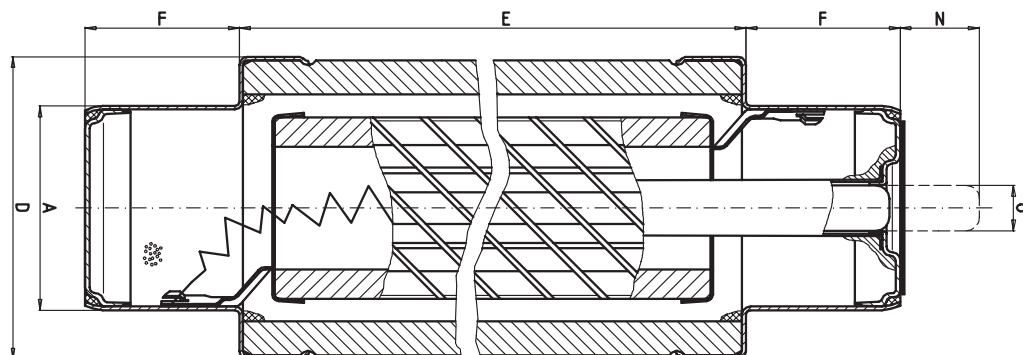
DIN Size
E= 442 mm

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	Weight	Pack	
		inch	mm	kA	(kg/1)		
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	



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



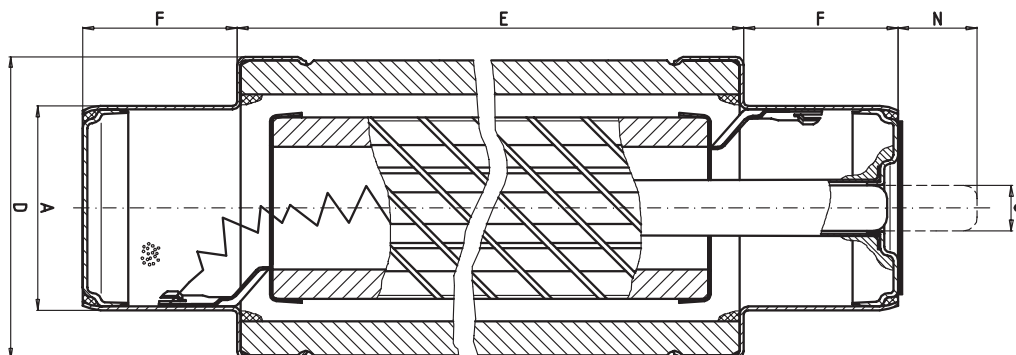
HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

DIN Size E= 292 mm	Rated voltage AC 10/24 kV	Class Back up	Standard DIN 43625 · IEC 60282-1
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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	



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

HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS



DIN Size
E= 442 mm

Rated voltage
AC 10/24 kV

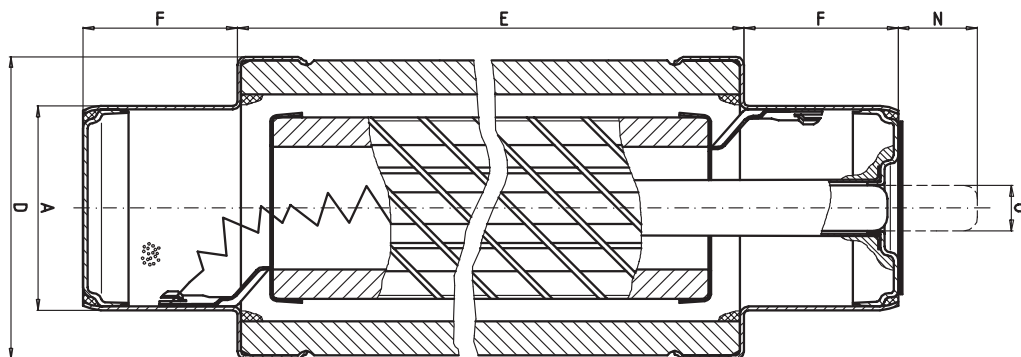
Class
Back up

Standard
DIN 43625 · IEC 60282-1

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
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

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





HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

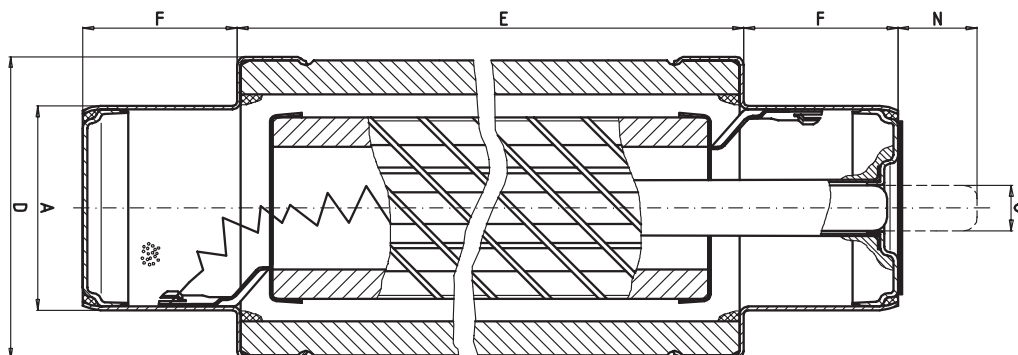
DIN Size
E= 537 mm

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	30 203 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	



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



HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

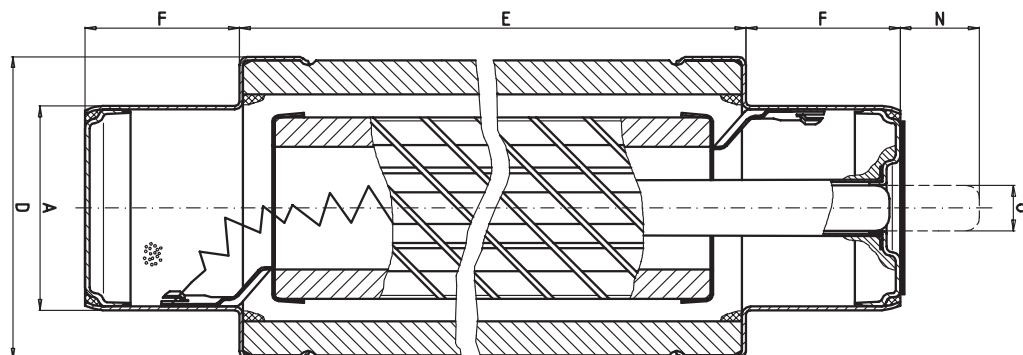
DIN Size
E= 442 mm

Rated voltage
AC 20/36 kV

Class
Back up

Standard
DIN 43625 · IEC 60282-1

Rated current	Part No.	D= Diameter		Rated breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
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	



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



HIGH VOLTAGE FUSES

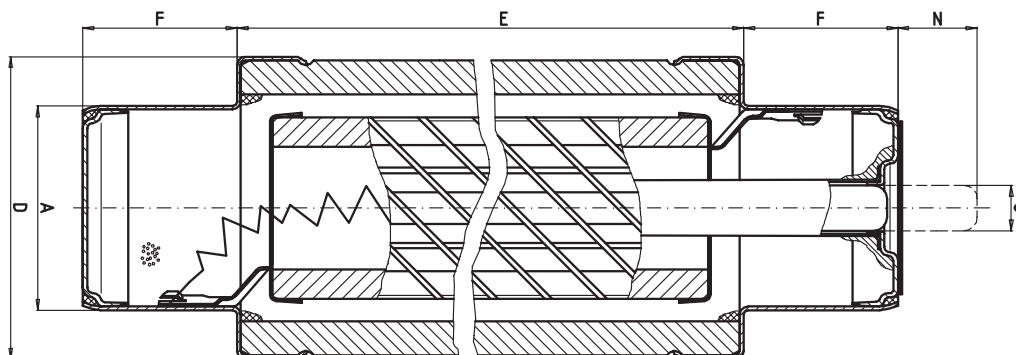
GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

DIN Size E= 537 mm	Rated voltage AC 20/36 kV	Class Back up	Standard DIN 43625 · IEC 60282-1
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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



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

HIGH VOLTAGE FUSES

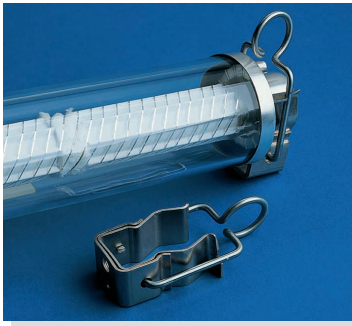
GERMAN DIN STANDARD – GENERAL PURPOSE

FOR
AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS



VS-Protector for the overload and short-circuit range

- ▶ According 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

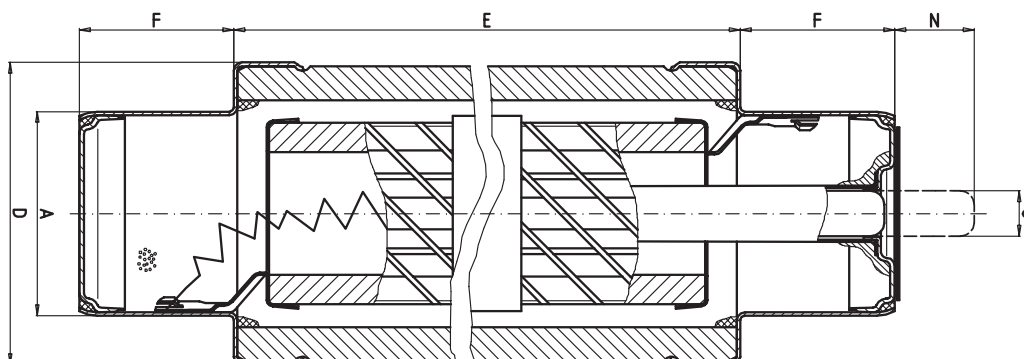
DIN Size
E= 292 mm

Rated voltage
AC 6/12 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	30 004 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	



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



HIGH VOLTAGE FUSES

GERMAN DIN STANDARD

FOR AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS

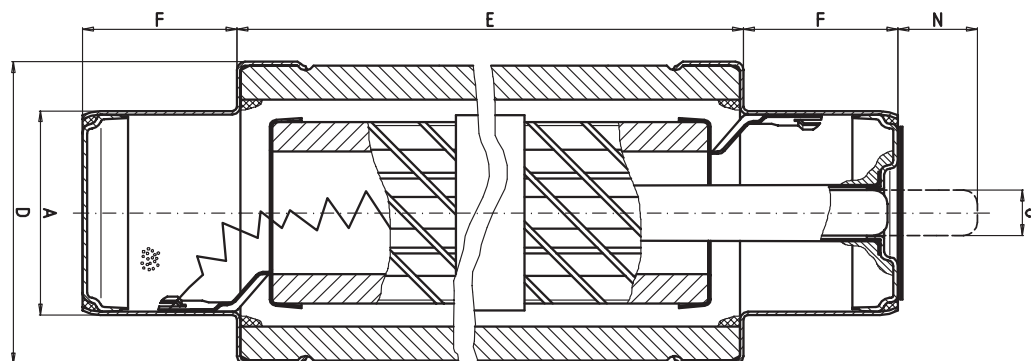
DIN Size
E= 442 mm

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 ² t-value A ² s	Total I ² t value	
							@ 3 kV A ² s	@ 7.2 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 3 kV A ² s	@ 7.2 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 3 kV A ² s	@ 7.2 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 6 kV A ² s	@ 12 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 6 kV A ² s	@ 12 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 6 kV A ² s	@ 12 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 6 kV A ² s	@ 12 kV A ² 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
E= 292 mm
Rated voltage
AC10/17.5 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 17.5 kV A ² 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
E= 367 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 17.5 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 17.5 kV A ² 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
E= 292 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 24 kV A ² 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
E= 442 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 24 kV A ² 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 ² t-value A ² s	Total I ² t value	
							@ 10 kV A ² s	@ 24 kV A ² 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
E= 442 mm
Rated voltage
AC 20/36 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 ² t-value A ² s	Total I ² t value	
							@ 20 kV A ² s	@ 36 kV A ² 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
E= 537 mm
Rated voltage
AC 20/36 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 ² t-value A ² s	Total I ² t value	
							@ 20 kV A ² s	@ 36 kV A ² 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 ² t-value A ² s	Total I ² t value @ 12 kV A ² 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	

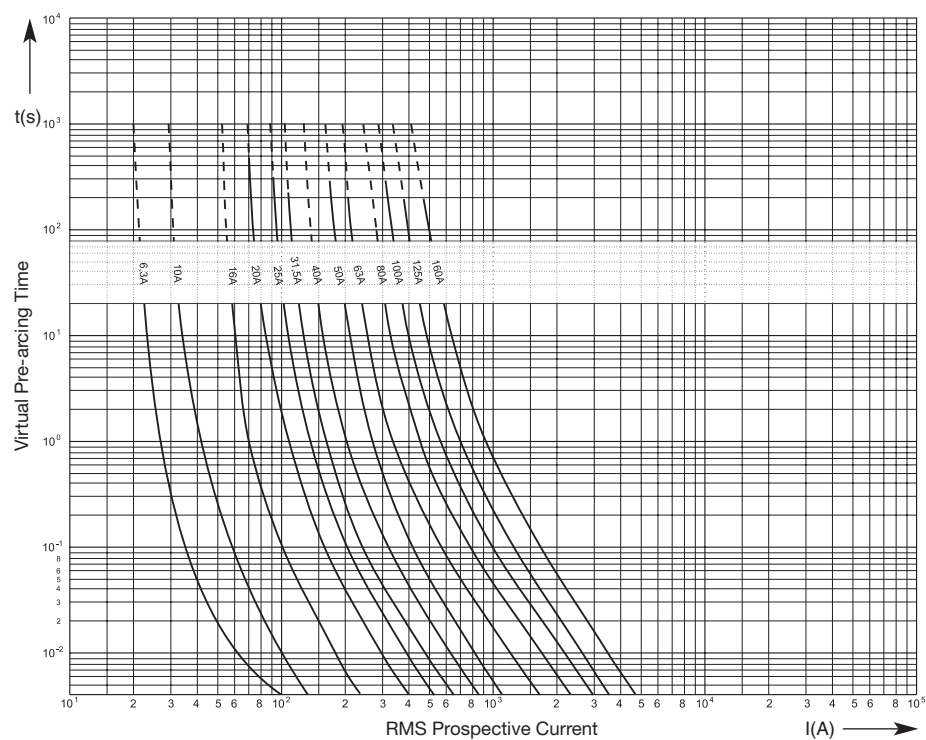
DIN Size
E= 442 mm
Rated voltage
AC 10/24 kV
Class
General Purpose

Rated current	Part No.	Breaking current kA	Cold resistance mOhm	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t value @ 24 kV A ² 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

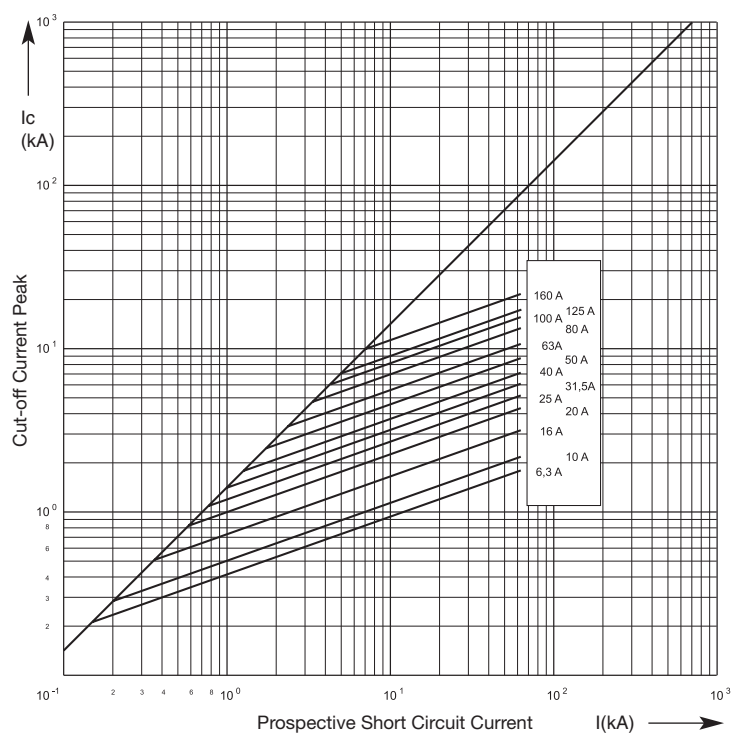
Time Current Characteristics

Back up



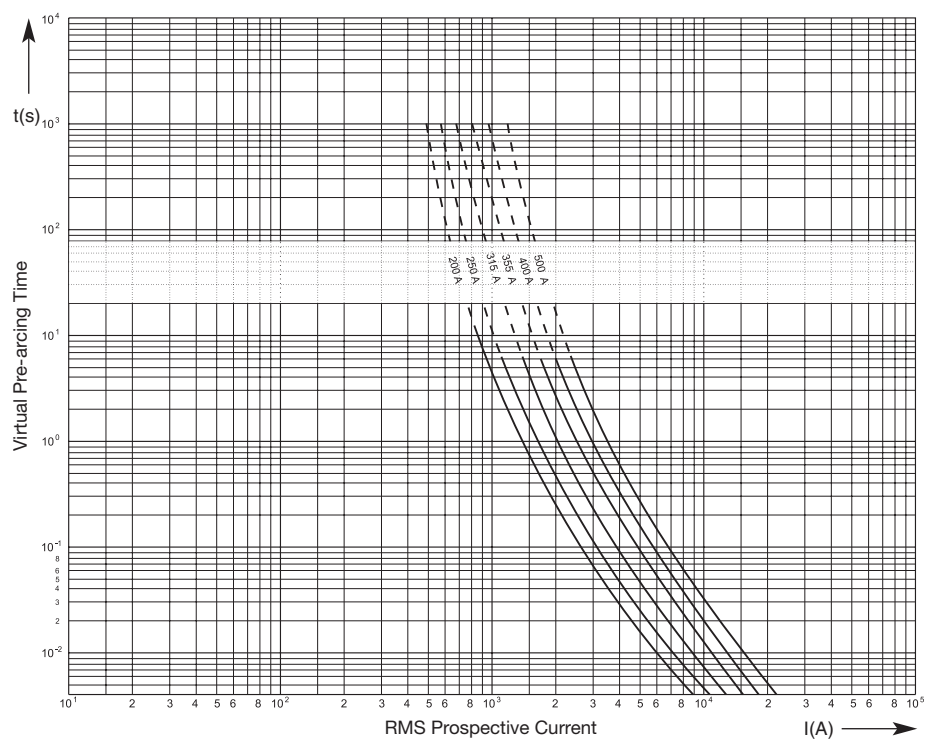
Cut Off Current Diagram

Back up



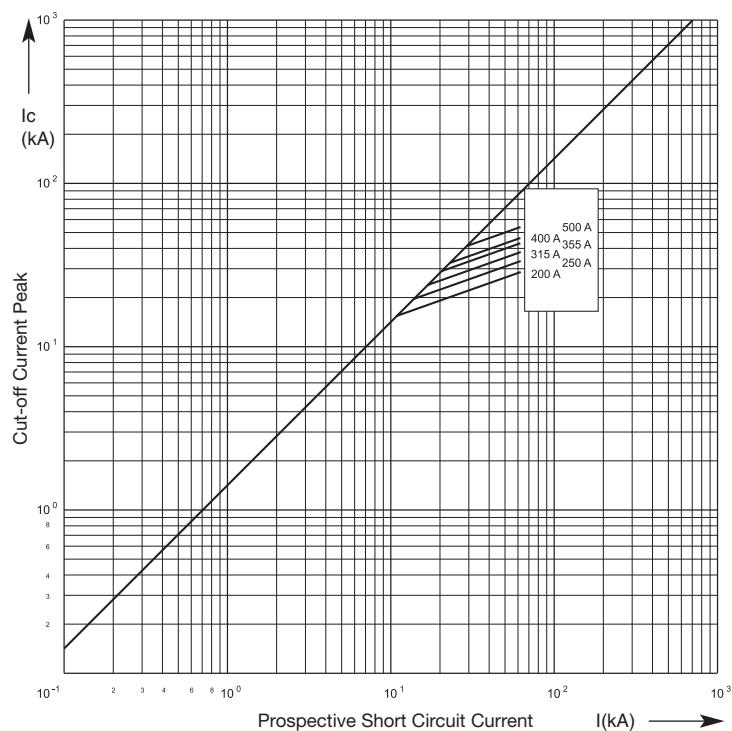
Time Current Characteristics

Back up



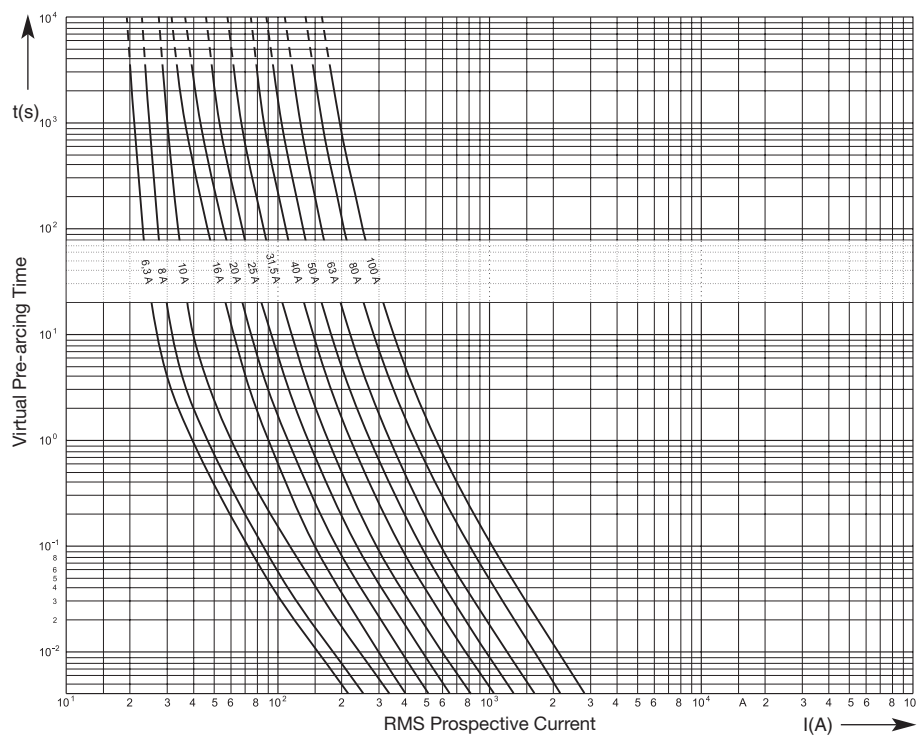
Cut Off Current Diagram

Back up



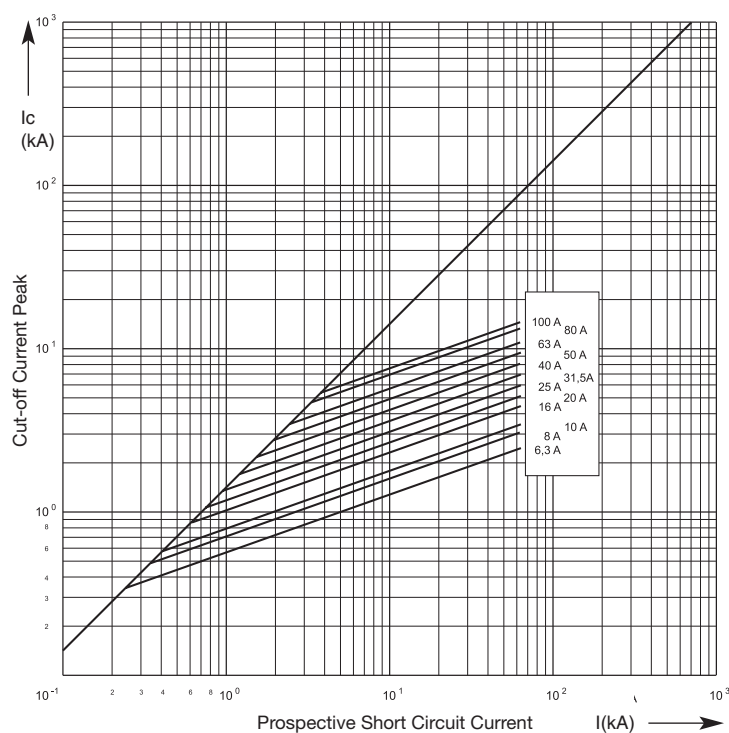
Time Current Characteristics

General Purpose



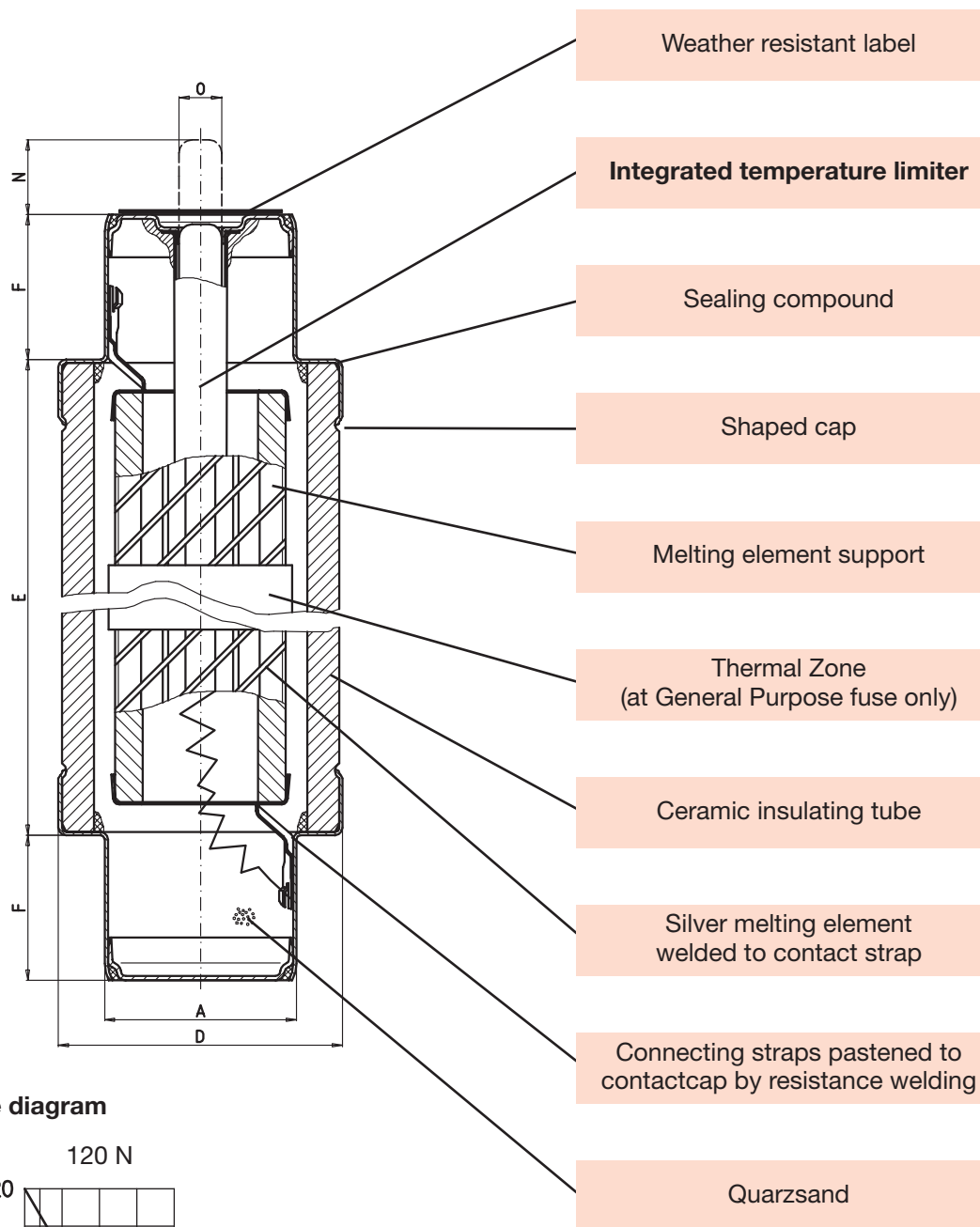
Cut Off Current Diagram

General Purpose

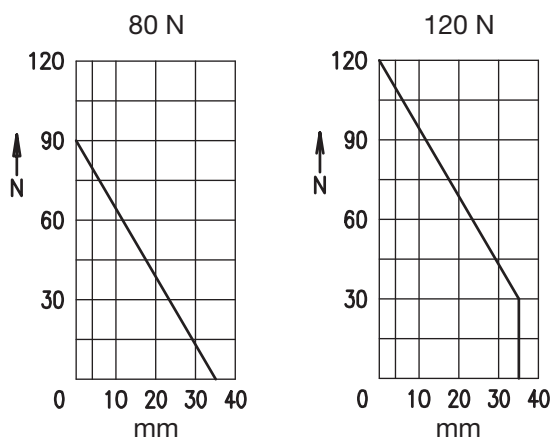


HV fuse link

Vertical Cross Section



Force / distance diagram



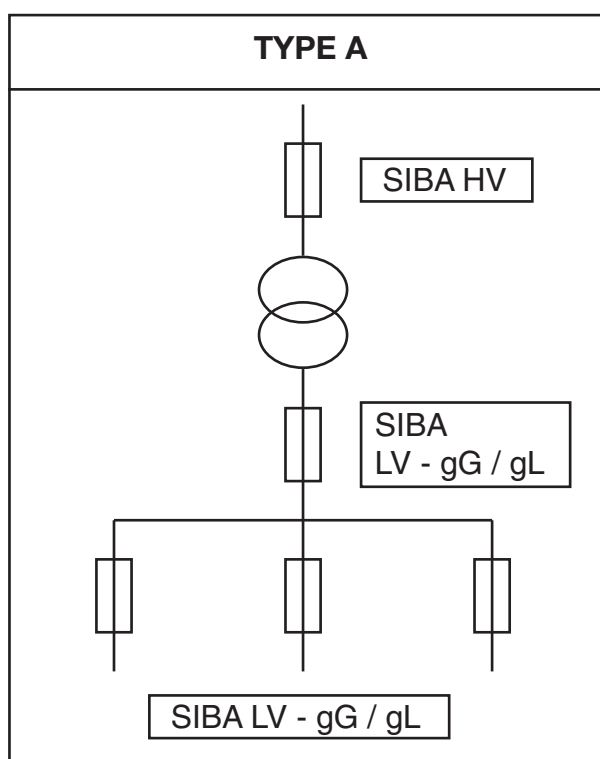
Recommendation for the protection of main transformer with HV-Fuse links DIN Standard

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	—

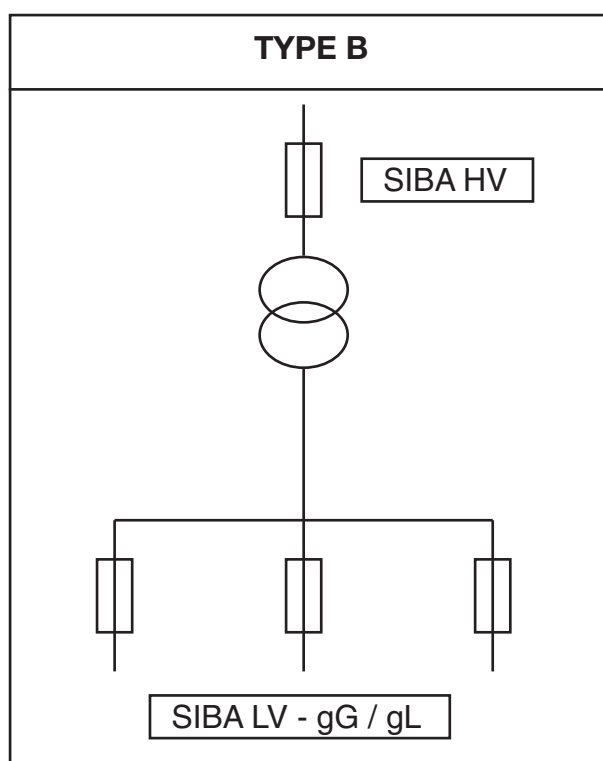
* Use of the recommended HV-Fuse links in connection with LV-fuse links of other manufacturer must be checked before installation



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

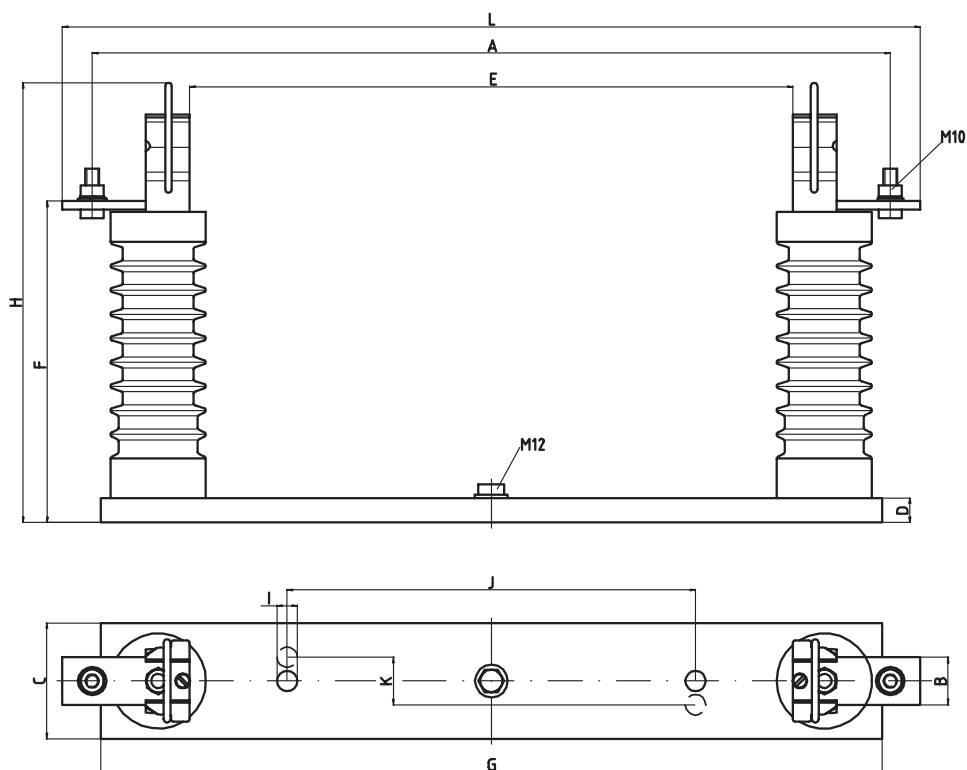
Assignment of rated currents of HV-Fuse links to DIN Standard to Capacitor rated capacities

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**

A	13.78" (350 mm)
B	1.38" (35 mm)
C	3.35" (85 mm)
D	0.70" (18 mm)
E	7.60" (193 mm)
F	6.14" (156 mm)
G	12.20" (310 mm)
H	9.53" (242 mm)
I	0.60" (15 mm)
J	2.17" (55 mm)
K	1.38" (35 mm)
L	14.96" (380 mm)

Rated Voltage **12 kV**
Part No. **31 003 02**

A	17.72" (450 mm)
B	1.38" (35 mm)
C	3.35" (85 mm)
D	0.70" (18 mm)
E	11.54" (293 mm)
F	6.14" (156 mm)
G	16.14" (410 mm)
H	9.53" (242 mm)
I	0.60" (15 mm)
J	7.10" (180 mm)
L	18.90" (480 mm)

Rated Voltage **24 kV**
Part No. **31 005 02**

A	23.62" (600 mm)
B	1.38" (35 mm)
C	3.35" (85 mm)
D	0.70" (18 mm)
E	17.44" (443 mm)
F	9.30" (236 mm)
G	22.60" (574 mm)
H	12.68" (322 mm)
I	0.60" (15 mm)
J	11.80" (300 mm)
L	24.80" (630 mm)

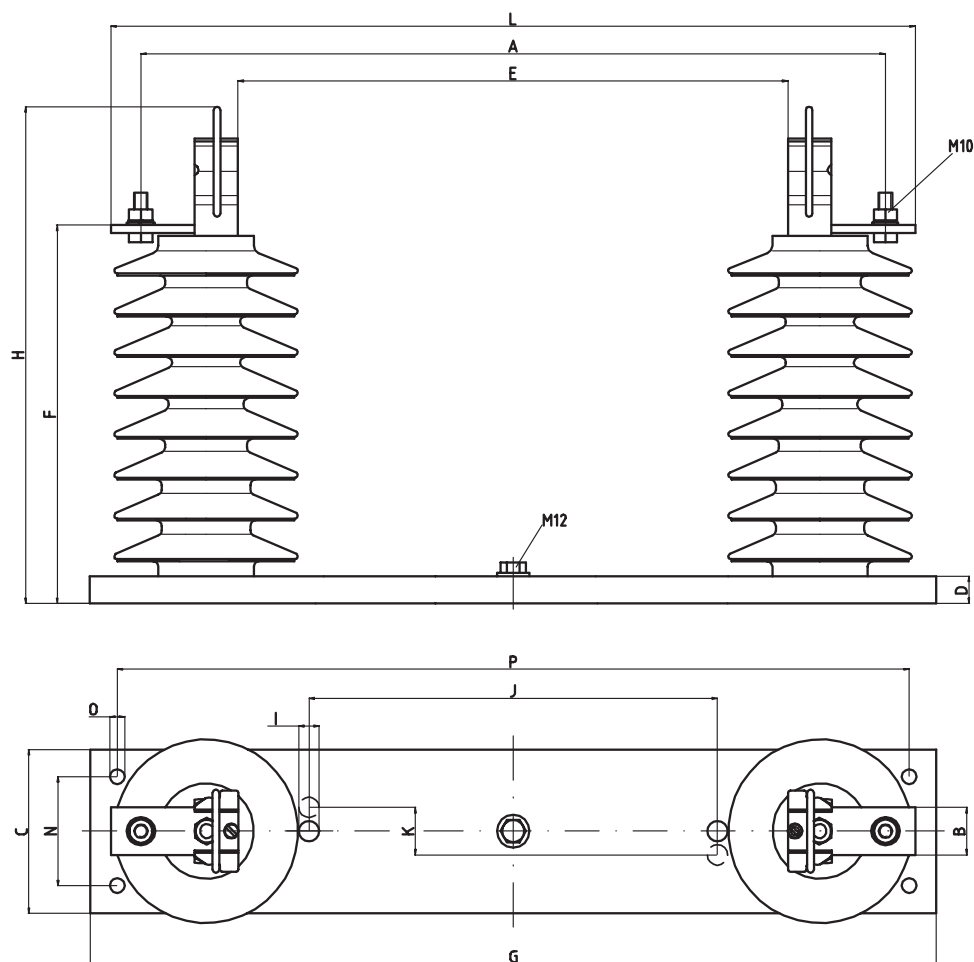
Rated Voltage **36 kV**
Part No. **31 007 02**

A	27.36" (695 mm)
B	1.38" (35 mm)
C	3.35" (85 mm)
D	0.70" (18 mm)
E	21.18" (538 mm)
F	12.83" (326 mm)
G	26.60" (676 mm)
H	16.22" (412 mm)
I	0.60" (15 mm)
J	14.96" (380 mm)
L	28.54" (725 mm)

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

A	17.72" (450 mm)
B	1.38" (35 mm)
C	3.35" (85 mm)
D	0.70" (18 mm)
E	11.54" (293 mm)
F	9.30" (236 mm)
G	16.14" (410 mm)
H	12.68" (322 mm)
I	0.60" (15 mm)
J	7.10" (180 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

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)

Rated Voltage 12 kV
Part No. 31 004 01

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)
K	1.38" (35 mm)
L	18.90" (480 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	18.50" (470 mm)

Rated Voltage 24 kV
Part No. 31 006 01

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)
K	1.38" (35 mm)
L	24.80" (630 mm)
N	3.15" (80 mm)
O	0.43" (11 mm)
P	24.40" (620 mm)

Rated Voltage 36 kV
Part No. 31 008 01

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)
K	1.38" (35 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

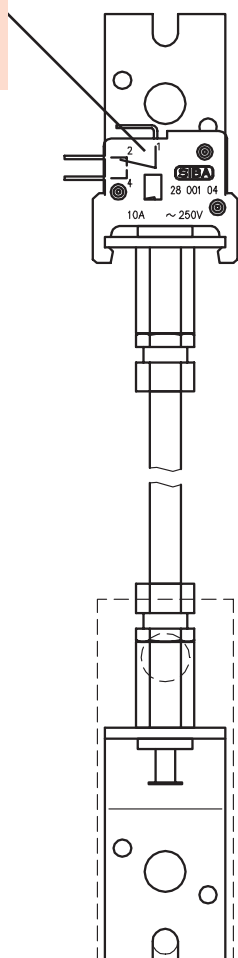
31 001 14

Microswitch

Part No. 28 001 04

250 V / 6 A

1 change over contact



Flexible
Cable

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

HV-Fuse cap

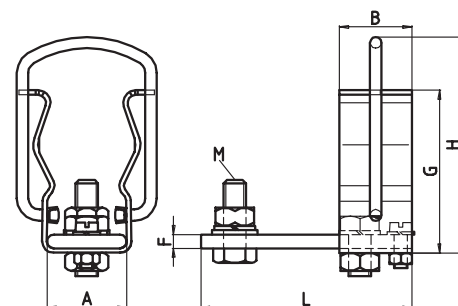
Fuse Clip

HV-Spring clip contact with connection bar

Part No.

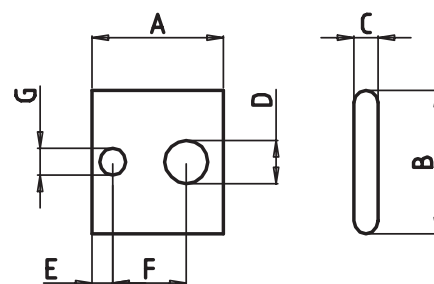
34 002 01

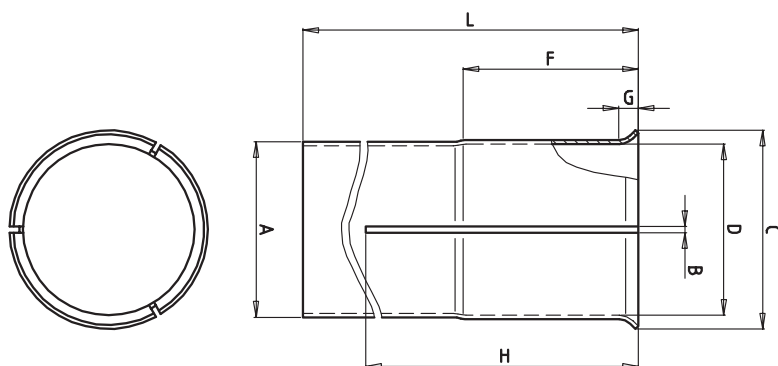
A	1.38" (35 mm)
B	1.26" (32 mm)
F	0.24" (6 mm)
G	2.80" (71.5 mm)
H	3.74" (95 mm)
L	3.66" (93 mm)
M	M 10


Spacer
Part No.

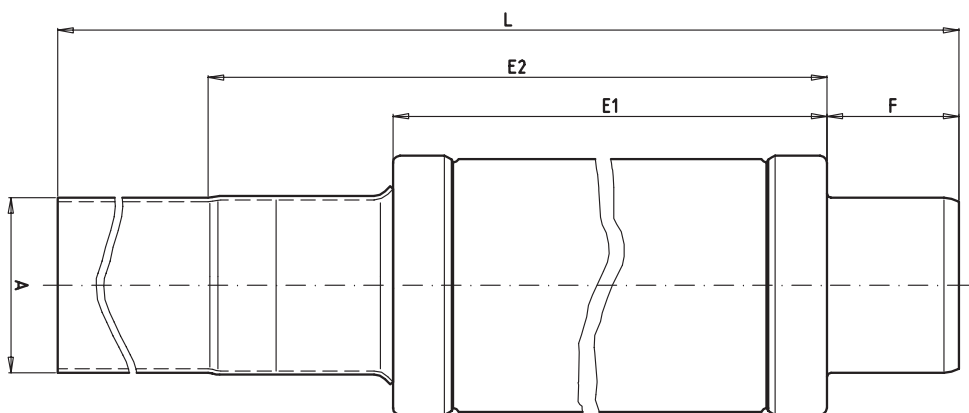
31 002 01.3

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

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

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


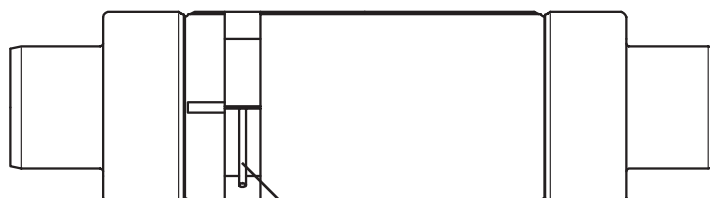
A	1.77"	(45 mm)
E1	11.50"	(292 mm)
E2	17.40"	(442 mm)
F	1.30"	(33 mm)
L	20.00"	(508 mm)

Test-Fuse

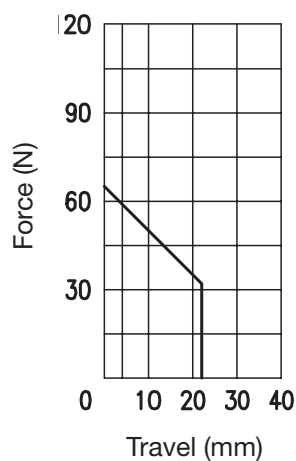
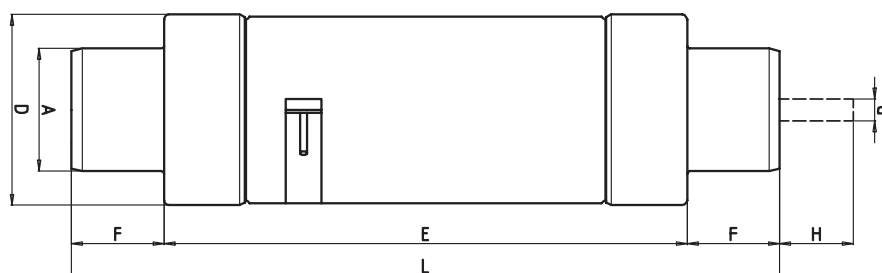
with time delayed release
 for testing the release mechanism in enclosed medium voltage switchgear

Part No.
33 010 03

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



Clamp lever
 for timer

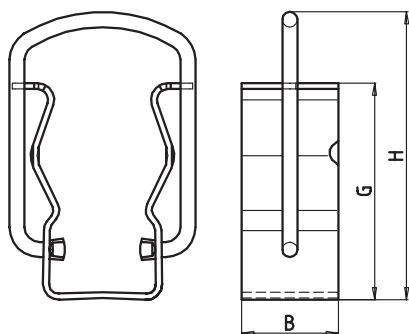


To change E an adaptor is available

from 192 mm to 292 mm **Part No.** 34 004 02

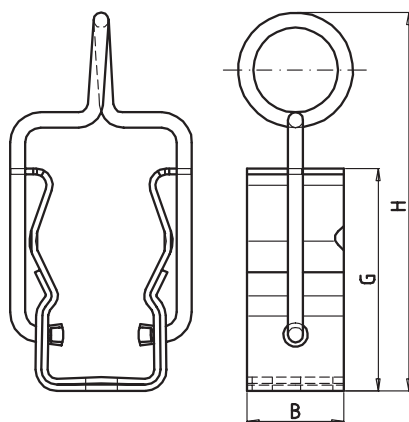
from 192 mm to 442 mm **Part No.** 34 006 02

HV-Contact clip
Rated Current
200 A

for indoor and outdoor application

Part No.
31 003 02.20

B	1.26"	(32 mm)
G	2.80"	(71.5 mm)
H	3.74"	(95 mm)

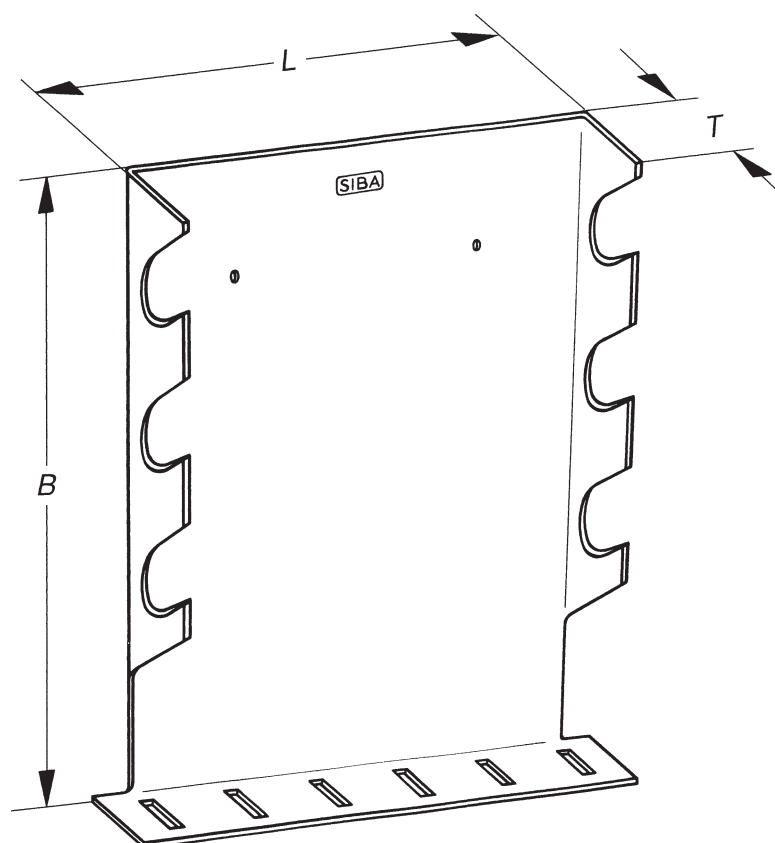
HV-Contact clip
Rated Current
> 200 A

for indoor and outdoor application

Part No.
34 001 01.20

B	1.26"	(32 mm)
G	2.90"	(73.5 mm)
H	4.92"	(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



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR & OIL INSULATED
SWITCHGEARS



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

► Introduction

Medium voltage fuses according British Standard are back-up fuses 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
- ESI 12-8

Design and construction of these fuses 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 are provided with appropriate notches to ensure small time/current-curve tolerances and low let-through currents. The arc quenching quartz sand is subject to special 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 pin and are very useful in Fuse/Switch-Combinations which comply with the requirements of IEC 60420.

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

► Fuse links for air insulated switchgear

These fuse links are fitted with a striker pin and comply with the requirements of IEC 60420.

Fuse links of this design are available in different shape and dimensions, e.g.:

- with cylindrical contact caps for fitting in spring clip contacts
- with different bolting contact armatures.

Dimensional drawings in this catalog show some of the available types. Alternative fixing arrangements are available upon request.



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR & OIL INSULATED
SWITCHGEARS

Selection Guide

Type (old BS-Code)	Rated Voltage AC kV	Length mm	Class	Part No.	Selector Guide Page	Techn. Data Page
FO 1	7.2	254	Back up / Oiltight	30 132 36	HHB 3	HHB 19
FO 2	7.2	359	Back up / Oiltight	30 234 36	HHB 3	HHB 19
FO 1	12	254	Back up / Oiltight	30 144 36	HHB 4	HHB 20
FO 2	12	359	Back up / Oiltight	30 237 36	HHB 5	HHB 20
–	15.5	254	Back up / Oiltight	30 293 36	HHB 6	HHB 21
FO 1	15.5	359	Back up / Oiltight	30 294 36	HHB 6	HHB 21
–	24	359	Back up / Oiltight	30 156 36	HHB 7	HHB 22
–	7.2	254	Back up / in Air	30 241 36	HHB 8	HHB 23
–	7.2	359	Back up / in Air	30 242 36	HHB 9	HHB 23
FA 1	7.2	254	Back up / in Air	30 135 36	HHB 8	HHB 23
FA 2	7.2	359	Back up / in Air	30 137 36	HHB 9	HHB 23
–	12	254	Back up / in Air	30 141 36	HHB 10	HHB 24
–	12	359	Back up / in Air	30 243 36	HHB 10	HHB 24
–	12	254	Back up / in Air	30 145 36	HHB 11	HHB 25
–	12	359	Back up / in Air	30 147 36	HHB 11	HHB 25
FA 3	24	565	Back up / in Air	30 244 36	HHB 12	HHB 26
FA 4	24	565	Back up / in Air	30 161 36	HHB 12	HHB 26
TA 3	7.2		Back up / in Air	30 246 36	HHB 13	HHB 27
TA 3	7.2		Back up / in Air	30 249 36	HHB 14	HHB 27
TA 3	12		Back up / in Air	30 247 36	HHB 15	HHB 28
TA 3	12		Back up / in Air	30 250 36	HHB 16	HHB 28
TA 3	24		Back up / in Air	30 248 36	HHB 17	HHB 29
TA 2	24		Back up / in Air	30 251 36	HHB 18	HHB 29



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR & OIL INSULATED
SWITCHGEARS

Type FO 1
L= 254 mm

Rated voltage
AC 7.2 kV

Class
Back up / Oiltight

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

Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 132 36	2.5	63.5	40	1.8	1	
10 A	30 132 36	2.5	63.5	40	1.8	1	
16 A	30 132 36	2.5	63.5	40	1.8	1	
20 A	30 132 36	2.5	63.5	40	1.8	1	
25 A	30 132 36	2.5	63.5	40	1.8	1	
31.5 A	30 132 36	2.5	63.5	40	1.8	1	
40 A	30 132 36	2.5	63.5	40	1.8	1	
50 A	30 132 36	2.5	63.5	40	1.8	1	
63 A	30 132 36	2.5	63.5	40	1.8	1	
80 A	30 132 36	2.5	63.5	40	1.8	1	
100 A	30 132 36	2.5	63.5	40	1.8	1	
112 A	30 132 36	2.5	63.5	40	1.8	1	

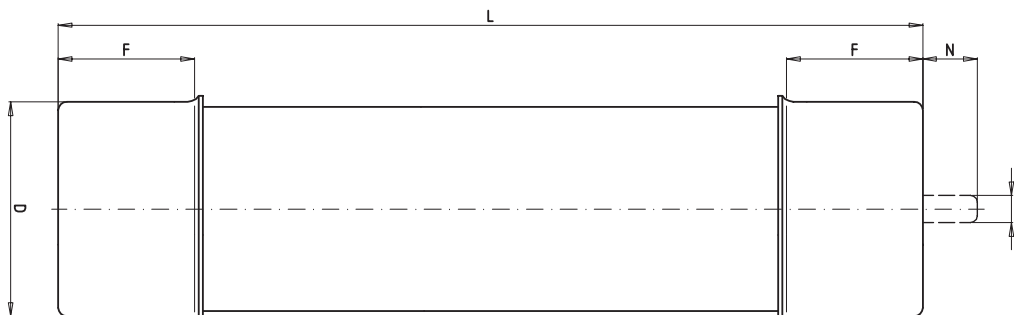
Type FO 2
L= 359 mm

Rated voltage
AC 7.2 kV

Class
Back up / Oiltight

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

Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
125 A	30 234 36	2.5	63.5	40	2.5	1	
140 A	30 234 36	2.5	63.5	40	2.5	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



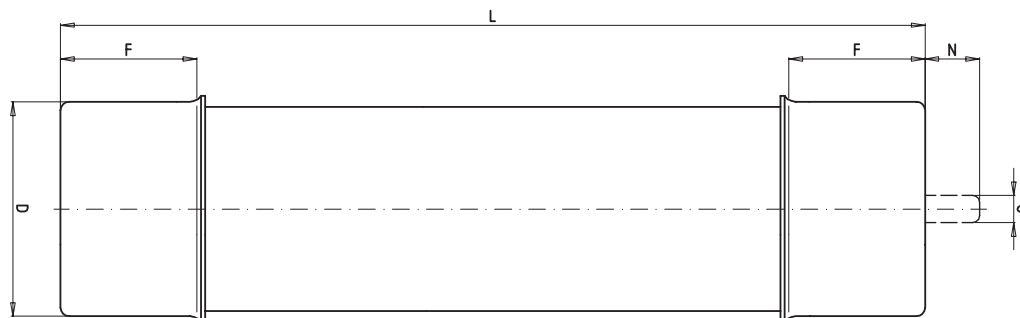
MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR & OIL INSULATED
SWITCHGEARS

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	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 144 36	2.5	63.5	40	1.8	1	
10 A	30 144 36	2.5	63.5	40	1.8	1	
16 A	30 144 36	2.5	63.5	40	1.8	1	
20 A	30 144 36	2.5	63.5	40	1.8	1	
25 A	30 144 36	2.5	63.5	40	1.8	1	
31.5 A	30 144 36	2.5	63.5	40	1.8	1	
40 A	30 144 36	2.5	63.5	40	1.8	1	
50 A	30 144 36	2.5	63.5	40	1.8	1	
63 A	30 144 36	2.5	63.5	40	1.8	1	
80 A	30 144 36	2.5	63.5	40	1.8	1	
100 A	30 144 36	2.5	63.5	40	1.8	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

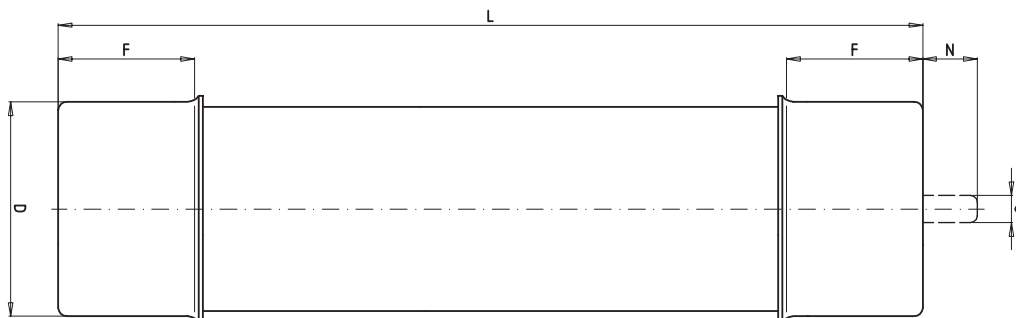


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR & OIL INSULATED
SWITCHGEARS**

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

Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 237 36	2.5	63.5	40	2.5	1	
10 A	30 237 36	2.5	63.5	40	2.5	1	
16 A	30 237 36	2.5	63.5	40	2.5	1	
20 A	30 237 36	2.5	63.5	40	2.5	1	
25 A	30 237 36	2.5	63.5	40	2.5	1	
31.5 A	30 237 36	2.5	63.5	40	2.5	1	
40 A	30 237 36	2.5	63.5	40	2.5	1	
50 A	30 237 36	2.5	63.5	40	2.5	1	
63 A	30 237 36	2.5	63.5	40	2.5	1	
80 A	30 237 36	2.5	63.5	40	2.5	1	
100 A	30 237 36	2.5	63.5	40	2.5	1	
125 A	30 237 36	2.5	63.5	40	2.5	1	
145 A	30 237 36	2.5	63.5	40	2.5	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

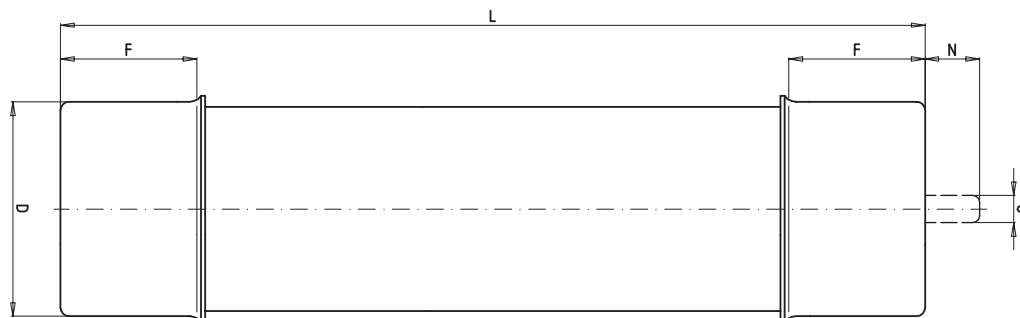
FOR AIR & OIL INSULATED
SWITCHGEARS

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	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 293 36	2.5	63.5	40	1.8	1	
10 A	30 293 36	2.5	63.5	40	1.8	1	
16 A	30 293 36	2.5	63.5	40	1.8	1	
20 A	30 293 36	2.5	63.5	40	1.8	1	
25 A	30 293 36	2.5	63.5	40	1.8	1	
31.5 A	30 293 36	2.5	63.5	40	1.8	1	
40 A	30 293 36	2.5	63.5	40	1.8	1	
50 A	30 293 36	2.5	63.5	40	1.8	1	
63 A	30 293 36	2.5	63.5	40	1.8	1	

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	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 294 36	2.5	63.5	40	2.5	1	
10 A	30 294 36	2.5	63.5	40	2.5	1	
16 A	30 294 36	2.5	63.5	40	2.5	1	
20 A	30 294 36	2.5	63.5	40	2.5	1	
25 A	30 294 36	2.5	63.5	40	2.5	1	
31.5 A	30 294 36	2.5	63.5	40	2.5	1	
40 A	30 294 36	2.5	63.5	40	2.5	1	
50 A	30 294 36	2.5	63.5	40	2.5	1	
63 A	30 294 36	2.5	63.5	40	2.5	1	
80 A	30 294 36	2.5	63.5	40	2.5	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

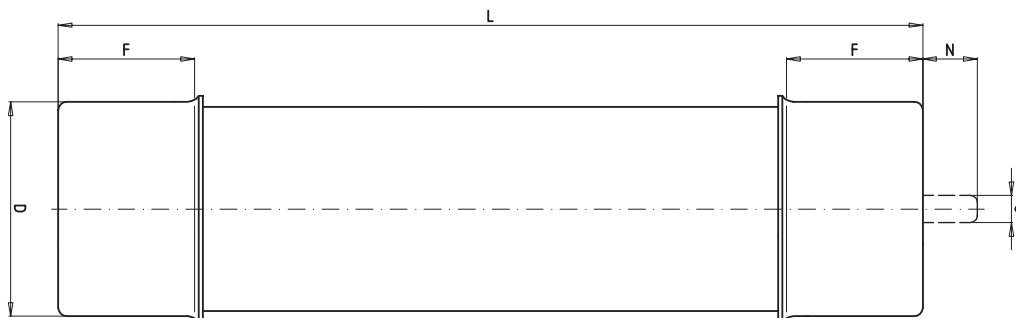


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR & OIL INSULATED
SWITCHGEARS**

Type FO 2 L= 359 mm	Rated voltage AC 24 kV	Class Back up / Oiltight	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 156 36	2.5	63.5	40	2.5	1	
10 A	30 156 36	2.5	63.5	40	2.5	1	
16 A	30 156 36	2.5	63.5	40	2.5	1	
20 A	30 156 36	2.5	63.5	40	2.5	1	
25 A	30 156 36	2.5	63.5	40	2.5	1	
31.5 A	30 156 36	2.5	63.5	40	2.5	1	
40 A	30 156 36	2.5	63.5	40	2.5	1	
50 A	30 156 36	2.5	63.5	40	2.5	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR INSULATED
SWITCHGEARS

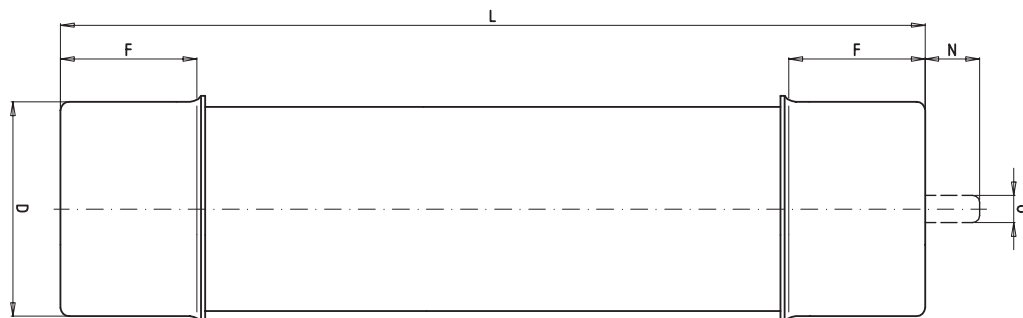
Length
L= 254 mm

Rated voltage
AC 7.2 kV

Class
Back up / in Air

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

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 241 36	2.00	51	40	2.5	1	
10 A	30 241 36	2.00	51	40	2.5	1	
16 A	30 241 36	2.00	51	40	2.5	1	
20 A	30 241 36	2.00	51	40	2.5	1	
25 A	30 241 36	2.00	51	40	2.5	1	
31.5 A	30 241 36	2.00	51	40	2.5	1	
40 A	30 241 36	2.00	51	40	2.5	1	
50 A	30 241 36	2.00	51	40	2.5	1	
63 A	30 241 36	2.00	51	40	2.5	1	
80 A	30 135 36	3.00	76	40	2.5	1	
100 A	30 135 36	3.00	76	40	2.5	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

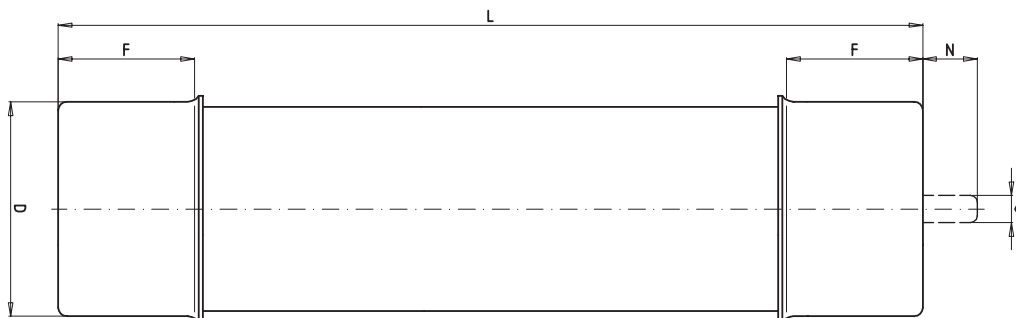


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR INSULATED
SWITCHGEARS**

Length L= 359 mm	Rated voltage AC 7.2 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 242 36	2.00	51	40	3.6	1	
10 A	30 242 36	2.00	51	40	3.6	1	
16 A	30 242 36	2.00	51	40	3.6	1	
20 A	30 242 36	2.00	51	40	3.6	1	
25 A	30 242 36	2.00	51	40	3.6	1	
31.5 A	30 242 36	2.00	51	40	3.6	1	
40 A	30 242 36	2.00	51	40	3.6	1	
50 A	30 242 36	2.00	51	40	3.6	1	
63 A	30 242 36	2.00	51	40	3.6	1	
80 A	30 242 36	3.00	51	40	3.6	1	
100 A	30 137 36	3.00	76	40	3.6	1	
125 A	30 137 36	3.00	76	40	3.6	1	
140 A	30 137 36	3.00	76	40	3.6	1	
160 A	30 137 36	3.00	76	40	3.6	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR INSULATED
SWITCHGEARS

Length
L= 254 mm

Rated voltage
AC 12 kV

Class
Back up / in Air

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

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 141 36	2.00	51	40	2.5	1	
10 A	30 141 36	2.00	51	40	2.5	1	
16 A	30 141 36	2.00	51	40	2.5	1	
20 A	30 141 36	2.00	51	40	2.5	1	
25 A	30 141 36	2.00	51	40	2.5	1	
31.5 A	30 141 36	2.00	51	40	2.5	1	
40 A	30 141 36	2.00	51	40	2.5	1	
50 A	30 141 36	2.00	51	40	2.5	1	

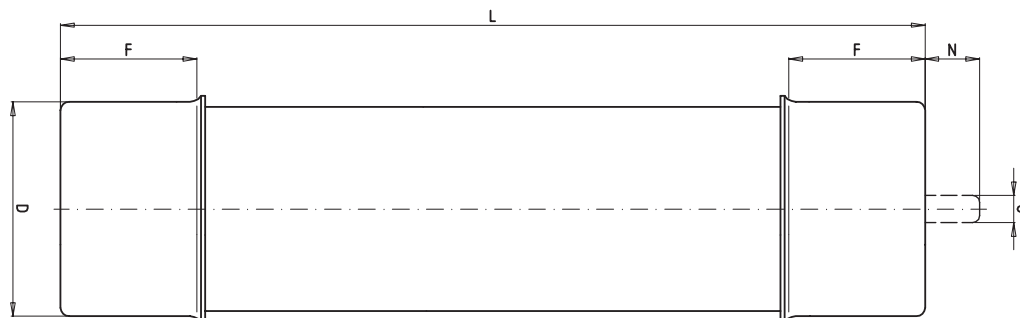
Length
L= 359 mm

Rated voltage
AC 12 kV

Class
Back up / in Air

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

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 243 36	2.00	51	40	3.6	1	
10 A	30 243 36	2.00	51	40	3.6	1	
16 A	30 243 36	2.00	51	40	3.6	1	
20 A	30 243 36	2.00	51	40	3.6	1	
25 A	30 243 36	2.00	51	40	3.6	1	
31.5 A	30 243 36	2.00	51	40	3.6	1	
40 A	30 243 36	2.00	51	40	3.6	1	
50 A	30 243 36	2.00	51	40	3.6	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES
BRITISH STANDARD

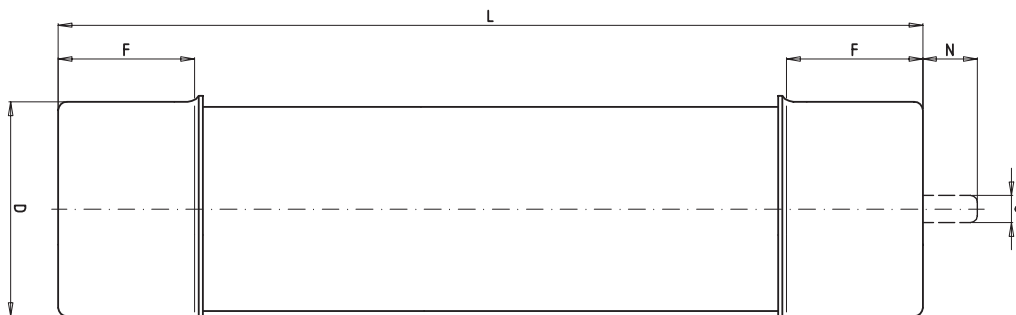
**FOR AIR INSULATED
SWITCHGEARS**

Length L= 254 mm	Rated voltage AC 12 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
40 A	30 145 36	3.00	76	40	2.5	1	
50 A	30 145 36	3.00	76	40	2.5	1	
63 A	30 145 36	3.00	76	40	2.5	1	

Length L= 359 mm	Rated voltage AC 12 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
40 A	30 147 36	3.00	76	40	3.6	1	
50 A	30 147 36	3.00	76	40	3.6	1	
63 A	30 147 36	3.00	76	40	3.6	1	
80 A	30 147 36	3.00	76	40	3.6	1	
100 A	30 147 36	3.00	76	40	3.6	1	
125 A	30 147 36	3.00	76	40	3.6	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

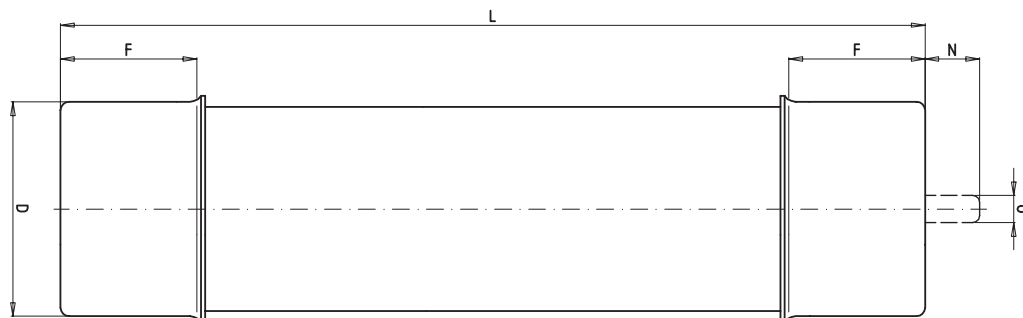
FOR AIR INSULATED
SWITCHGEARS

Length **L= 565 mm** Rated voltage **AC 24 kV** Class **Back up / in Air** Standard **BS 2692 · IEC 60282-1 · ESI 12-8**

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 244 36	2.00	51	31.5	5.6	1	
10 A	30 244 36	2.00	51	31.5	5.6	1	
16 A	30 244 36	2.00	51	31.5	5.6	1	
20 A	30 244 36	2.00	51	31.5	5.6	1	
25 A	30 244 36	2.00	51	31.5	5.6	1	
31.5 A	30 244 36	2.00	51	31.5	5.6	1	
40 A	30 244 36	2.00	51	31.5	5.6	1	

Length **L= 565 mm** Rated voltage **AC 24 kV** Class **Back up / in Air** Standard **BS 2692 · IEC 60282-1 · ESI 12-8**

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 161 36	3.00	76	31.5	5.6	1	
10 A	30 161 36	3.00	76	31.5	5.6	1	
16 A	30 161 36	3.00	76	31.5	5.6	1	
20 A	30 161 36	3.00	76	31.5	5.6	1	
25 A	30 161 36	3.00	76	31.5	5.6	1	
31.5 A	30 161 36	3.00	76	31.5	5.6	1	
40 A	30 161 36	3.00	76	31.5	5.6	1	
50 A	30 161 36	3.00	76	31.5	5.6	1	
63 A	30 161 36	3.00	76	31.5	5.6	1	
80 A	30 161 36	3.00	76	31.5	5.6	1	
100 A	30 161 36	3.00	76	31.5	5.6	1	



F	1.57" (40 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

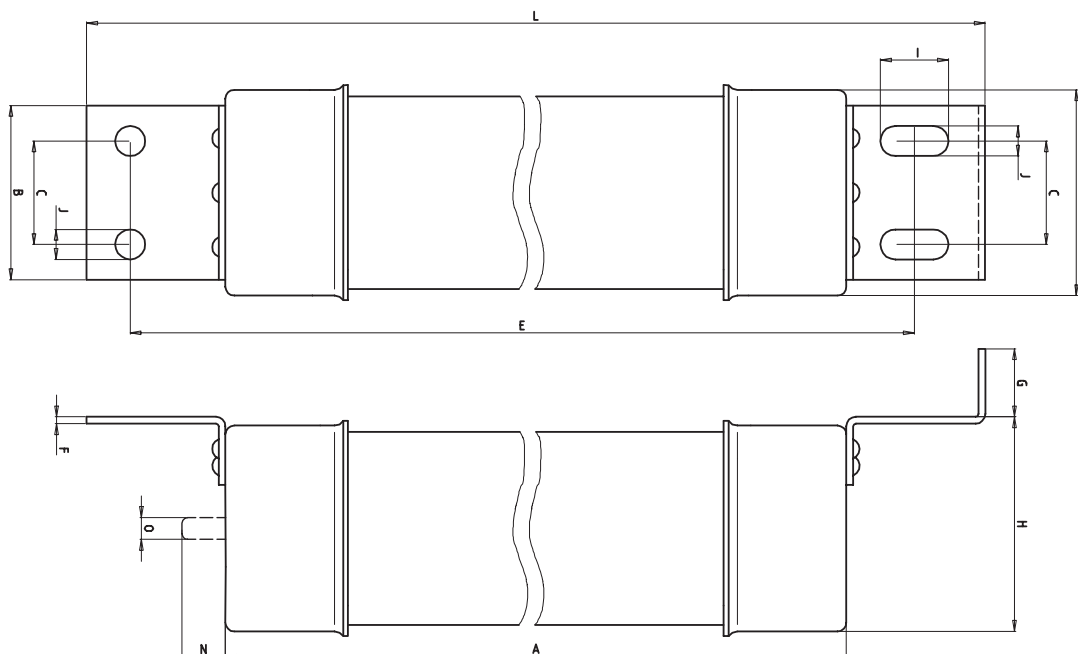


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR INSULATED
SWITCHGEARS**

Type TA 3	Rated voltage AC 7.2 kV	Class Back up / in Air	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 246 36	2.00	51	40	3.9	1	
10 A	30 246 36	2.00	51	40	3.9	1	
16 A	30 246 36	2.00	51	40	3.9	1	
20 A	30 246 36	2.00	51	40	3.9	1	
25 A	30 246 36	2.00	51	40	3.9	1	
31.5 A	30 246 36	2.00	51	40	3.9	1	
40 A	30 246 36	2.00	51	40	3.9	1	
50 A	30 246 36	2.00	51	40	3.9	1	
63 A	30 246 36	2.00	51	40	3.9	1	
80 A	30 246 36	2.00	51	40	3.9	1	



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
F	0.10" (2.5 mm)
G	0.98" (25 mm)
H	2.60" (66 mm)
I	0.98" (25 mm)
J	0.43" (11 mm)
L	18.27" (464 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR INSULATED
SWITCHGEARS

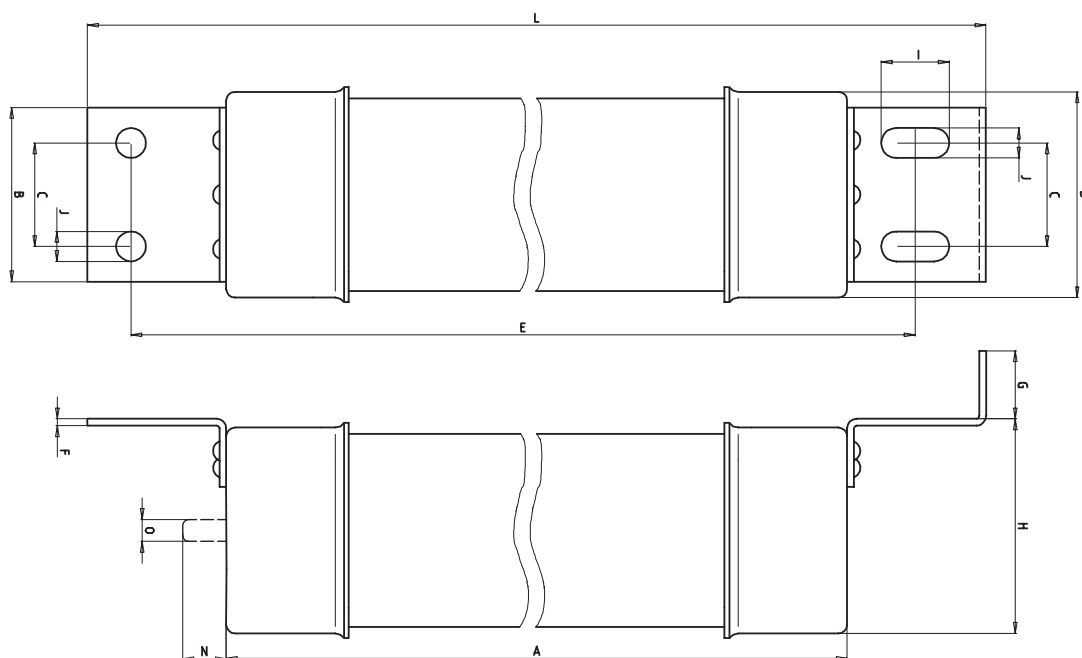
Type
TA 3

Rated voltage
AC 7.2 kV

Class
Back up

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

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
80 A	30 249 36	3.00	76	40	4.2	1	
90 A	30 249 36	3.00	76	40	4.2	1	
100 A	30 249 36	3.00	76	40	4.2	1	
125 A	30 249 36	3.00	76	40	4.2	1	
140 A	30 249 36	3.00	76	40	4.2	1	
160 A	30 249 36	3.00	76	40	4.2	1	



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
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L	18.27" (464 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

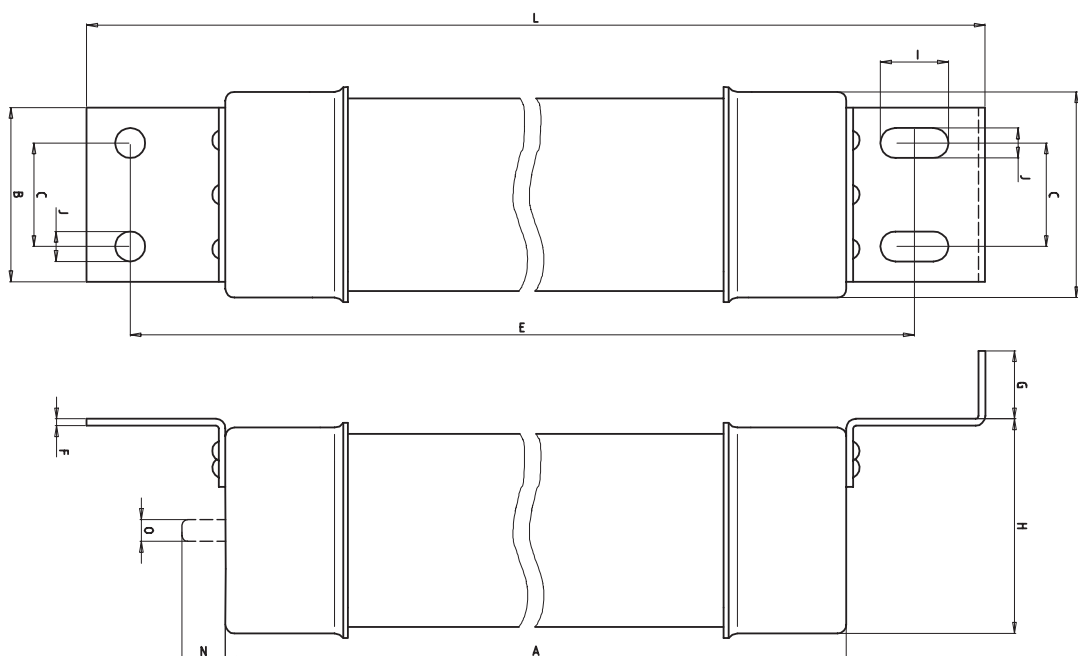


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR INSULATED
SWITCHGEARS**

Type TA 3	Rated voltage AC 12 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 247 36	2.00	51	40	3.9	1	
10 A	30 247 36	2.00	51	40	3.9	1	
16 A	30 247 36	2.00	51	40	3.9	1	
20 A	30 247 36	2.00	51	40	3.9	1	
25 A	30 247 36	2.00	51	40	3.9	1	
31.5 A	30 247 36	2.00	51	40	3.9	1	
40 A	30 247 36	2.00	51	40	3.9	1	
50 A	30 247 36	2.00	51	40	3.9	1	



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
F	0.10" (2.5 mm)
G	0.98" (25 mm)
H	2.60" (66 mm)
I	0.98" (25 mm)
J	0.43" (11 mm)
L	18.27" (464 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR INSULATED
SWITCHGEARS

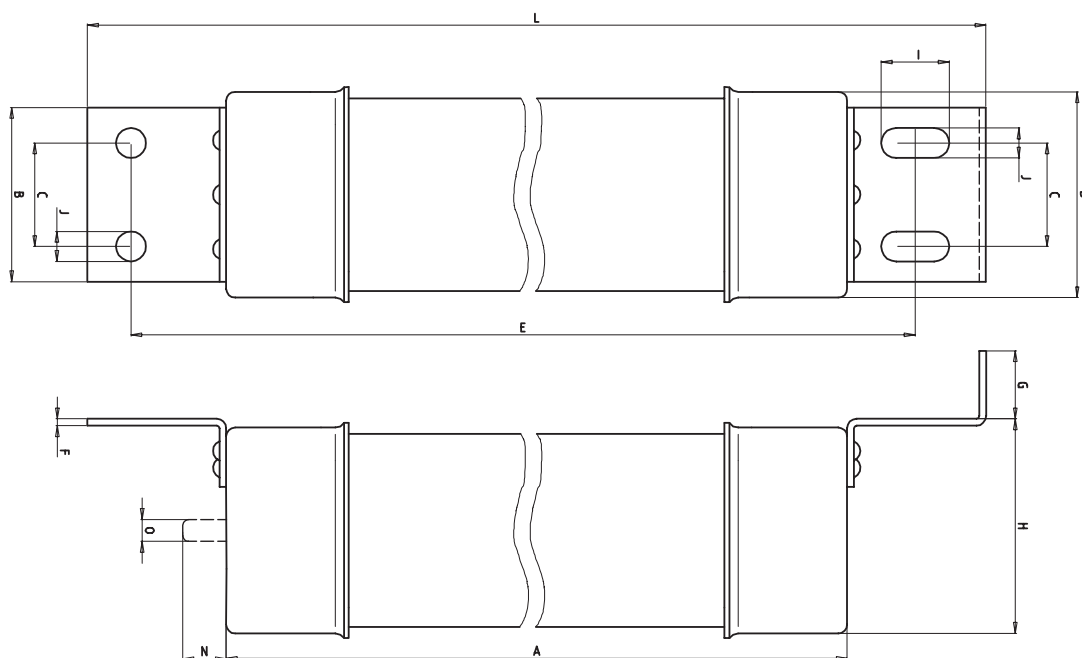
Type
TA 3

Rated voltage
AC 12 kV

Class
Back up

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

Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
50 A	30 250 36	3.00	76	40	4.2	1	
63 A	30 250 36	3.00	76	40	4.2	1	
80 A	30 250 36	3.00	76	40	4.2	1	
90 A	30 250 36	3.00	76	40	4.2	1	
100 A	30 250 36	3.00	76	40	4.2	1	
125 A	30 250 36	3.00	76	40	4.2	1	



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
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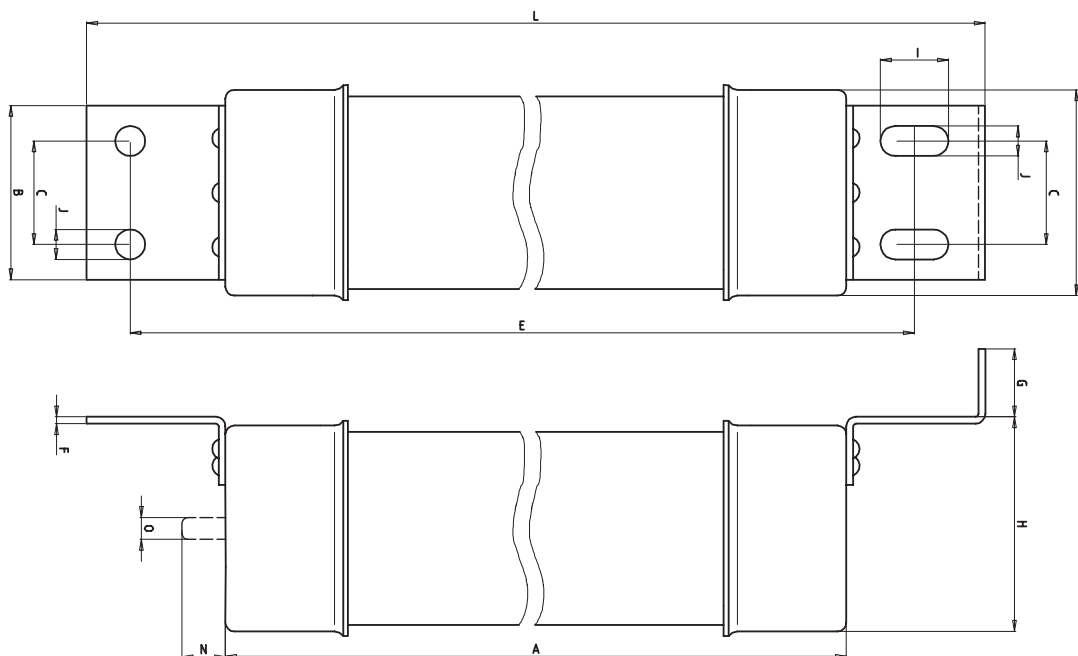


MEDIUM VOLTAGE FUSES
BRITISH STANDARD

**FOR AIR INSULATED
SWITCHGEARS**

Type TA 3	Rated voltage AC 24 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack
		inch	mm			
6.3 A	30 248 36	2.00	51	40	3.9	1
10 A	30 248 36	2.00	51	40	3.9	1
16 A	30 248 36	2.00	51	40	3.9	1
20 A	30 248 36	2.00	51	40	3.9	1
25 A	30 248 36	2.00	51	40	3.9	1
31.5 A	30 248 36	2.00	51	40	3.9	1
40 A	30 248 36	2.00	51	40	3.9	1



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
F	0.10" (2.5 mm)
G	0.98" (25 mm)
H	2.60" (66 mm)
I	0.98" (25 mm)
J	0.43" (11 mm)
L	18.27" (464 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



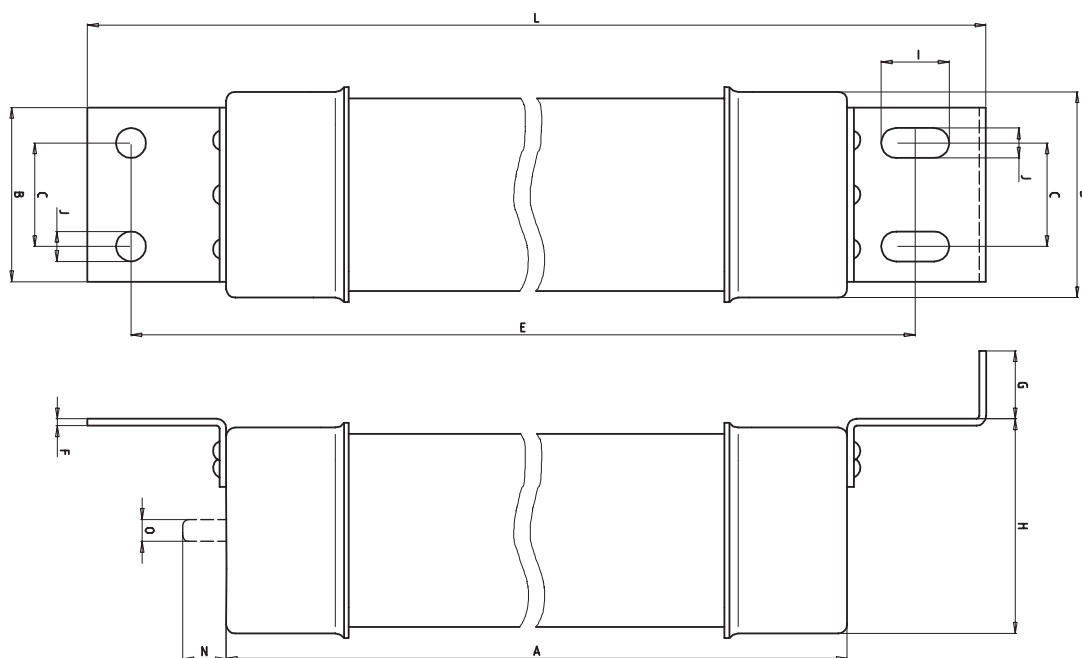
MEDIUM VOLTAGE FUSES

BRITISH STANDARD

FOR AIR INSULATED
SWITCHGEARS

Type TA 3	Rated voltage AC 24 kV	Class Back up	Standard BS 2692 · IEC 60282-1 · ESI 12-8
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Rated current	Part No.	D= Diameter		Breaking current	Weight	Pack	
		inch	mm	kA	(kg/1)		
50 A	30 251 36	3.00	76	40	4.2	1	
63 A	30 251 36	3.00	76	40	4.2	1	
80 A	30 251 36	3.00	76	40	4.2	1	



A	14.13" (359 mm)
B	2.56" (65 mm)
C	1.50" (38 mm)
E	16.50" (419 mm)
F	0.10" (2.5 mm)
G	0.98" (25 mm)
H	2.60" (66 mm)
I	0.98" (25 mm)
J	0.43" (11 mm)
L	18.27" (464 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)

Length
L= 254 mm

 Rated voltage
AC 7.2 kV

 use under oil
 oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
6.3 A	30 132 36	40	14	80	140	
10 A	30 132 36	40	50	270	450	
16 A	30 132 36	40	190	1,070	1,800	
20 A	30 132 36	40	290	1,680	2,900	
25 A	30 132 36	40	600	3,670	6,100	
31.5 A	30 132 36	40	1,000	6,000	10,000	
40 A	30 132 36	40	2,300	13,400	22,300	
50 A	30 132 36	40	2,800	21,600	36,000	
63 A	30 132 36	40	6,500	38,200	65,500	
80 A	30 132 36	40	9,900	56,500	100,000	
90 A	30 132 36	40	15,500	91,400	157,000	
100 A	30 132 36	40	22,200	127,200	218,500	
112 A	30 132 36	40	28,300	166,700	278,000	
125 A	30 132 36	40	37,100	218,500	364,200	
145 A	30 132 36	40	50,100	286,400	507,000	
160 A	30 132 36	40	68,000	386,000	677,000	

 Length
L= 359 mm

 Rated voltage
AC 7.2 kV

 use under oil
 oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
125 A	30 234 36	40	37,100	218,500	364,200	
145 A	30 234 36	40	50,100	286,400	507,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 30 AND HHB 31

Length
L= 254 mm

Rated voltage
AC 12 kV

use under oil
oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
6.3 A	30 144 36	40	14	80	140	
10 A	30 144 36	40	50	270	450	
16 A	30 144 36	40	190	1,070	1,800	
20 A	30 144 36	40	290	1,680	2,900	
25 A	30 144 36	40	600	3,670	6,100	
31.5 A	30 144 36	40	1,000	6,000	10,000	
40 A	30 144 36	40	2,300	13,400	22,300	
50 A	30 144 36	40	2,800	21,600	36,000	
63 A	30 144 36	40	6,500	38,200	65,500	
80 A	30 144 36	40	9,900	56,500	100,000	
90 A	30 144 36	40	15,500	91,400	157,000	
100 A	30 144 36	40	22,200	127,200	218,500	

Length
L= 359 mm

Rated voltage
AC 12 kV

use under oil
oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
6.3 A	30 237 36	40	14	80	140	
10 A	30 237 36	40	50	270	450	
16 A	30 237 36	40	190	1,070	1,800	
20 A	30 237 36	40	290	1,680	2,900	
25 A	30 237 36	40	600	3,670	6,100	
31.5 A	30 237 36	40	1,000	6,000	10,000	
40 A	30 237 36	40	2,300	13,400	22,300	
50 A	30 237 36	40	2,800	21,600	36,000	
63 A	30 237 36	40	6,500	38,200	65,500	
80 A	30 237 36	40	9,900	56,500	100,000	
100 A	30 237 36	40	22,200	127,200	218,500	
112 A	30 237 36	40	28,300	166,700	278,000	
125 A	30 237 36	40	37,100	218,500	364,200	
145 A	30 237 36	40	50,100	286,400	507,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 30 AND HHB 31**

Length
L= 254 mm

 Rated voltage
AC 15.5 kV

 use under oil
 oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 15.5 kV A ² s	
6.3 A	30 293 36	40	14	80	140	
10 A	30 293 36	40	50	270	450	
16 A	30 293 36	40	190	1,070	1,800	
20 A	30 293 36	40	290	1,680	2,900	
25 A	30 293 36	40	600	3,670	6,100	
31.5 A	30 293 36	40	1,000	6,000	10,000	
40 A	30 293 36	40	2,300	13,400	22,300	
50 A	30 293 36	40	2,800	21,600	36,000	
63 A	30 293 36	40	6,500	38,200	65,500	
80 A	30 293 36	40	9,900	56,500	100,000	
90 A	30 293 36	40	15,500	91,400	157,000	
100 A	30 293 36	40	22,200	127,200	218,500	

 Length
L= 359 mm

 Rated voltage
AC 15.5 kV

 use under oil
 oiltight

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 15.5 kV A ² s	
6.3 A	30 294 36	40	14	80	140	
10 A	30 294 36	40	50	270	450	
16 A	30 294 36	40	190	1,070	1,800	
20 A	30 294 36	40	290	1,680	2,900	
25 A	30 294 36	40	600	3,670	6,100	
31.5 A	30 294 36	40	1,000	6,000	10,000	
40 A	30 294 36	40	2,300	13,400	22,300	
50 A	30 294 36	40	2,800	21,600	36,000	
63 A	30 294 36	40	6,500	38,200	65,500	
80 A	30 294 36	40	9,900	56,500	100,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 30 AND HHB 31

Length
L= 359 mm

Rated voltage
AC 24 kV

**use under oil
oiltight**

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 24 kV A ² s	
6.3 A	30 156 36	40	14	80	140	
10 A	30 156 36	40	50	270	450	
16 A	30 156 36	40	190	1,070	1,800	
20 A	30 156 36	40	290	1,680	2,900	
25 A	30 156 36	40	600	3,670	6,100	
31.5 A	30 156 36	40	1,000	6,000	10,000	
40 A	30 156 36	40	2,300	13,400	22,300	
50 A	30 156 36	40	2,800	21,600	36,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 30 AND HHB 31**

Length
L= 254 mm

 Rated voltage
AC 7.2 kV
use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
6.3 A	30 241 36	40	50	100	150	
10 A	30 241 36	40	120	230	340	
16 A	30 241 36	40	270	530	800	
20 A	30 241 36	40	650	1,300	1,950	
25 A	30 241 36	40	1,160	2,400	3,500	
31.5 A	30 241 36	40	2,200	4,400	6,500	
40 A	30 241 36	40	4,900	10,000	14,800	
50 A	30 241 36	40	8,100	16,200	24,000	
63 A	30 241 36	40	16,200	32,600	48,000	
80 A	30 135 36	40	27,200	54,600	81,000	
100 A	30 135 36	40	52,900	110,000	158,000	

 Length
L= 359 mm

 Rated voltage
AC 7.2 kV
use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
6.3 A	30 242 36	40	50	100	150	
10 A	30 242 36	40	120	230	340	
16 A	30 242 36	40	270	530	800	
20 A	30 242 36	40	650	1,300	1,950	
25 A	30 242 36	40	1,160	2,400	3,500	
31.5 A	30 242 36	40	2,200	4,400	6,500	
40 A	30 242 36	40	4,900	10,000	14,800	
50 A	30 242 36	40	8,100	16,200	24,000	
63 A	30 242 36	40	16,200	32,600	48,000	
80 A	30 242 36	40	27,200	54,600	81,000	
100 A	30 137 36	40	52,900	110,000	158,000	
125 A	30 137 36	40	81,000	162,000	241,000	
140 A	30 137 36	40	100,000	200,000	300,000	
160 A	30 137 36	40	126,000	252,000	378,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33

Length
L= 254 mm

Rated voltage
AC 12 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
6.3 A	30 141 36	40	50	100	150	
10 A	30 141 36	40	120	230	340	
16 A	30 141 36	40	270	530	800	
20 A	30 141 36	40	650	1,300	1,950	
25 A	30 141 36	40	1,160	2,400	3,500	
31.5 A	30 141 36	40	2,200	4,400	6,500	
40 A	30 141 36	40	4,900	10,000	14,800	
50 A	30 141 36	40	8,100	16,200	24,000	

Length
L= 359 mm

Rated voltage
AC 12 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
6.3 A	30 243 36	40	50	100	150	
10 A	30 243 36	40	120	230	340	
16 A	30 243 36	40	270	530	800	
20 A	30 243 36	40	650	1,300	1,950	
25 A	30 243 36	40	1,160	2,400	3,500	
31.5 A	30 243 36	40	2,200	4,400	6,500	
40 A	30 243 36	40	4,900	10,000	14,800	
50 A	30 243 36	40	8,100	16,200	24,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33**

Length
L= 254 mm

 Rated voltage
AC 12 kV
use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
40 A	30 145 36	40	4,900	10,000	14,800	
50 A	30 145 36	40	8,100	16,200	24,000	
63 A	30 145 36	40	16,200	32,600	48,000	

 Length
L= 359 mm

 Rated voltage
AC 12 kV
use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
50 A	30 147 36	40	8,100	16,200	24,000	
63 A	30 147 36	40	16,200	32,600	48,000	
80 A	30 147 36	40	27,200	54,600	81,000	
100 A	30 147 36	40	52,900	110,000	158,000	
125 A	30 147 36	40	81,000	162,000	241,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33

Length
L= 565 mm

Rated voltage
AC 24 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 24 kV A ² s	
6.3 A	30 244 36	31.5	50	100	150	
10 A	30 244 36	31.5	120	230	340	
16 A	30 244 36	31.5	270	530	800	
20 A	30 244 36	31.5	650	1,300	1,950	
25 A	30 244 36	31.5	1,160	2,400	3,500	
31.5 A	30 244 36	31.5	2,200	4,400	6,500	
40 A	30 244 36	31.5	4,900	10,000	14,800	

Length
L= 565 mm

Rated voltage
AC 24 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 24 kV A ² s	
6.3 A	30 161 36	31.5	50	100	150	
10 A	30 161 36	31.5	120	230	340	
16 A	30 161 36	31.5	270	530	800	
20 A	30 161 36	31.5	650	1,300	1,950	
25 A	30 161 36	31.5	1,160	2,400	3,500	
31.5 A	30 161 36	31.5	2,200	4,400	6,500	
40 A	30 161 36	31.5	4,900	10,000	14,800	
50 A	30 161 36	31.5	8,100	16,200	24,000	
63 A	30 161 36	31.5	16,200	32,600	48,000	
80 A	30 161 36	31.5	27,200	54,600	81,000	
100 A	30 161 36	31.5	52,900	110,000	158,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33**

Type
TA 3

 Rated voltage
AC 7.2 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
6.3 A	30 246 36	40	50	100	150	
10 A	30 246 36	40	120	230	340	
16 A	30 246 36	40	270	530	800	
20 A	30 246 36	40	650	1,300	1,950	
25 A	30 246 36	40	1,160	2,400	3,500	
31.5 A	30 246 36	40	2,200	4,400	6,500	
40 A	30 246 36	40	4,900	10,000	14,800	
50 A	30 246 36	40	8,100	16,200	24,000	
63 A	30 246 36	40	16,200	32,600	48,000	
80 A	30 246 36	40	27,200	54,600	81,000	

 Type
TA 3

 Rated voltage
AC 7.2 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 3 kV A ² s	@ 7.2 kV A ² s	
80 A	30 249 36	40	27,200	54,600	81,000	
100 A	30 249 36	40	52,900	110,000	158,000	
125 A	30 249 36	40	81,000	162,000	241,000	
140 A	30 249 36	40	100,000	200,000	300,000	
160 A	30 249 36	40	126,000	252,000	378,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33

Type
TA 3

Rated voltage
AC 12 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
6.3 A	30 247 36	40	50	100	150	
10 A	30 247 36	40	120	230	340	
16 A	30 247 36	40	270	530	800	
20 A	30 247 36	40	650	1,300	1,950	
25 A	30 247 36	40	1,160	2,400	3,500	
31.5 A	30 247 36	40	2,200	4,400	6,500	
40 A	30 247 36	40	4,900	10,000	14,800	
50 A	30 247 36	40	8,100	16,200	24,000	

Type
TA 3

Rated voltage
AC 12 kV

use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 6 kV A ² s	@ 12 kV A ² s	
50 A	30 250 36	40	8,100	16,200	24,000	
63 A	30 250 36	40	16,200	32,600	48,000	
80 A	30 250 36	40	27,200	54,600	81,000	
100 A	30 250 36	40	52,900	110,000	158,000	
125 A	30 250 36	40	81,000	162,000	241,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33**

Type
TA 3

 Rated voltage
AC 24 kV

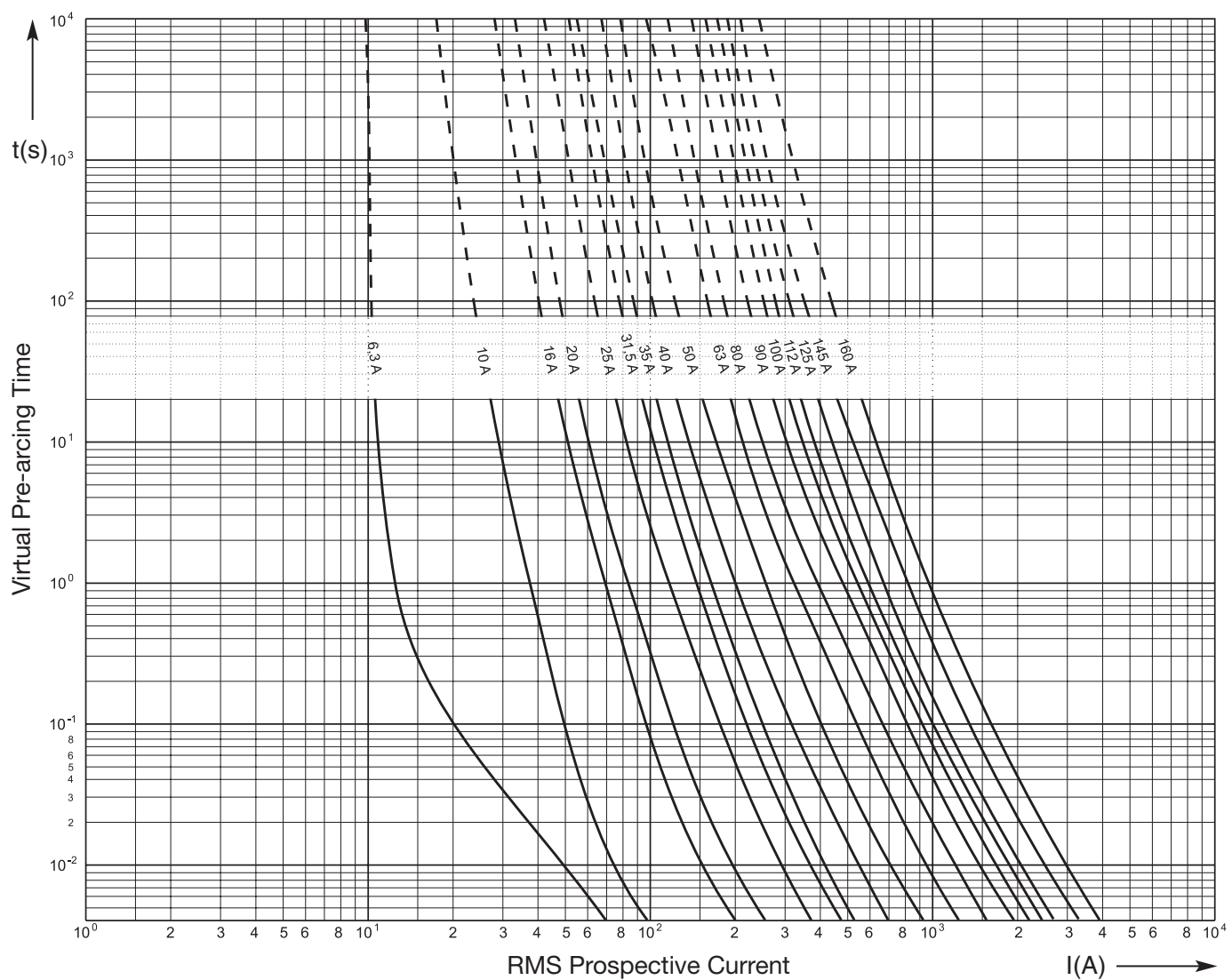
use in air

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t value		
				@ 10 kV A ² s	@ 24 kV A ² s	
6.3 A	30 248 36	40	50	100	150	
10 A	30 248 36	40	120	230	340	
16 A	30 248 36	40	270	530	800	
20 A	30 248 36	40	650	1,300	1,950	
25 A	30 248 36	40	1,160	2,400	3,500	
31.5 A	30 248 36	40	2,200	4,400	6,500	
40 A	30 248 36	40	4,900	10,000	14,800	
50 A	30 251 36	40	8,100	16,200	24,000	
63 A	30 251 36	40	16,200	32,600	48,000	
80 A	30 251 36	40	27,200	54,600	81,000	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHB 32 AND HHB 33

Time Current Characteristics

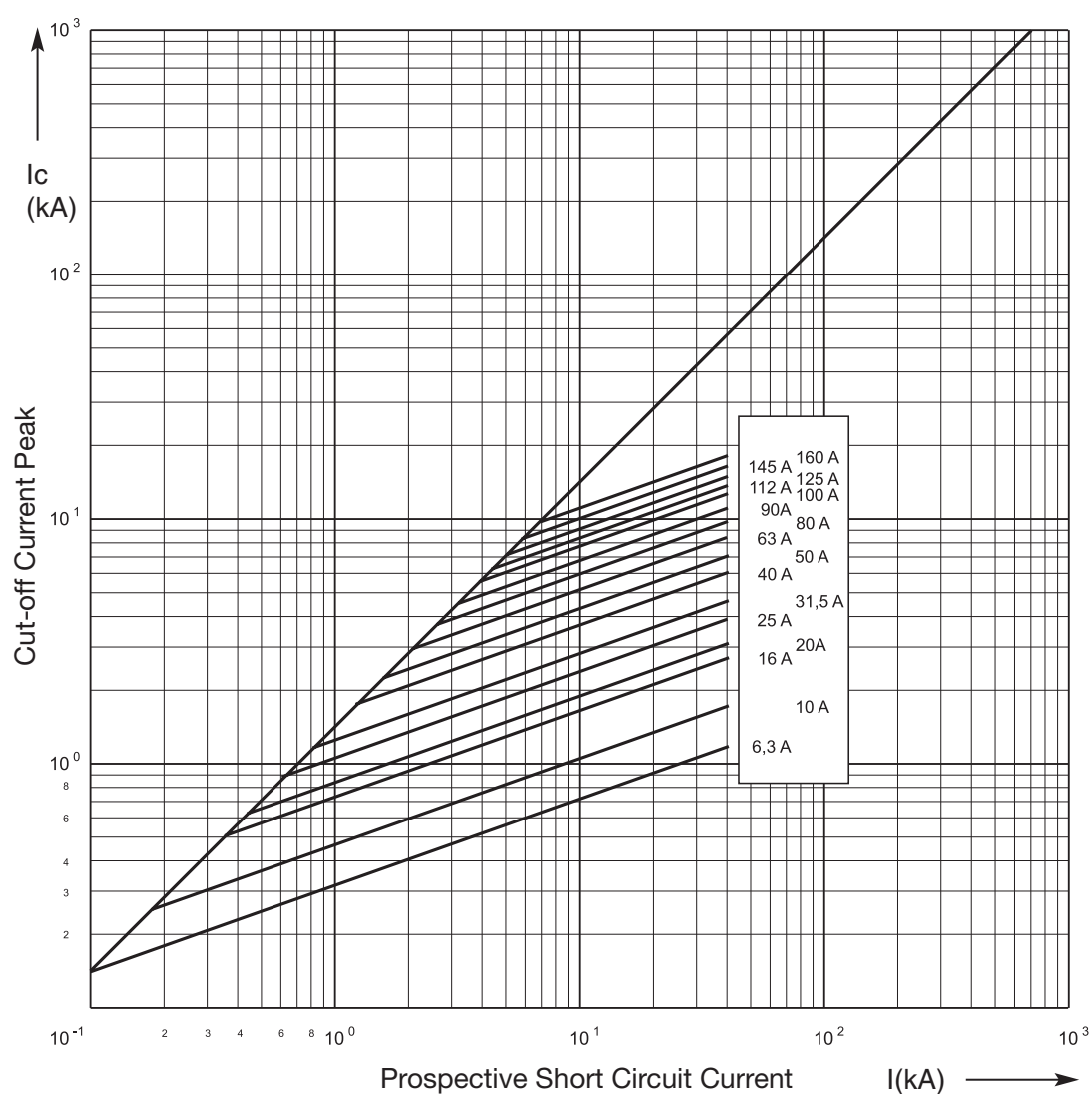
use under oil



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

Cut Off Current Diagram

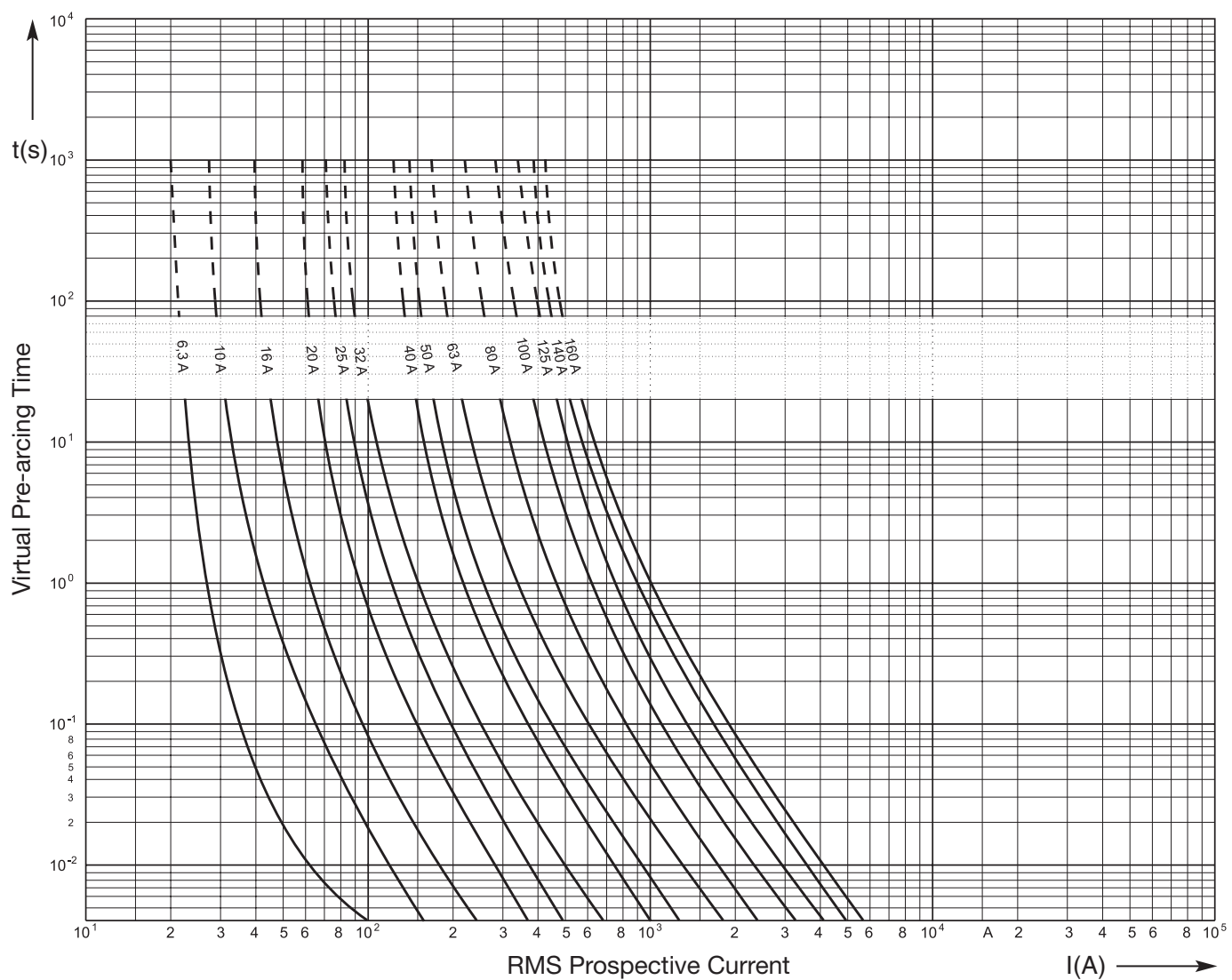
use under oil



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

Time Current Characteristics

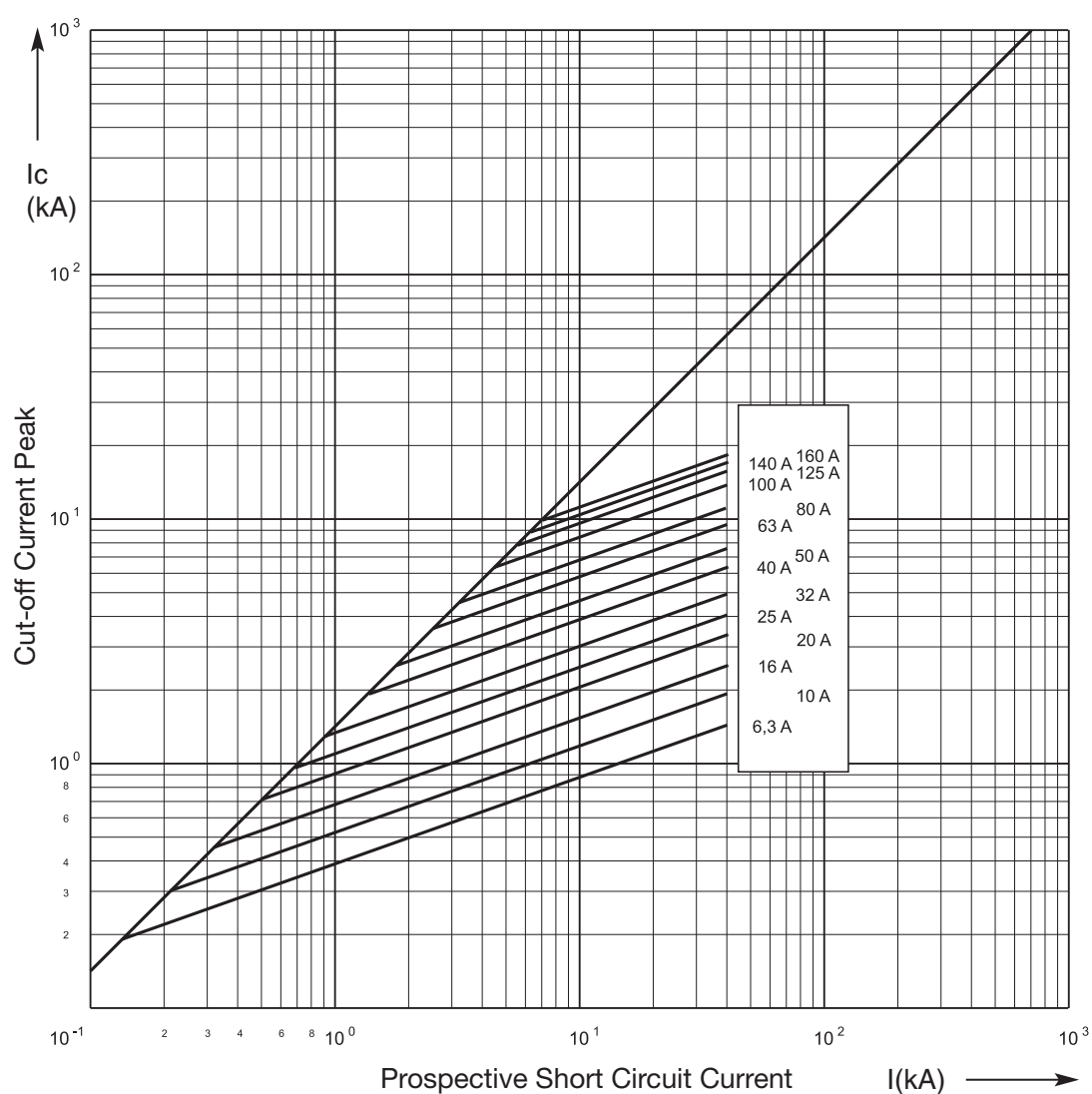
use in air



Applicable for all fuse links
shown on pages HHB 8 - HHB 18

Cut Off Current Diagram

use in air



Applicable for all fuse links
 shown on pages HHB 8 - HHB 18

MEDIUM VOLTAGE FUSES

FRENCH STANDARD

FOR
 AIR & GAS INSULATED SWITCHGEARS
 OUTDOOR SWITCHGEARS



Introduction

High-Voltage fuse-links of size 55 x 520 mm are suitable for the protection of power transformers used in energy distribution. Usually they are used for indoor application, outdoor use is possible. In case of a short circuit the fuse will interrupt fault currents between five times the fuse rated current and the rated breaking current.

Standards: IEC 60282-1
 NFC 64210

Design and construction

The fuse tubes are made of high grade ceramic and are brown glazed inside and outside. The contact caps are of electrolytic copper and silver plated. For the fuse elements pure silver is used. The melting elements are wound on a star shaped ceramic support.

For arc quenching the fuses are filled with quartz sand of certain grain size.

The fuses are available without an indicator or with an temperature limiting striker pin.

Selection of fuse

High-Voltage fuse-links of size 55 x 520 mm are back-up fuses. Values for fuse rated current / minimum breaking current as well as rated breaking current are given in the technical schedule. For back-up fuses the minimum breaking current has to be observed which is the smallest current which the fuse can normally interrupt.

For selection of the correct fuse rated current for a certain transformer size, please refer to the recommendation list, on page HHF 6.

MEDIUM VOLTAGE FUSES

FRENCH STANDARD

FOR
AIR & GAS INSULATED SWITCHGEARS
OUTDOOR SWITCHGEARS



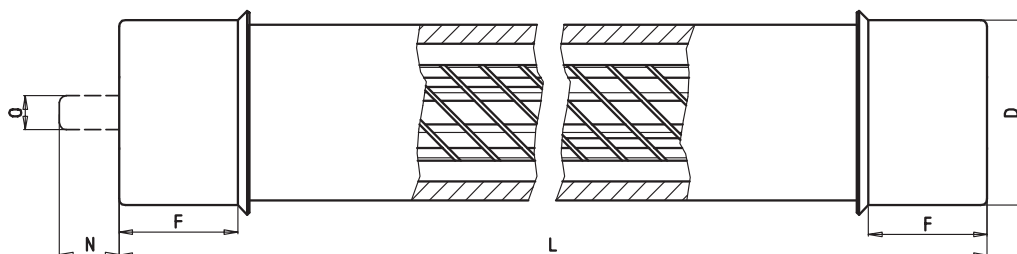
Rated voltage
AC 24 kV

Class
Back up

Standard
NFC 64210 · IEC 60282-1

Rated current	Part No. without indicator	Part No. with striker pin	Breaking current kA	Weight (kg/1)	Pack	
6.3 A	30 258 11	30 258 13	63	6	3	
10 A	30 258 11	30 258 13	63	6	3	
16 A	30 258 11	30 258 13	63	6	3	
32 A	30 258 11	30 258 13	63	6	3	
43 A	30 258 11	30 258 13	63	6	3	
63 A	30 258 11	30 258 13	63	6	3	

D	2.17" (55 mm)
F	1.57" (40 mm)
L	20.47" (520 mm)
N	1.38" (35 mm)
O	0.40" (10 mm)



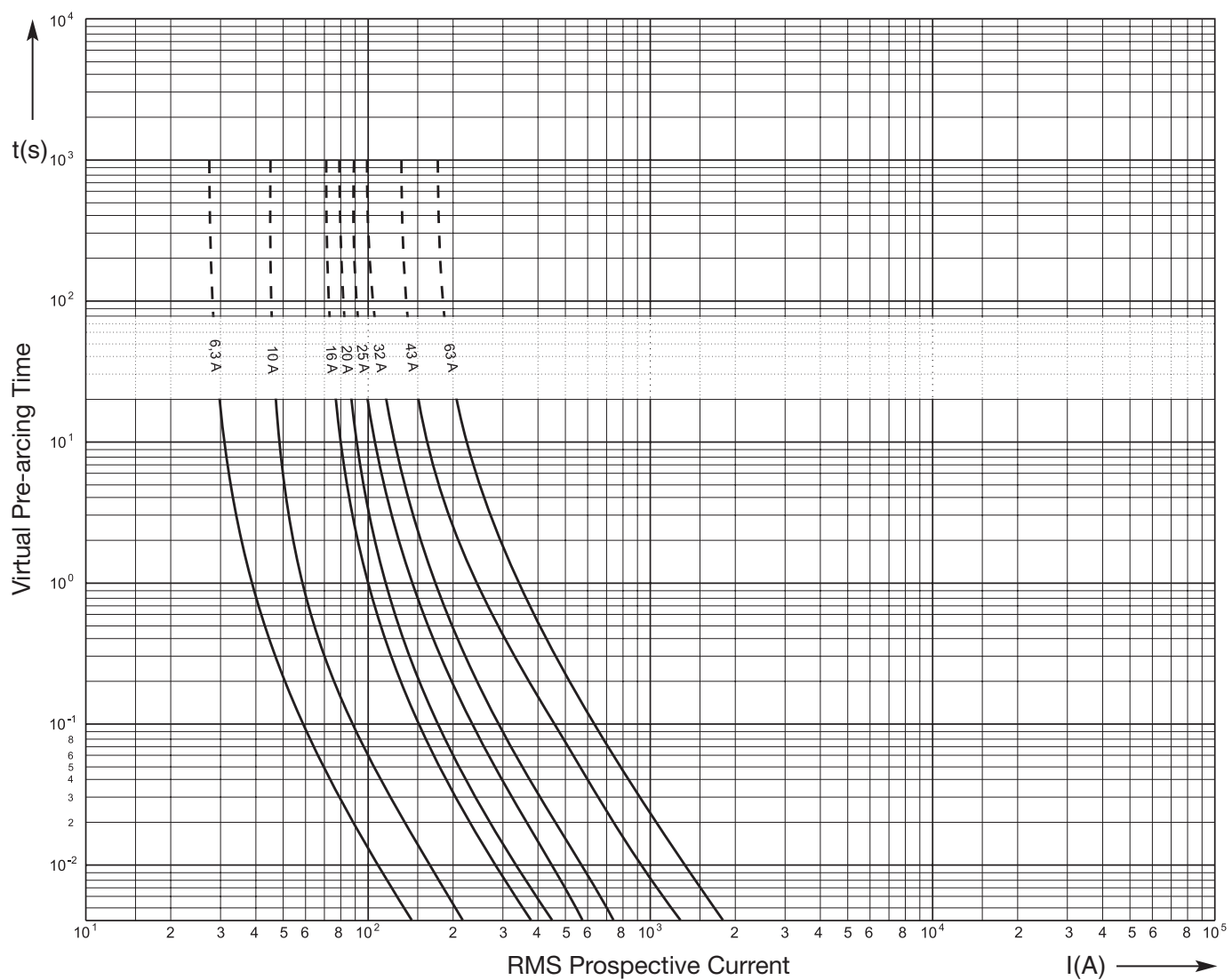
Rated voltage
AC 24 kV

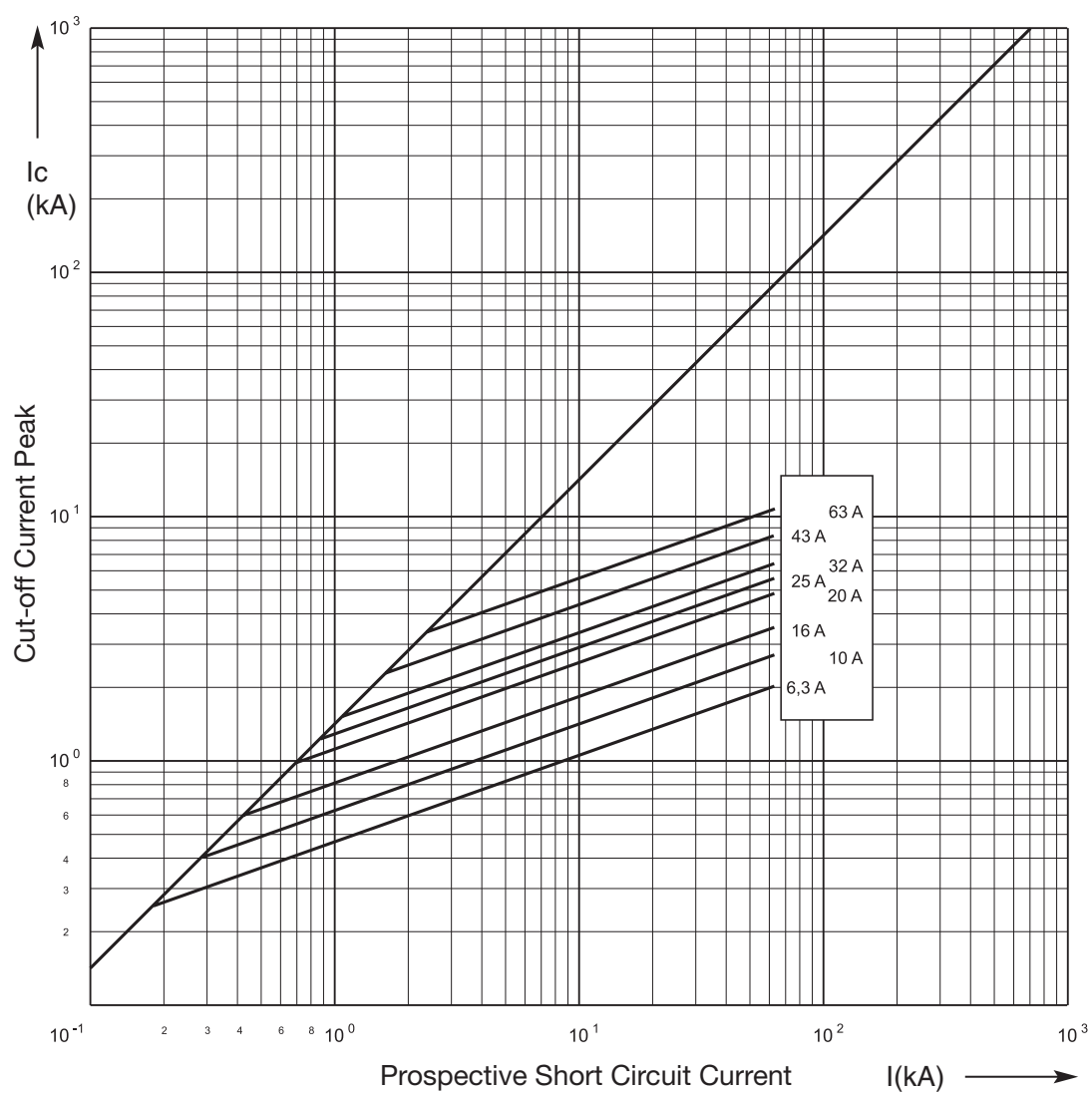
Class
Back up

Rated current A	Part No. without indicator	Part No. with striker pin	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value at 24 kV A ² s	
6.3	30 258 11	30 258 13	63	61	390	
10	30 258 11	30 258 13	63	154	1,100	
16	30 258 11	30 258 13	63	350	2,500	
32	30 258 11	30 258 13	63	2,200	16,000	
43	30 258 11	30 258 13	63	4,900	35,000	
63	30 258 11	30 258 13	63	10,600	74,000	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHF 4 AND HHF 5**

Time Current Characteristics



Cut Off Current Diagram

Recommendation for protection of main transformer

Rated Voltage kV	Transformer rated capacity kVA							
	50	100	160	250	400	630	1000	
10	6.3	16	32	32	63	63	-	
15	6.3	16	16	16	43	43	63	
20	6.3	6.3	16	16	43	43	43	

NORTH AMERICAN STYLE



Amp. ratings: 6.3 - 250 A

- ▶ Standards: IEC 60 282-1 · IEC 60 549
- ▶ High interrupting rating 63 kA
- ▶ Characteristic following capacitor protection needs for back up protection
- ▶ Suitable for direct fitting onto capacitor bushing
- ▶ Cartridge type current limiting
- ▶ Special mounting brackets available on request



Selection Guide

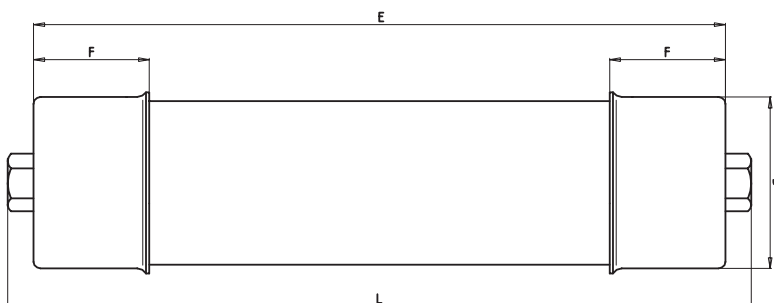
Thread	Rated Voltage AC kV	Diameter mm	Class	Part No.	Selector Guide Page	Techn. Data Page
1/2" UNC	4.8	63.5	Back up	30 349 21	HHC 3	HHC 9
1/2" UNC	4.8	76	Back up	30 350 21	HHC 3	HHC 9
1/2" UNC	4.8	76	Back up	30 351 21	HHC 3	HHC 9
1/2" UNC	7.2	63.5	Back up	30 352 21	HHC 4	HHC 9
1/2" UNC	7.2	76	Back up	30 353 21	HHC 4	HHC 9
1/2" UNC	15.5	63.5	Back up	30 354 21	HHC 5	HHC 10
M16	4.8	63.5	Back up	30 356 21	HHC 6	HHC 10
M16	4.8	76	Back up	30 357 21	HHC 6	HHC 10
M16	4.8	76	Back up	30 358 21	HHC 6	HHC 10
M16	7.2	63.5	Back up	30 359 21	HHC 7	HHC 11
M16	7.2	76	Back up	30 360 21	HHC 7	HHC 11
M16	15.5	63.5	Back up	30 361 21	HHC 8	HHC 11



MEDIUM VOLTAGE FUSES FOR CAPACITORS NORTH AMERICAN STYLE

Rated voltage AC 4.8 kV	Class Back up	thread 1/2" UNC	Standard IEC 60 282-1 · IEC 60 549
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Rated current	Part No.	D= Diameter		Rated breaking capacity kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 349 21	2.5	63.5	63	1.8	1	
10 A	30 349 21	2.5	63.5	63	1.8	1	
16 A	30 349 21	2.5	63.5	63	1.8	1	
20 A	30 349 21	2.5	63.5	63	1.8	1	
25 A	30 349 21	2.5	63.5	63	1.8	1	
31.5 A	30 349 21	2.5	63.5	63	1.8	1	
40 A	30 349 21	2.5	63.5	63	1.8	1	
50 A	30 349 21	2.5	63.5	63	1.8	1	
63 A	30 349 21	2.5	63.5	63	1.8	1	
80 A	30 349 21	2.5	63.5	63	1.8	1	
100 A	30 349 21	2.5	63.5	63	1.8	1	
125 A	30 350 21	2.99	76	63	2.5	1	
160 A	30 350 21	2.99	76	63	2.5	1	
200 A	30 351 21	2.99	76	63	3.6	1	
250 A	30 351 21	2.99	76	63	3.6	1	



30 349 21/30 350 21

E	10.00" (254 mm)
L	10.75" (273 mm)
F	1.57" (40 mm)

30 351 21

E	14.13" (359 mm)
L	14.88" (378 mm)
F	1.57" (40 mm)



MEDIUM VOLTAGE FUSES FOR CAPACITORS

NORTH AMERICAN STYLE

Rated voltage
AC 7.2 kV

Class
Back up

thread
1/2" UNC

Standard
IEC 60 282-1 · IEC 60 549

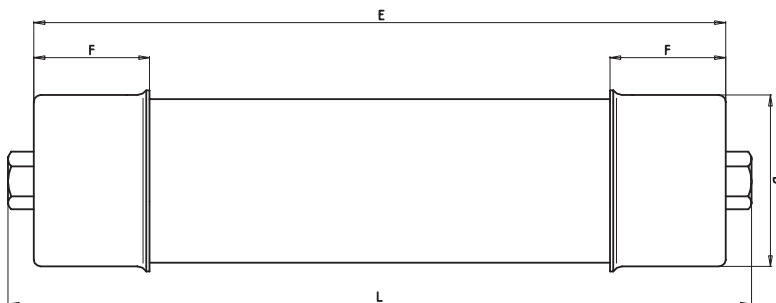
Rated current	Part No.	D= Diameter		Rated breaking capacity	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 352 21	2.5	63.5	63	1.8	1	
10 A	30 352 21	2.5	63.5	63	1.8	1	
16 A	30 352 21	2.5	63.5	63	1.8	1	
20 A	30 352 21	2.5	63.5	63	1.8	1	
25 A	30 352 21	2.5	63.5	63	1.8	1	
31.5 A	30 352 21	2.5	63.5	63	1.8	1	
40 A	30 352 21	2.5	63.5	63	1.8	1	
50 A	30 352 21	2.5	63.5	63	1.8	1	
63 A	30 352 21	2.5	63.5	63	1.8	1	
80 A	30 352 21	2.5	63.5	63	1.8	1	
100 A	30 352 21	2.5	63.5	63	1.8	1	
125 A	30 353 21	2.99	76	63	3.6	1	
160 A	30 353 21	2.99	76	63	3.6	1	
200 A	30 353 21	2.99	76	63	3.6	1	

30 352 21

E	10.00" (254 mm)
L	10.75" (273 mm)
F	1.57" (40 mm)

30 353 21

E	14.13" (359 mm)
L	14.88" (378 mm)
F	1.57" (40 mm)





MEDIUM VOLTAGE FUSES FOR CAPACITORS NORTH AMERICAN STYLE

Rated voltage AC 15.5 kV	Class Back up	thread 1/2" UNC	Standard IEC 60 282-1 · IEC 60 549
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Rated current	Part No.	D= Diameter		Rated breaking capacity kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 354 21	2.5	63.5	63	2.5	1	
10 A	30 354 21	2.5	63.5	63	2.5	1	
16 A	30 354 21	2.5	63.5	63	2.5	1	
20 A	30 354 21	2.5	63.5	63	2.5	1	
25 A	30 354 21	2.5	63.5	63	2.5	1	
31.5 A	30 354 21	2.5	63.5	63	2.5	1	
40 A	30 354 21	2.5	63.5	63	2.5	1	
50 A	30 354 21	2.5	63.5	63	2.5	1	
63 A	30 354 21	2.5	63.5	63	2.5	1	
80 A	30 354 21	2.5	63.5	63	2.5	1	
100 A	30 354 21	2.5	63.5	63	2.5	1	



E	14.13" (359 mm)
L	14.88" (378 mm)
F	1.57" (40 mm)



MEDIUM VOLTAGE FUSES FOR CAPACITORS

NORTH AMERICAN STYLE

Rated voltage
AC 4.8 kV

Class
Back up

thread
M16

Standard
IEC 60 282-1 · IEC 60 549

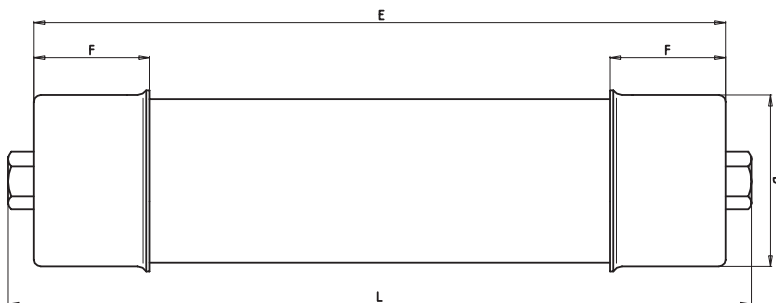
Rated current	Part No.	D= Diameter		Rated breaking capacity	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 356 21	2.5	63.5	63	1.8	1	
10 A	30 356 21	2.5	63.5	63	1.8	1	
16 A	30 356 21	2.5	63.5	63	1.8	1	
20 A	30 356 21	2.5	63.5	63	1.8	1	
25 A	30 356 21	2.5	63.5	63	1.8	1	
31.5 A	30 356 21	2.5	63.5	63	1.8	1	
40 A	30 356 21	2.5	63.5	63	1.8	1	
50 A	30 356 21	2.5	63.5	63	1.8	1	
63 A	30 356 21	2.5	63.5	63	1.8	1	
80 A	30 356 21	2.5	63.5	63	1.8	1	
100 A	30 356 21	2.5	63.5	63	1.8	1	
125 A	30 357 21	2.99	76	63	2.5	1	
160 A	30 357 21	2.99	76	63	2.5	1	
200 A	30 358 21	2.99	76	63	3.6	1	
250 A	30 358 21	2.99	76	63	3.6	1	

30 356 21/30 357 21

E	10.00" (254 mm)
L	10.75" (273 mm)
F	1.57" (40 mm)

30 358 21

E	14.13" (359 mm)
L	14.88" (378 mm)
F	1.57" (40 mm)

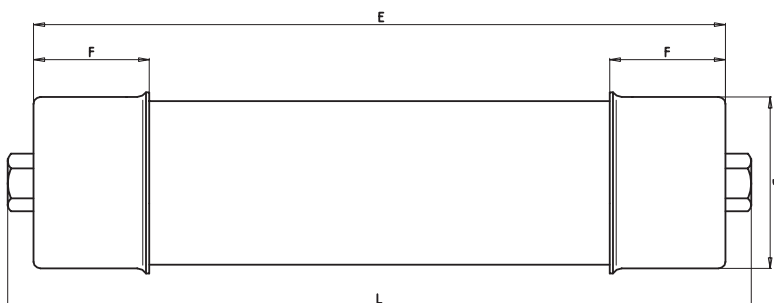




MEDIUM VOLTAGE FUSES FOR CAPACITORS NORTH AMERICAN STYLE

Rated voltage AC 7.2 kV	Class Back up	thread M16	Standard IEC 60 282-1 · IEC 60 549
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Rated current	Part No.	D= Diameter		Rated breaking capacity kA	Weight (kg/1)	Pack	
		inch	mm				
6.3 A	30 359 21	2.5	63.5	63	1.8	1	
10 A	30 359 21	2.5	63.5	63	1.8	1	
16 A	30 359 21	2.5	63.5	63	1.8	1	
20 A	30 359 21	2.5	63.5	63	1.8	1	
25 A	30 359 21	2.5	63.5	63	1.8	1	
31.5 A	30 359 21	2.5	63.5	63	1.8	1	
40 A	30 359 21	2.5	63.5	63	1.8	1	
50 A	30 359 21	2.5	63.5	63	1.8	1	
63 A	30 359 21	2.5	63.5	63	1.8	1	
80 A	30 359 21	2.5	63.5	63	1.8	1	
100 A	30 359 21	2.5	63.5	63	1.8	1	
125 A	30 360 21	2.99	76	63	2.5	1	
160 A	30 360 21	2.99	76	63	2.5	1	
200 A	30 360 21	2.99	76	63	2.5	1	



30 359 21

E	10.00" (254 mm)
L	10.75" (273 mm)
F	1.57" (40 mm)

30 360 21

L1	14.13" (359 mm)
L2	14.88" (378 mm)
F	1.57" (40 mm)



MEDIUM VOLTAGE FUSES FOR CAPACITORS

NORTH AMERICAN STYLE

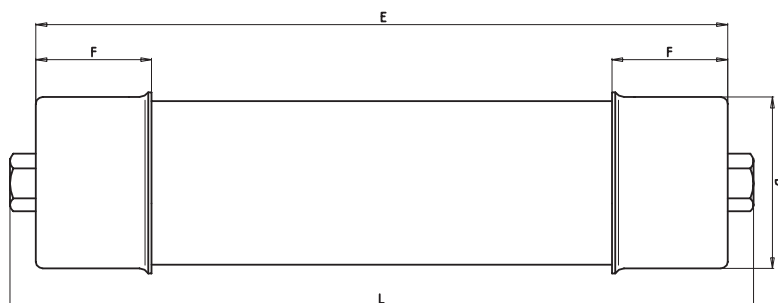
Rated voltage
AC 15.5 kV

Class
Back up

thread
M16

Standard
IEC 60 282-1 · IEC 60 549

Rated current	Part No.	D= Diameter		Rated breaking capacity	Weight	Pack	
		inch	mm	kA	(kg/1)		
6.3 A	30 361 21	2.5	63.5	63	2.5	1	
10 A	30 361 21	2.5	63.5	63	2.5	1	
16 A	30 361 21	2.5	63.5	63	2.5	1	
20 A	30 361 21	2.5	63.5	63	2.5	1	
25 A	30 361 21	2.5	63.5	63	2.5	1	
31.5 A	30 361 21	2.5	63.5	63	2.5	1	
40 A	30 361 21	2.5	63.5	63	2.5	1	
50 A	30 361 21	2.5	63.5	63	2.5	1	
63 A	30 361 21	2.5	63.5	63	2.5	1	
80 A	30 361 21	2.5	63.5	63	2.5	1	
100 A	30 361 21	2.5	63.5	63	2.5	1	



E	14.13" (359 mm)
L	14.88" (378 mm)
F	1.57" (40 mm)

Rated voltage
AC 4.8 kV

 Class
Back up

 thread
1/2" UNC

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 349 21	63	45	330	11	
10 A	30 349 21	63	75	500	19	
16 A	30 349 21	63	250	1,800	13	
20 A	30 349 21	63	640	4,300	14	
25 A	30 349 21	63	1050	6,700	16	
31.5 A	30 349 21	63	1700	10,800	20	
40 A	30 349 21	63	2900	17,100	26	
50 A	30 349 21	63	5700	29,700	30	
63 A	30 349 21	63	10,700	59,400	37	
80 A	30 349 21	63	21,000	126,000	42	
100 A	30 349 21	63	33,000	189,000	55	
125 A	30 350 21	63	47,000	351,000	78	
160 A	30 350 21	63	90,000	513,000	93	
200 A	30 351 21	63	230,000	571,000	123	
250 A	30 351 21	63	371,000	892,000	161	

 Rated voltage
AC 7.2 kV

 Class
Back up

 thread
1/2" UNC

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 352 21	63	45	330	16	
10 A	30 352 21	63	75	500	22	
16 A	30 352 21	63	250	1,800	19	
20 A	30 352 21	63	640	4,300	21	
25 A	30 352 21	63	1050	6,700	24	
31.5 A	30 352 21	63	1700	10,800	30	
40 A	30 352 21	63	2900	17,100	39	
50 A	30 352 21	63	5700	29,700	45	
63 A	30 352 21	63	10,700	59,400	55	
80 A	30 352 21	63	21,000	126,000	63	
100 A	30 352 21	63	33,000	189,000	82	
125 A	30 353 21	63	47,000	351,000	117	
160 A	30 353 21	63	90,000	513,000	139	
200 A	30 353 21	63	230,000	571,000	154	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGE HHC 12

Rated voltage
AC 15.5 kV

Class
Back up

thread
1/2" UNC

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 354 21	63	45	330	21	
10 A	30 354 21	63	75	500	38	
16 A	30 354 21	63	250	1,800	37	
20 A	30 354 21	63	640	4,300	40	
25 A	30 354 21	63	1050	6,700	56	
31.5 A	30 354 21	63	1700	10,800	65	
40 A	30 354 21	63	2900	17,100	84	
50 A	30 354 21	63	5700	29,700	101	
63 A	30 354 21	63	10,700	59,400	106	
80 A	30 354 21	63	21,000	126,000	137	
100 A	30 354 21	63	33,000	189,000	182	

Rated voltage
AC 4.8 kV

Class
Back up

thread
M16

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 349 21	63	45	330	11	
10 A	30 349 21	63	75	500	19	
16 A	30 349 21	63	250	1,800	13	
20 A	30 349 21	63	640	4,300	14	
25 A	30 349 21	63	1050	6,700	16	
31.5 A	30 349 21	63	1700	10,800	20	
40 A	30 349 21	63	2900	17,100	26	
50 A	30 349 21	63	5700	29,700	30	
63 A	30 349 21	63	10,700	59,400	37	
80 A	30 349 21	63	21,000	126,000	42	
100 A	30 349 21	63	33,000	189,000	55	
125 A	30 350 21	63	47,000	351,000	78	
160 A	30 350 21	63	90,000	513,000	93	
200 A	30 351 21	63	230,000	571,000	123	
250 A	30 351 21	63	371,000	892,000	161	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGE HHC 12**

Rated voltage
AC 7.2 kV

Class
Back up

thread
M16

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 352 21	63	45	330	16	
10 A	30 352 21	63	75	500	22	
16 A	30 352 21	63	250	1,800	19	
20 A	30 352 21	63	640	4,300	21	
25 A	30 352 21	63	1050	6,700	24	
31.5 A	30 352 21	63	1700	10,800	30	
40 A	30 352 21	63	2900	17,100	39	
50 A	30 352 21	63	5700	29,700	45	
63 A	30 352 21	63	10,700	59,400	55	
80 A	30 352 21	63	21,000	126,000	63	
100 A	30 352 21	63	33,000	189,000	82	
125 A	30 353 21	63	47,000	351,000	117	
160 A	30 353 21	63	90,000	513,000	139	
200 A	30 353 21	63	230,000	571,000	154	

Rated voltage
AC 15.5 kV

Class
Back up

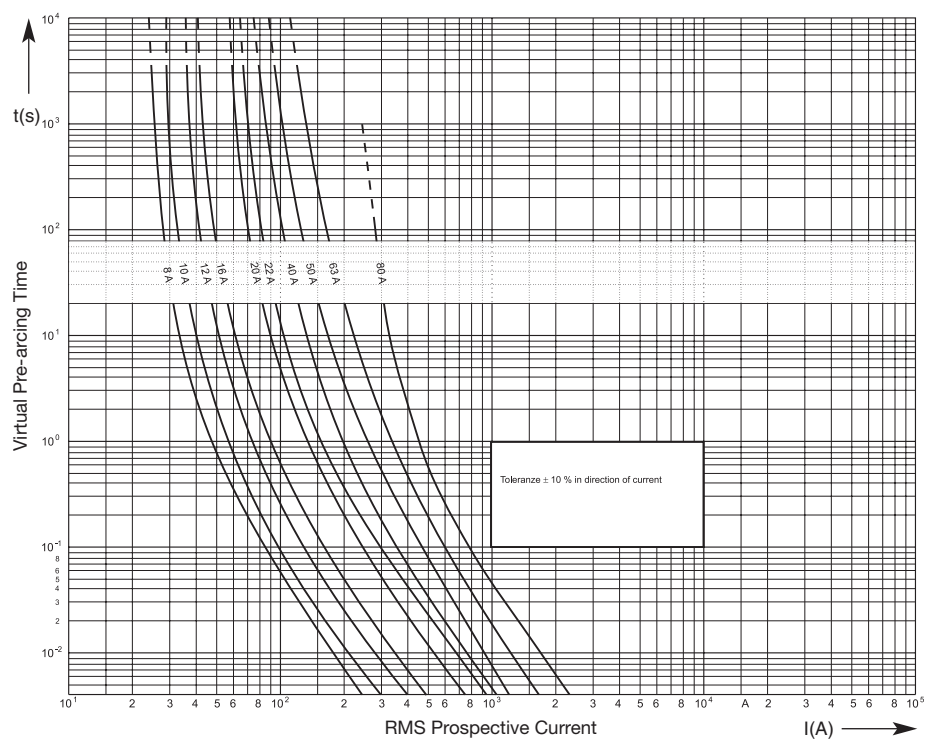
thread
M16

Rated current	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
6.3 A	30 354 21	63	45	330	21	
10 A	30 354 21	63	75	500	38	
16 A	30 354 21	63	250	1,800	37	
20 A	30 354 21	63	640	4,300	40	
25 A	30 354 21	63	1050	6,700	56	
31.5 A	30 354 21	63	1700	10,800	65	
40 A	30 354 21	63	2900	17,100	84	
50 A	30 354 21	63	5700	29,700	101	
63 A	30 354 21	63	10,700	59,400	106	
80 A	30 354 21	63	21,000	126,000	137	
100 A	30 354 21	63	33,000	189,000	182	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGE HHC 12**

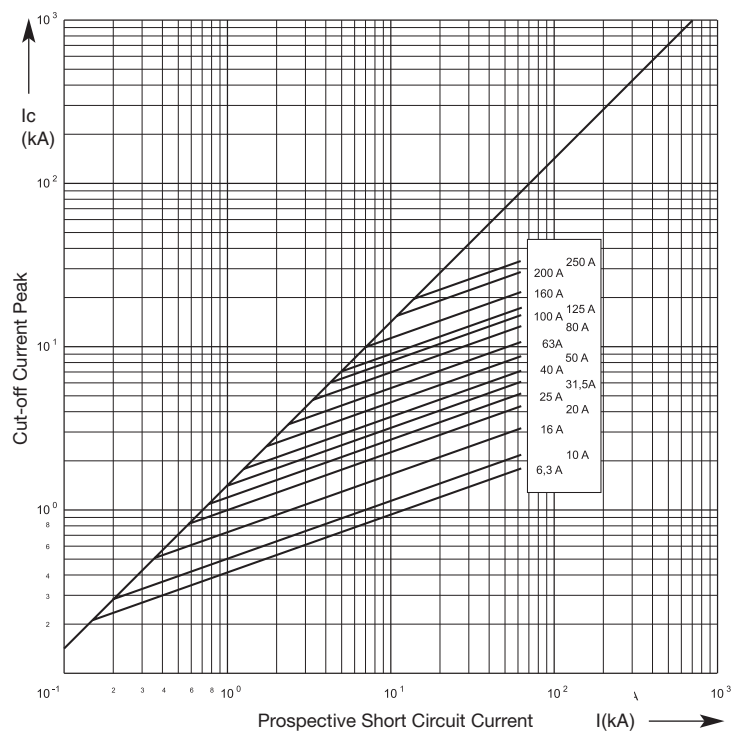
Time Current Characteristics

Back up



Cut Off Current Diagram

Back up



MEDIUM VOLTAGE FUSES

EUROPEAN STANDARD

**FOR INSTALLATION INSIDE
TRANSFORMERS UNDER OIL**



**General purpose fuses
installed in transformers**

The installation of high-voltage fuse-links inside oil filled transformers provides space and cost savings for the total concept of distribution transformer substations. They furthermore provide superior protection inside the concept of so called “Intrinsically Safe Transformers”.

For this purpose, the high voltage fuses are designed as general purpose fuse links. The fuse links will provide detection and cut-off of a widest possible range of all fault currents.

Above the desired bursting protection of transformer tanks, they also interrupt.

The fuse-links fulfill all requirements regarding oil-tightness during the manufacturing phase of the transformer itself and also during service operation. The fuse-links are safe against continuous temperatures of 105°C and they can also withstand very high temperatures arising during vacuum impregnation of transformers.

The fuse-links are provided with threaded holes size M10 at their contact caps for easy installation inside the transformer.

Because of the specific design of the ageing resistant fuse element system, by the use of high grade ceramic as well as appropriate sealing methods, these fuse links can be used inside oil filled transformers free of any ageing for many decades.

Because these fuses are fitted inside transformers under oil, they are subjected to severe stresses like partial discharges, high temperatures and vacuum during filling and drying process of transformer manufacture. Superior design and construction of our fuses and long positive field experience eliminate problems which may be caused due to such stresses.

Summary of advantages

- ▷ Space and cost saving in distribution transformer substation design
- ▷ Protection against short-circuit and internal transformer faults
- ▷ Bursting protection of the transformer through specific characteristic of the fuse-link
- ▷ Resistance against ageing



MEDIUM VOLTAGE FUSES

EUROPEAN STANDARD

FOR INSTALLATION INSIDE
TRANSFORMERS UNDER OIL

Selection Guide

Rated Voltage AC kV	Class	Part No.	Selector Guide Page	Techn. Data Page	
12	General purpose	30 310 91	HHO 3	HHO 5	
12	Back up	30 310 11	HHO 3	HHO 5	
17.5	General purpose	30 311 91	HHO 3	HHO 5	
24	General purpose	30 312 91	HHO 4	HHO 6	
24	Back up	30 312 11	HHO 4	HHO 6	
36	Back up	30 323 11	HHO 4	HHO 6	



MEDIUM VOLTAGE FUSES
EUROPEAN STANDARD

**FOR INSTALLATION INSIDE
TRANSFORMERS UNDER OIL**

Rated voltage
AC 12 kV

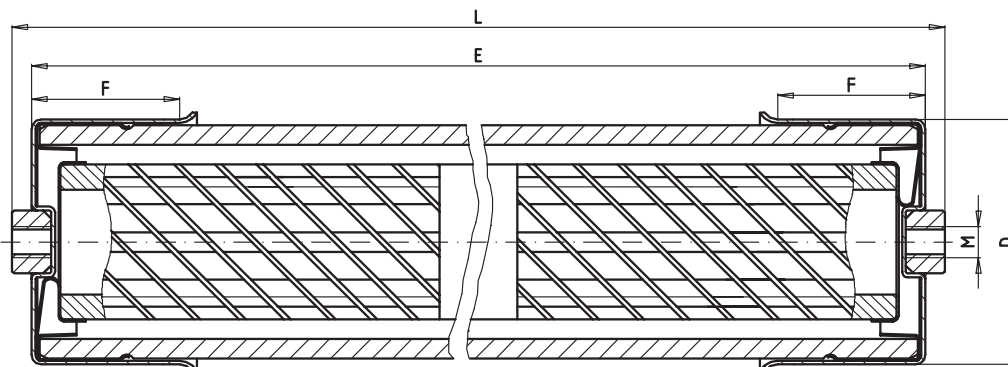
Oiltight

Rated current	Part No.	Breaking current kA	Class	Weight (kg/1)	Pack	
8 A	30 310 91	63	General purpose	2.4	1	
12 A	30 310 91	63	General purpose	2.4	1	
16 A	30 310 91	63	General purpose	2.4	1	
20 A	30 310 91	63	General purpose	2.4	1	
22 A	30 310 91	63	General purpose	2.4	1	
40 A	30 310 91	63	General purpose	2.4	1	
50 A	30 310 91	63	General purpose	2.4	1	
63 A	30 310 91	63	General purpose	2.4	1	
80 A	30 310 11	63	Back up	2.4	1	
100 A	30 310 11	63	Back up	2.4	1	
125 A	30 310 11	63	Back up	2.4	1	

Rated voltage
AC 17.5 kV

Oiltight

Rated current	Part No.	Breaking current kA	Class	Weight (kg/1)	Pack	
8 A	30 311 91	63	General purpose	2.4	1	
10 A	30 311 91	63	General purpose	2.4	1	
12 A	30 311 91	63	General purpose	2.4	1	
16 A	30 311 91	63	General purpose	2.4	1	
20 A	30 311 91	63	General purpose	2.4	1	



D	2.48" (63 mm)
E	14.17" (360 mm)
F	1.57" (40 mm)
L	14.60" (371 mm)
M	M10


MEDIUM VOLTAGE FUSES
EUROPEAN STANDARD
**FOR INSTALLATION INSIDE
TRANSFORMERS UNDER OIL**
Rated voltage
AC 24 kV
Oiltight

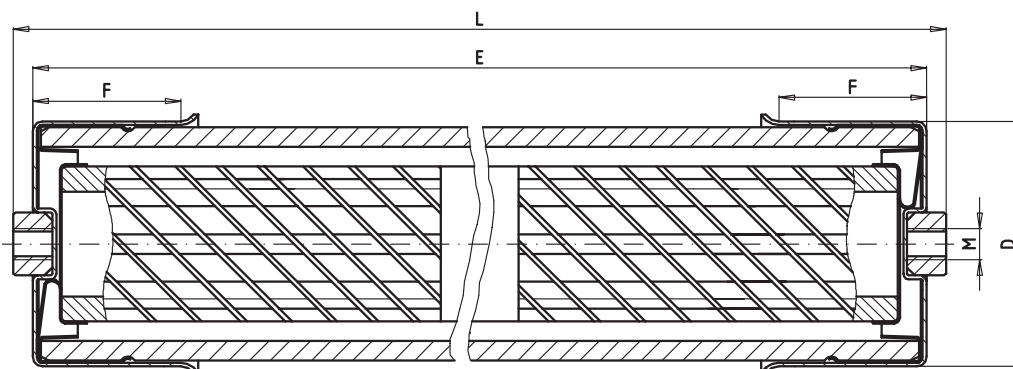
Rated current A	Part No.	Breaking current kA	Class	Weight (kg/1)	Pack	
8 A	30 312 91	63	General purpose	2.4	1	
12 A	30 312 91	63	General purpose	2.4	1	
16 A	30 312 91	63	General purpose	2.4	1	
20 A	30 312 91	63	General purpose	2.4	1	
31.5 A	30 312 11	63	Back up	2.4	1	
40 A	30 312 11	63	Back up	2.4	1	
50 A	30 312 11	63	Back up	2.4	1	
63 A	30 312 11	63	Back up	2.4	1	
80 A	30 312 11	63	Back up	2.4	1	

Rated voltage
AC 36 kV
Oiltight

Rated current	Part No.	Breaking current kA	Class	Weight (kg/1)	Pack	
10 A	30 323 11	40	Back up	2.4	1	
16 A	30 223 11	40	Back up	2.4	1	
20 A	30 323 11	40	Back up	2.4	1	
25 A	30 323 11	40	Back up	2.4	1	
31,5 A *	30 323 11	40	Back up	2.4	1	
40 A *	30 323 11	40	Back up	2.4	1	

* E= 17.32 " (440 mm)

D	2.48" (63 mm)
E	14.17" (360 mm)
F	1.57" (40 mm)
L	14.60" (371 mm)
M	M10



Length
360 mm

 Rated voltage
AC 12 kV

 Class
General purpose / Back up

Rated current	Part No.	Breaking current kA	Power loss W	Class	Pre-arcing integral I ² t / A ² s	Total I ² t Value A ² s	
8 A	30 310 91	63	8	General purpose	172	1,800	
12 A	30 310 91	63	13	General purpose	340	3,800	
16 A	30 310 91	63	16.5	General purpose	830	9,200	
20 A	30 310 91	63	20	General purpose	1,730	17,300	
22 A	30 310 91	63	12	General purpose	2,260	22,600	
40 A	30 310 91	63	35	General purpose	3,530	35,500	
50 A	30 310 91	63	46	General purpose	5,490	55,000	
63 A	30 310 91	63	62	General purpose	9,030	90,000	
80 A	30 310 11	63	91	Back up	17,500	175,000	
100 A	30 310 11	63	115	Back up	41,500	415,000	
125 A	30 310 11	63	176	Back up	56,500	565,000	

 Length
360 mm

 Rated voltage
AC 17.5 kV

 Class
General purpose

Rated current	Part No.	Breaking current kA	Power loss W	Class	Pre-arcing integral I ² t / A ² s	Total I ² t Value A ² s	
8 A	30 311 91	63	10	General purpose	172	1,800	
10 A	30 311 91	63	15	General purpose	250	2,800	
12 A	30 311 91	63	17	General purpose	460	5,100	
16 A	30 311 91	63	22	General purpose	1,100	12,000	
20 A	30 311 91	63	27	General purpose	1,700	18,500	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHO 7 AND HHO 8

Length
360 mm

 Rated voltage
AC 24 kV

 Class
General purpose / Back up

Rated current	Part No.	Breaking current kA	Power loss W	Class	Pre-arcing integral I ² t / A ² s	Total I ² t Value A ² s	
8 A	30 312 91	63	17	General purpose	172	1,900	
10 A	30 312 91	63	21	General purpose	250	2,800	
12 A	30 312 91	63	24	General purpose	460	5,100	
16 A	30 312 91	63	31	General purpose	830	8,300	
20 A	30 312 91	63	21	General purpose	1,730	17,300	
31.5 A	30 312 11	63	76	Back up	1,400	14,000	
40 A	30 312 11	63	94	Back up	2,200	22,000	
50 A	30 312 11	63	108	Back up	4,700	47,000	
63 A	30 312 11	63	114	Back up	8,700	87,000	
80 A	30 312 11	63	176	Back up	13,500	135,000	

 Length
360 mm

 Rated voltage
AC 36 kV

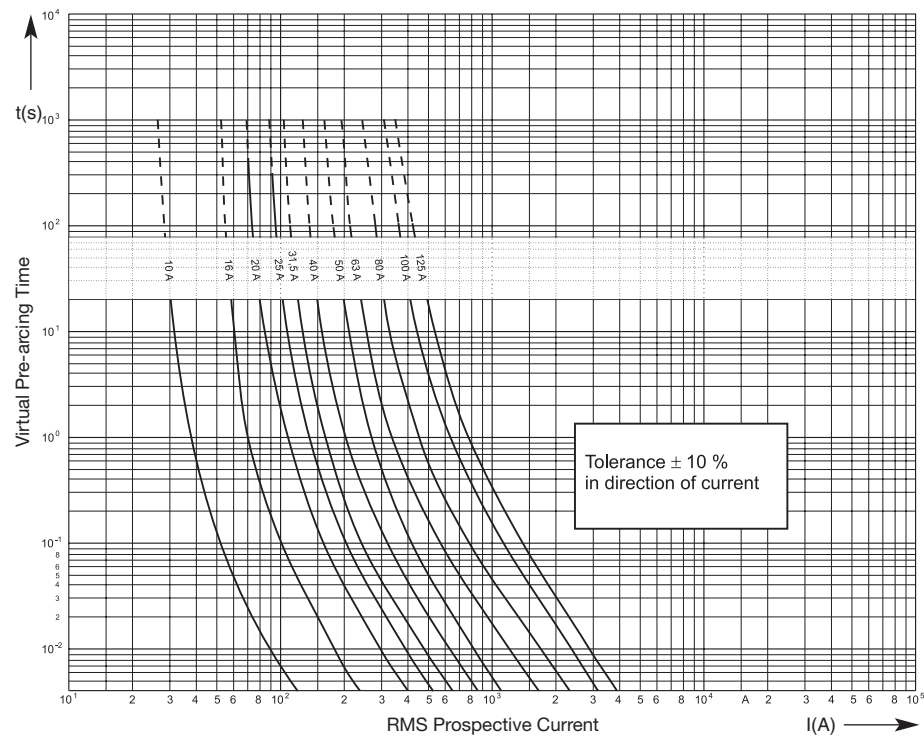
 Class
Back up

Rated current	Part No.	Breaking current kA	Power loss W	Class	Pre-arcing integral I ² t / A ² s	Total I ² t Value A ² s	
10 A	30 323 11	40	85	Back up	70	1,100	
16 A	30 323 11	40	50	Back up	160	1,900	
20 A	30 323 11	40	73	Back up	550	6,600	
25 A	30 323 11	40	88	Back up	920	11,000	
31.5 A	30 323 11	40	132	Back up	1400	16,800	
40 A	30 323 11	40	152	Back up	2640	31,700	

TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHO 7 AND HHO 8

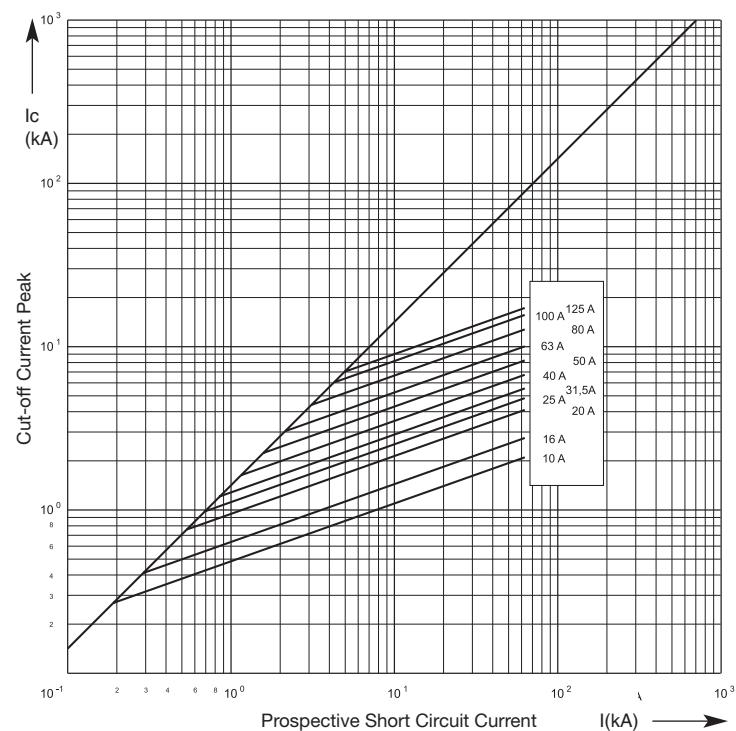
Time Current Characteristics

Back up



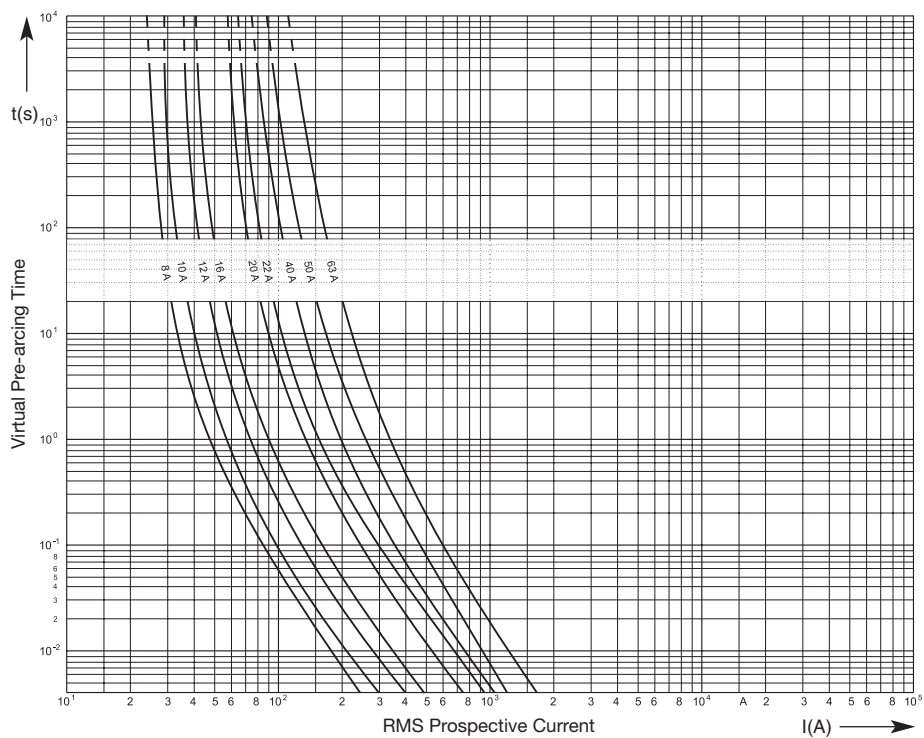
Cut Off Current Diagram

Back up



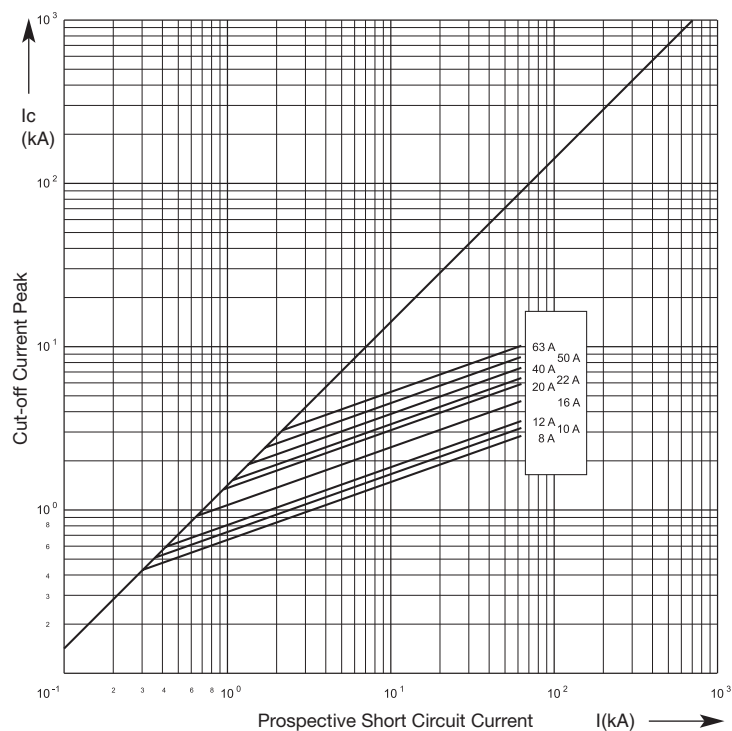
Time Current Characteristics

General purpose



Cut Off Current Diagram

General purpose



Recommendation for protection of main transformer

Rated Voltage kV	Transformer rated capacity kVA											
	50	100	160	200	250	315	400	500	630	800	1000	
12	8	12	16	20	22	40	50	63	80	100	-	
24	8	8	10	12	16	20	20	31,5	40	63	80	
36	-	-	10	16	16	20	20	-	-	-	-	

HHO

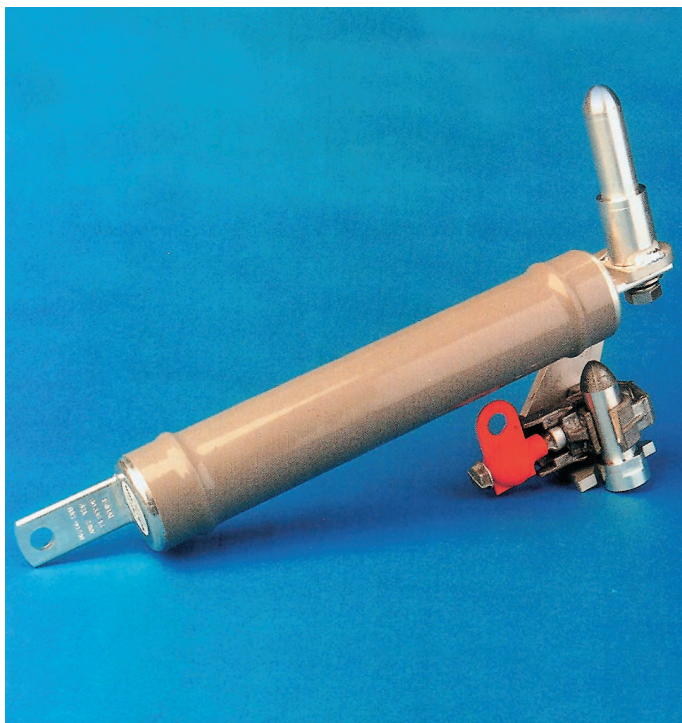
SIBA

FUSES

MEDIUM VOLTAGE FUSES

EUROPEAN STANDARD

FOR OVERHEAD LINES



Medium voltage fuses
Plug-in fuses for overhead lines

Medium voltage fuse links including overhead line connectors are provided as a set. They allow in overhead lines to provide fuse protection on pole mounted distribution transformers.

The set consists of a high voltage fuse link including a set of contacting armatures.

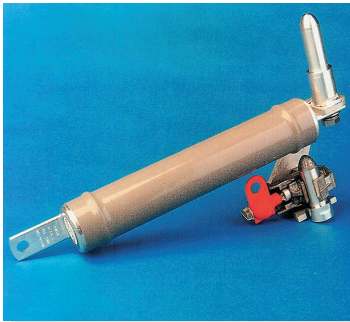
▶ A tee-off connection based on the installation of such a set also provides the possibility to isolate the transformer from the service line. As isolation can be achieved with the overhead line alive, service or modification work on the transformer circuit will not cause interruption supply of that overhead line. The transformer will only be disconnected on the low voltage side.

▶ The high voltage fuse links are designed to provide bursting protection of the transformer. The time-current characteristic of the fuse links matches with the maximum withstand capability of standard pole mounted transformer under fault conditions. Through appropriate design of the fuse link melting elements they are specially suitable for overhead lines which are subjected to lightning strikes because the short current peaks of such strikes will not cause opening of the fuse link.

The fuse links with rated voltage 24 kV are suitable for networks with service voltages 10 up to 20 kV.

▶ Outstanding advantage for installation work on overhead lines is the low weight of the fuse link and connectors by using aluminium for the contact armatures and furthermore polyester for the housing of the fuse link. For protection against ultra-violet radiation the polyester housing is covered with a protection sleeve.

Further technical data are available on request.



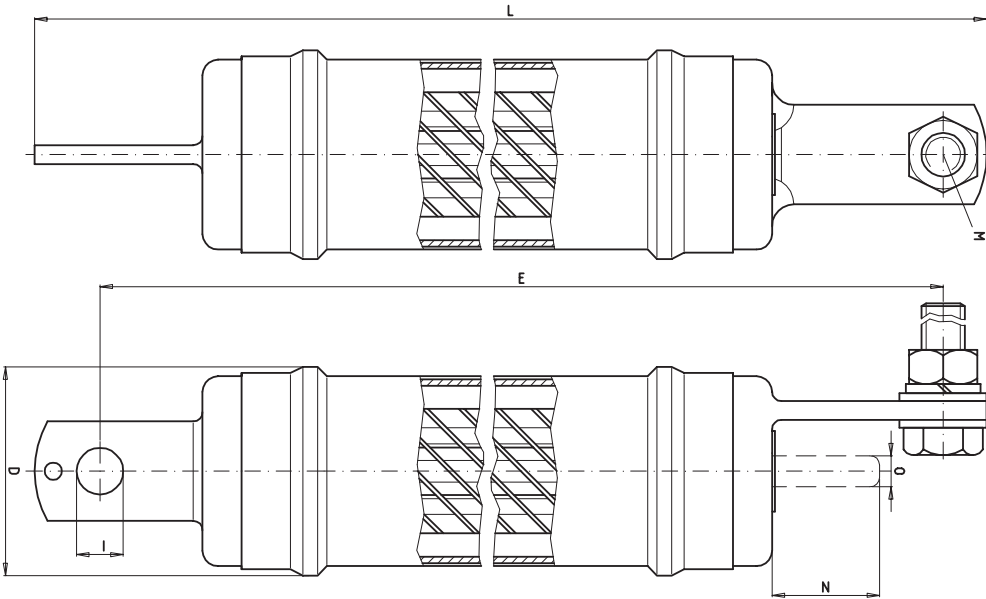
MEDIUM VOLTAGE FUSES
FRENCH STANDARD

FOR OVERHEAD LINES

Rated voltage
AC 24 kV

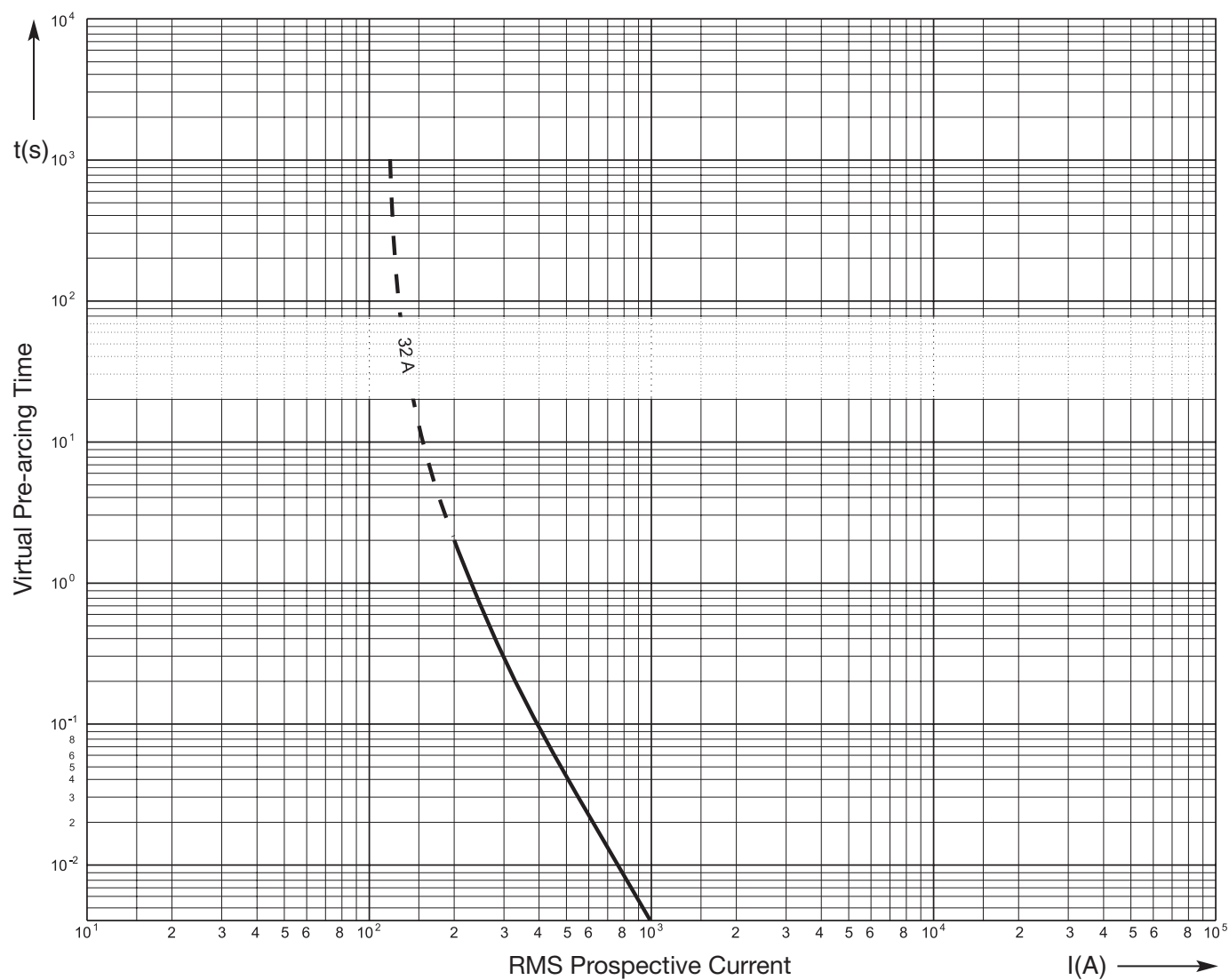
Class
Back up

Rated current A	Part No.	Breaking current kA	Weight (kg/1)	Pack	
32	30 335 13	12	2.2	1	

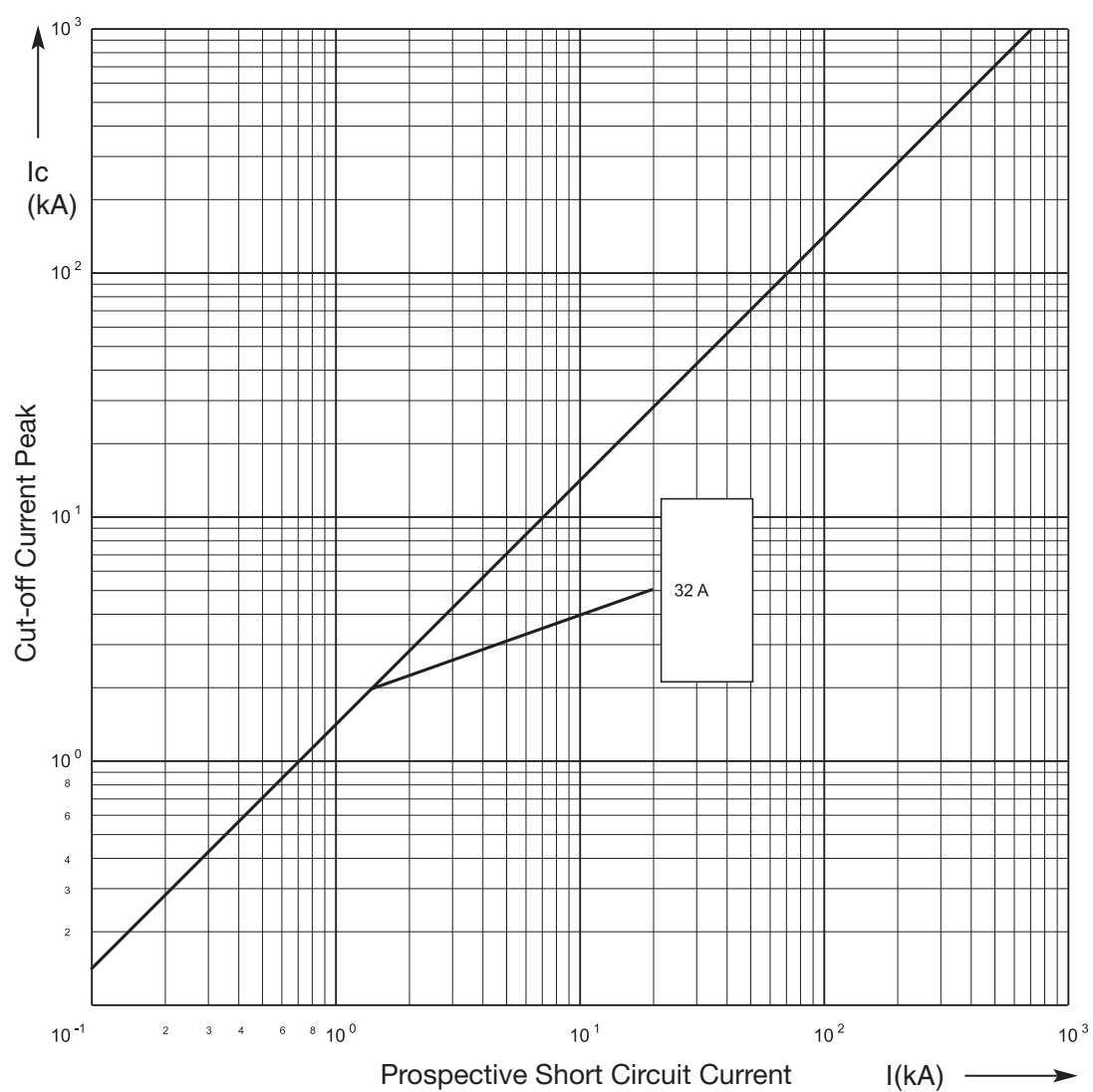


D	2.64" (67 mm)
E	16.77" (426 mm)
I	0.60" (15 mm)
L	18.15" (461 mm)
M	M14
N	1.38" (35 mm)
O	0.40" (10 mm)

Time Current Characteristics



Cut Off Current Diagram



HIGH VOLTAGE FUSES

MOTOR CIRCUIT PROTECTION – DIN AND BRITISH STANDARD



SIBA Motor Rated Fuses are available in

- German DIN Standard and
- British Standard Design

The large variety in body sizes / mounting style / Voltage and Amp rating allow great flexibility for the designer of switchboard panels.

Standards:

- Dimensions: DIN 43625 and BS 2692
- Electrical: IEC 60644
IEC 60470
IEC 60282-1

Class: Back up

Voltage Ratings: AC 3.6 - 7.2 kV

Current Ratings: 50 - 315 A

Features / Benefits

- ▷ Protection of Motor circuits according IEC 60644
- ▷ High resistance against cyclic and peak current loads / avoiding ageing because of high motor start up currents
- ▷ Low power losses / minimising temperature increase in narrow contactor enclosures
- ▷ Low minimum interrupting currents for operation of overcurrents in the range 3 - 3.5 x rated current
- ▷ Availability of SIBA-Temperature limiters for switchgear protection against excessive temperature rise
- ▷ Type tested according IEC 60470 in cooperation with the major European Panel builders
- ▷ Available in DIN 43625 and BS 2692 dimensions



HIGH VOLTAGE FUSES

MOTOR CIRCUIT PROTECTION – DIN AND BS STANDARD

Selection Guide

Size	Rated Voltage AC kV	Class	Part No.	Selector Guide Page	Techn. Data Page	
TA2	3.6	Back up	30 269 56	HHM 3	HHM 6	
TA4	7.2	Back up	30 271 56	HHM 4	HHM 6	
E= 292 mm	3.6	Back up	30 201 53	HHM 5	HHM 7	
E= 292 mm	3.6	Back up	30 202 53	HHM 5	HHM 7	
E= 292 mm	3.6	Back up	30 200 54	HHM 5	HHM 7	
E= 442 mm	7.2	Back up	30 108 53	HHM 5	HHM 7	
E= 442 mm	7.2	Back up	30 109 53	HHM 5	HHM 7	
E= 442 mm	7.2	Back up	30 110 54	HHM 5	HHM 7	



HIGH VOLTAGE FUSES

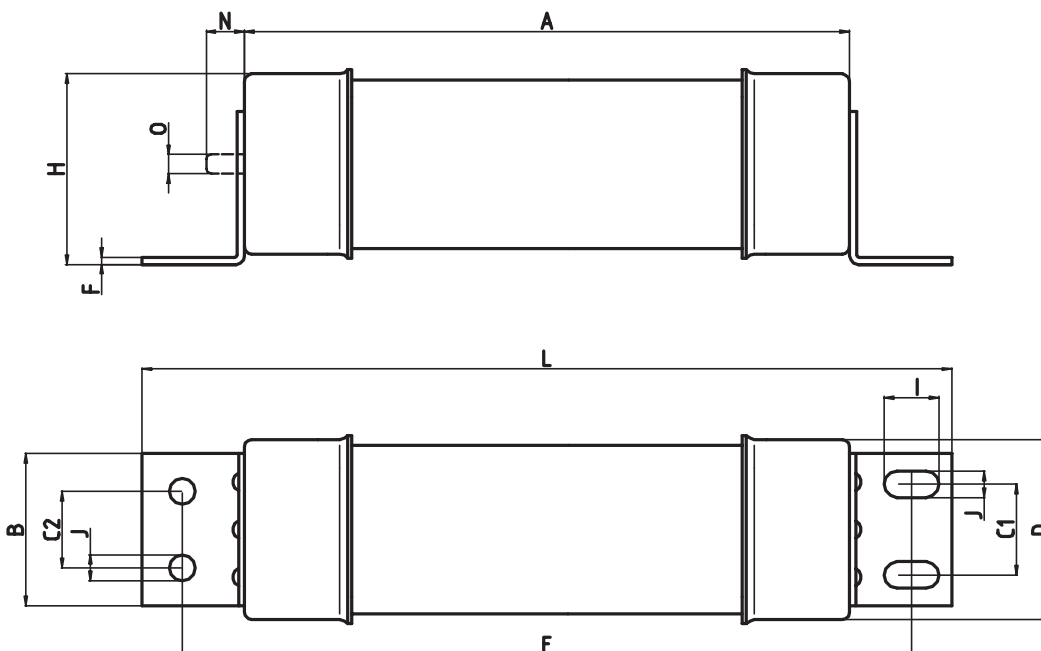
MOTOR CIRCUIT PROTECTION – BRITISH STANDARD

Size
TA 2

Rated voltage
AC 3.6 kV

Standard
BS 2692-1 · IEC 60282-1 · IEC 60644

Rated current A	Part No.	Breaking current kA	Weight (kg/1)	Pack	
50	30 269 56	50	3.9	1	
63	30 269 56	50	3.9	1	
80	30 269 56	50	3.9	1	
100	30 269 56	50	3.9	1	
125	30 269 56	50	3.9	1	
160	30 269 56	50	3.9	1	
200	30 269 56	50	3.9	1	
224	30 269 56	50	3.9	1	
250	30 269 56	50	3.9	1	
315	30 269 56	50	3.9	1	



A	10.00" (254 mm)
B	2.56" (65 mm)
C1	1.50" (38 mm)
C2	1.26" (32 mm)
D	2.99" (76 mm)
E	12.00" (305 mm)
F	0.12" (3 mm)
H	3.11" (79 mm)
I	0.91" (23 mm)
J	0.43" (11 mm)
L	13.39" (337 mm)
N	0.51" (13 mm)
O	0.31" (8 mm)



HIGH VOLTAGE FUSES

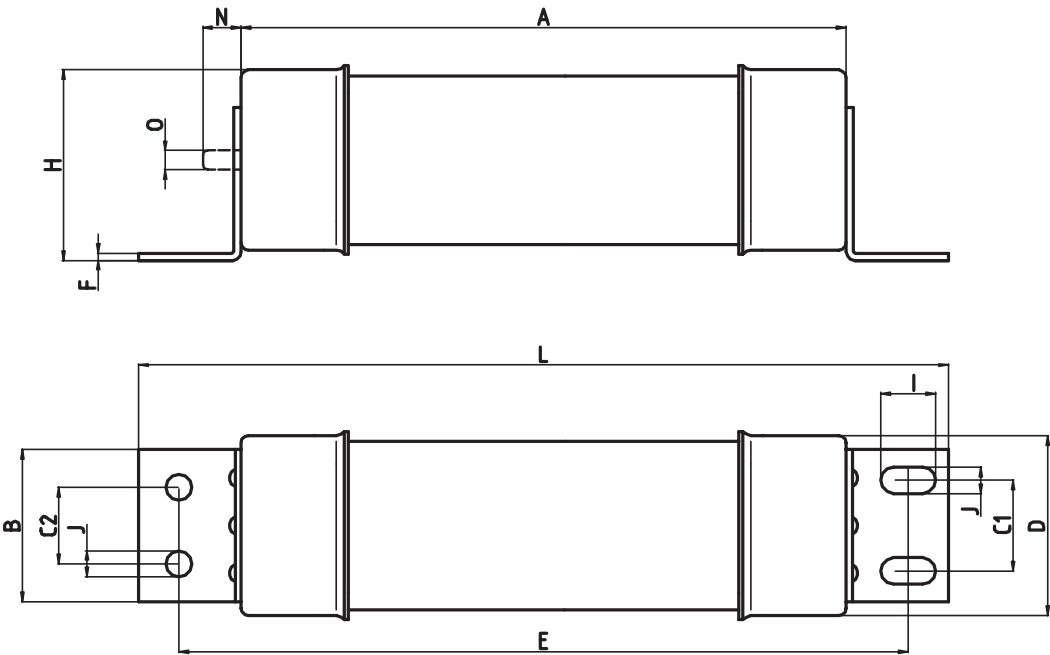
MOTOR CIRCUIT PROTECTION – BRITISH STANDARD

Size
TA 4

Rated voltage
AC 7.2 kV

Standard
BS 2692-1 · IEC 60282-1 · IEC 60644

Rated current A	Part No.	Breaking current kA	Weight (kg/1)	Pack	
50	30 271 56	50	4.2	1	
63	30 271 56	50	4.2	1	
80	30 271 56	50	4.2	1	
100	30 271 56	50	4.2	1	
125	30 271 56	50	4.2	1	
160	30 271 56	50	4.2	1	
200	30 271 56	50	4.2	1	
224	30 271 56	50	4.2	1	
250	30 271 56	50	4.2	1	
315	30 271 56	50	4.2	1	



A	15.87" (403 mm)
B	2.56" (65 mm)
C1	1.50" (38 mm)
C2	1.26" (32 mm)
D	3.00" (76 mm)
E	17.87" (454 mm)
F	0.12" (3 mm)
H	3.10" (79 mm)
I	0.90" (23 mm)
J	0.43" (11 mm)
L	19.13" (486 mm)
N	0.50" (13 mm)
O	0.31" (8 mm)



HIGH VOLTAGE FUSES

MOTOR CIRCUIT PROTECTION – DIN STANDARD

DIN Size
E= 292 mm

Rated voltage
AC 3.6 kV

Standard
IEC 60282-1 · IEC 60644

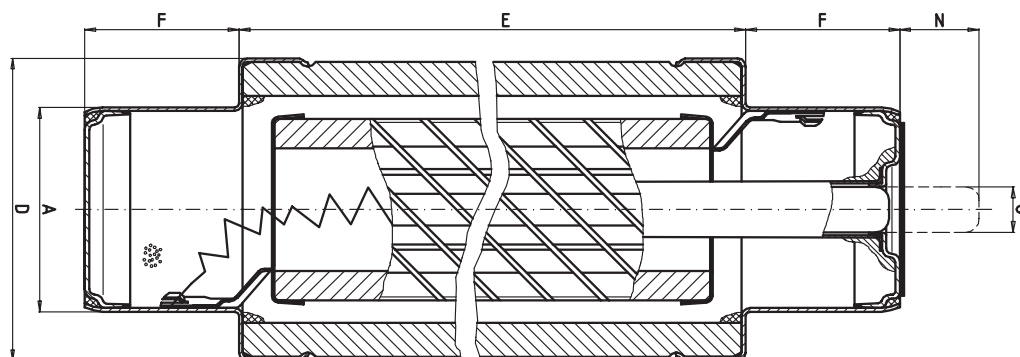
Rated current A	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
50	30 201 53	2.07	53	50	1.6	1	
63	30 201 53	2.07	53	50	1.6	1	
80	30 201 53	2.07	53	50	1.6	1	
100	30 201 53	2.07	53	50	1.6	1	
125	30 202 53	2.64	67	50	2.0	1	
160	30 202 53	2.64	67	50	2.0	1	
200	30 200 54	3.35	85	50	3.8	1	
224	30 200 54	3.35	85	50	3.8	1	
250	30 200 54	3.35	85	50	3.8	1	
315	30 200 54	3.35	85	50	3.8	1	

DIN Size
E= 442 mm

Rated voltage
AC 7.2 kV

Standard
IEC 60282-1 · IEC 60644

Rated current A	Part No.	D= Diameter		Breaking current kA	Weight (kg/1)	Pack	
		inch	mm				
50	30 108 53	2.07	53	50	2.2	1	
63	30 108 53	2.07	53	50	2.2	1	
80	30 108 53	2.07	53	50	2.2	1	
100	30 108 53	2.07	53	50	2.2	1	
125	30 109 53	2.64	67	50	2.9	1	
160	30 109 53	2.64	67	50	2.9	1	
200	30 110 54	3.35	85	50	5.4	1	
224	30 110 54	3.35	85	50	5.4	1	
250	30 110 54	3.35	85	50	5.4	1	
315	30 110 54	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" (306 mm)

Size
TA 2

 Rated voltage
AC 3.6 kV

 Class
Back up

Rated current A	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
50	30 269 56	50	2,400	9,600	23	
63	30 269 56	50	3,800	14,800	31	
80	30 269 56	50	6,100	22,800	36	
100	30 269 56	50	13,000	48,000	39	
125	30 269 56	50	23,000	83,000	44	
160	30 269 56	50	65,000	220,000	46	
200	30 269 56	50	119,000	382,000	54	
224	30 269 56	50	139,000	423,000	57	
250	30 269 56	50	290,000	826,000	61	
315	30 269 56	50	545,000	1,450,000	70	

 Size
TA 4

 Rated voltage
AC 7.2 kV

 Class
Back up

Rated current A	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
50	30 271 56	50	2,400	10,500	34	
63	30 271 56	50	3,800	16,500	47	
80	30 271 56	50	6,100	25,500	56	
100	30 271 56	50	13,000	54,000	60	
125	30 271 56	50	23,000	92,500	68	
160	30 271 56	50	65,000	247,000	71	
200	30 271 56	50	119,000	428,000	83	
224	30 271 56	50	139,000	475,000	88	
250	30 271 56	50	290,000	928,000	92	
315	30 271 56	50	545,000	1,610,000	107	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHM 8 AND HHM 9**

DIN Size
E= 292 mm

Rated voltage
AC 3.6 kV

Class
Back up

Rated current A	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
50	30 201 53	50	2,400	9,050	27	
63	30 201 53	50	3,800	14,000	38	
80	30 201 53	50	6,100	21,500	44	
100	30 201 53	50	13,000	46,500	47	
125	30 202 53	50	23,000	79,500	51	
160	30 202 53	50	65,000	215,000	53	
200	30 200 54	50	119,000	370,000	58	
224	30 200 54	50	139,000	415,000	61	
250	30 200 54	50	290,000	810,000	64	
315	30 200 54	50	545,000	1,380,000	75	

DIN Size
E= 442 mm

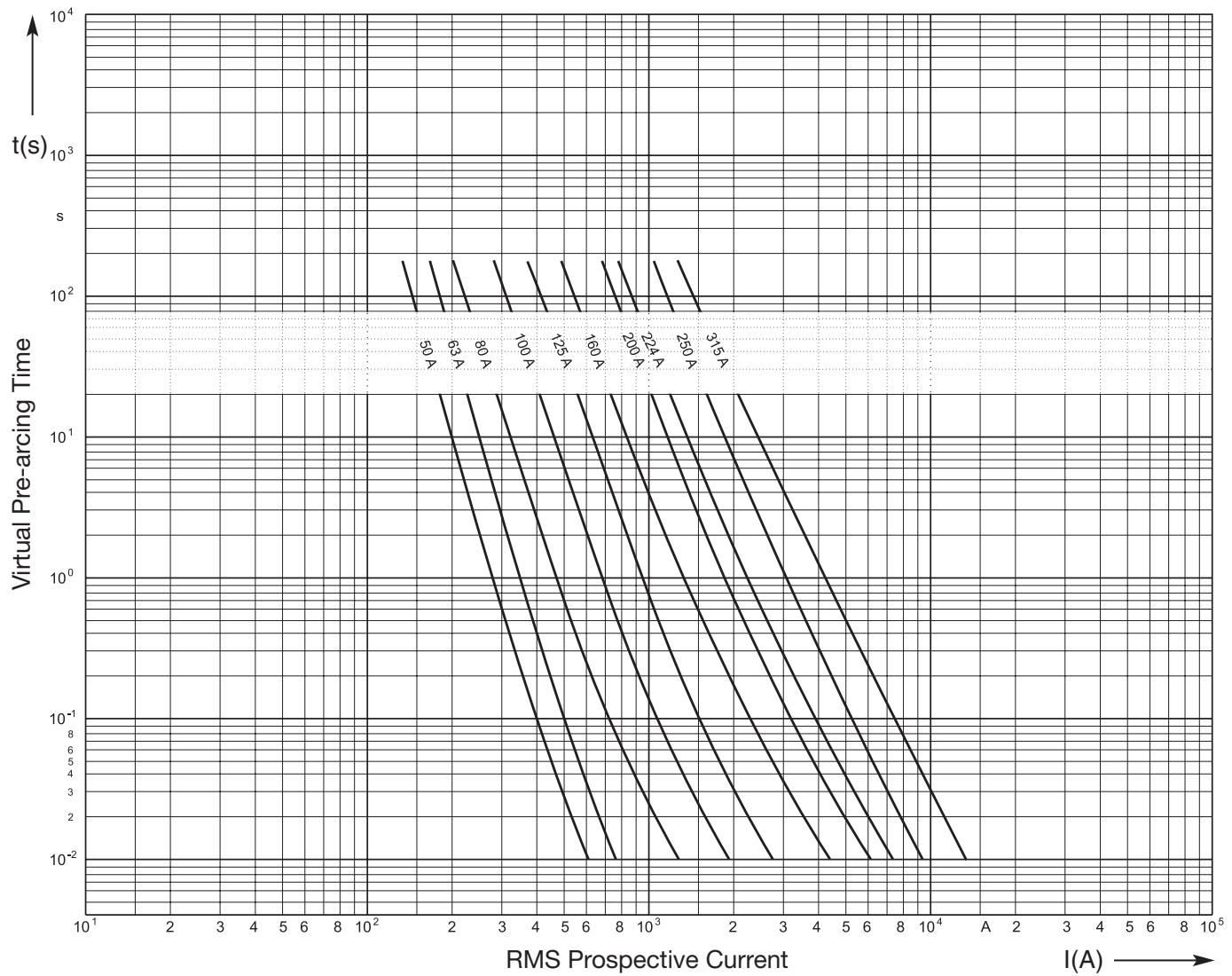
Rated voltage
AC 7.2 kV

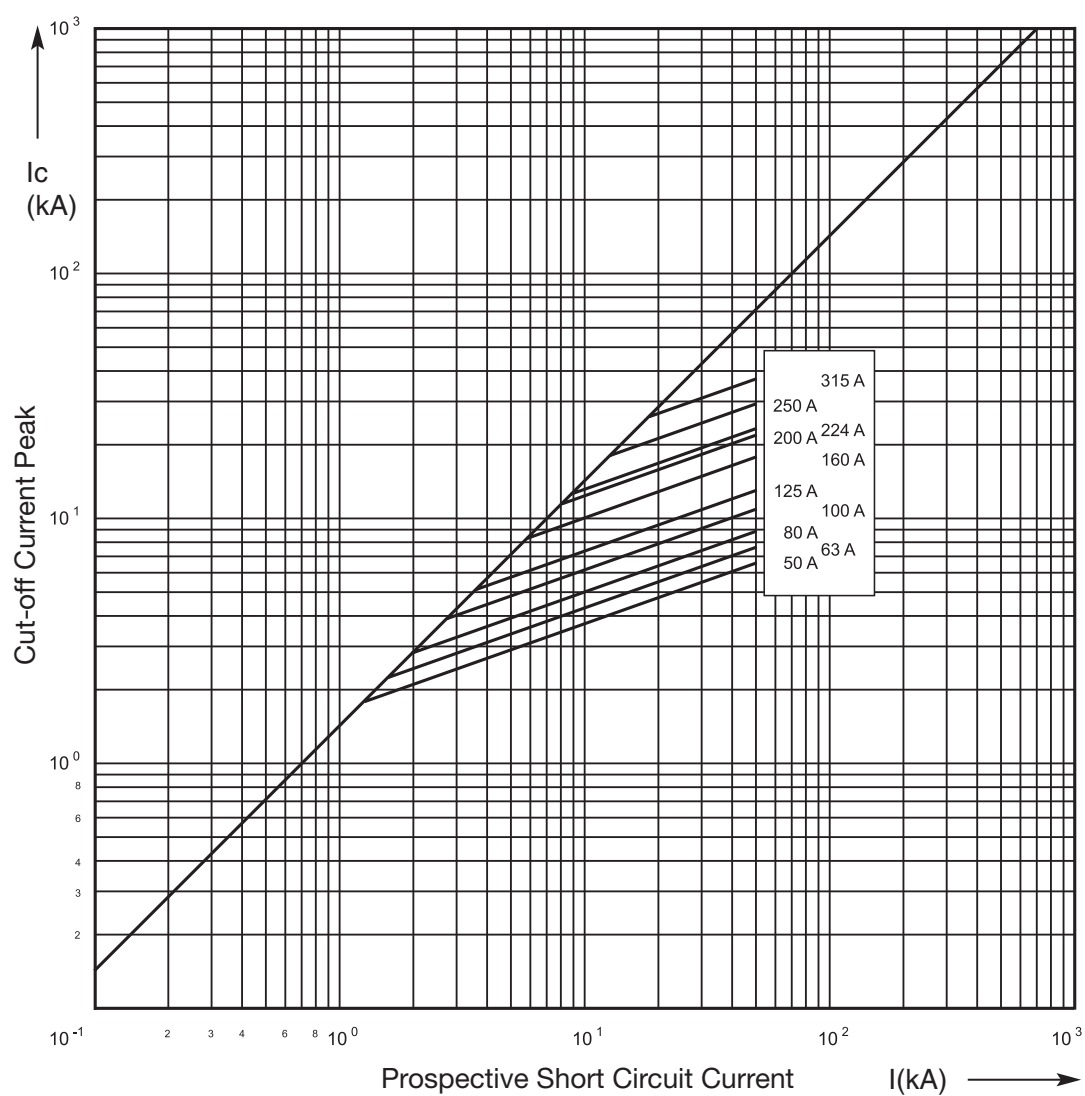
Class
Back up

Rated current A	Part No.	Breaking current kA	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s	Power loss W	
50	30 108 53	50	2,400	10,050	39	
63	30 108 53	50	3,800	15,600	55	
80	30 108 53	50	6,100	24,400	66	
100	30 108 53	50	13,000	52,000	71	
125	30 109 53	50	23,000	89,500	73	
160	30 109 53	50	65,000	239,500	76	
200	30 110 54	50	119,000	419,000	88	
225	30 110 54	50	139,000	465,000	94	
250	30 110 54	50	290,000	909,000	98	
315	30 110 54	50	545,000	1,577,000	115	

**TIME CURRENT CHARACTERISTICS AND CUT OFF CURRENT DIAGRAM
PLEASE REFER TO PAGES HHM 8 AND HHM 9**

Time Current Characteristics

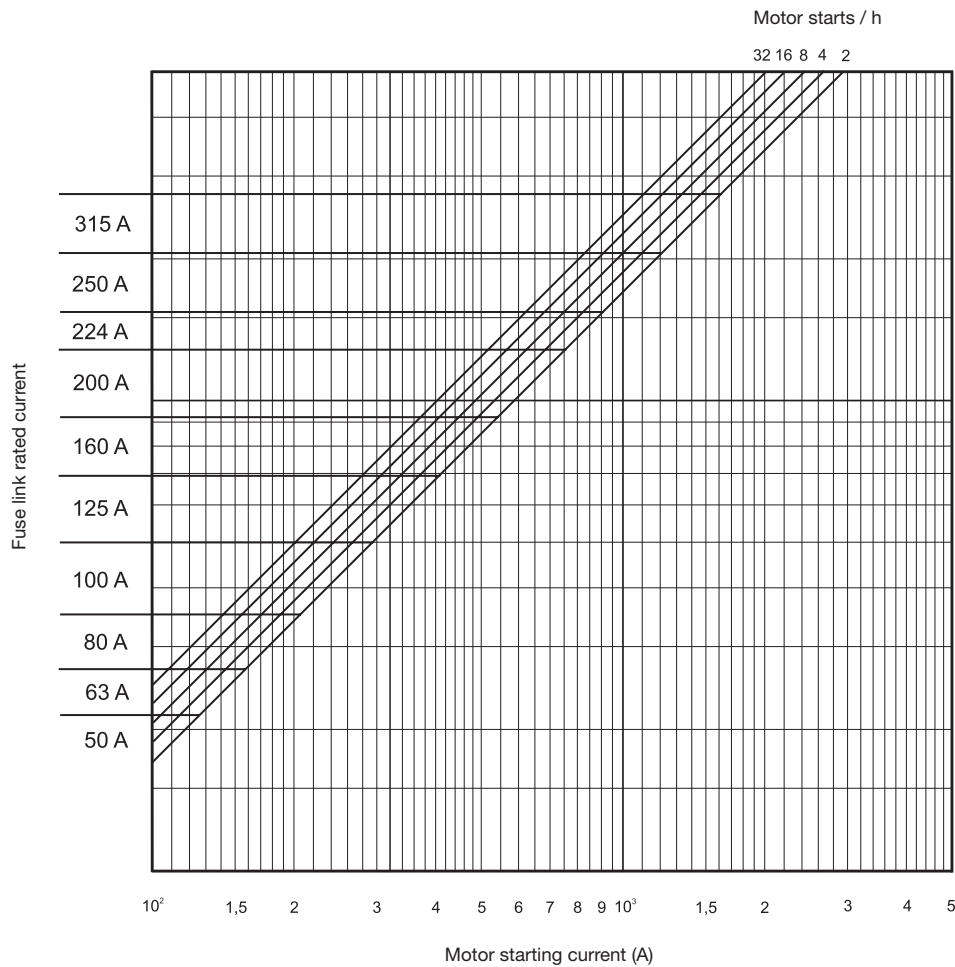


Cut Off Current Diagram

Recommendation

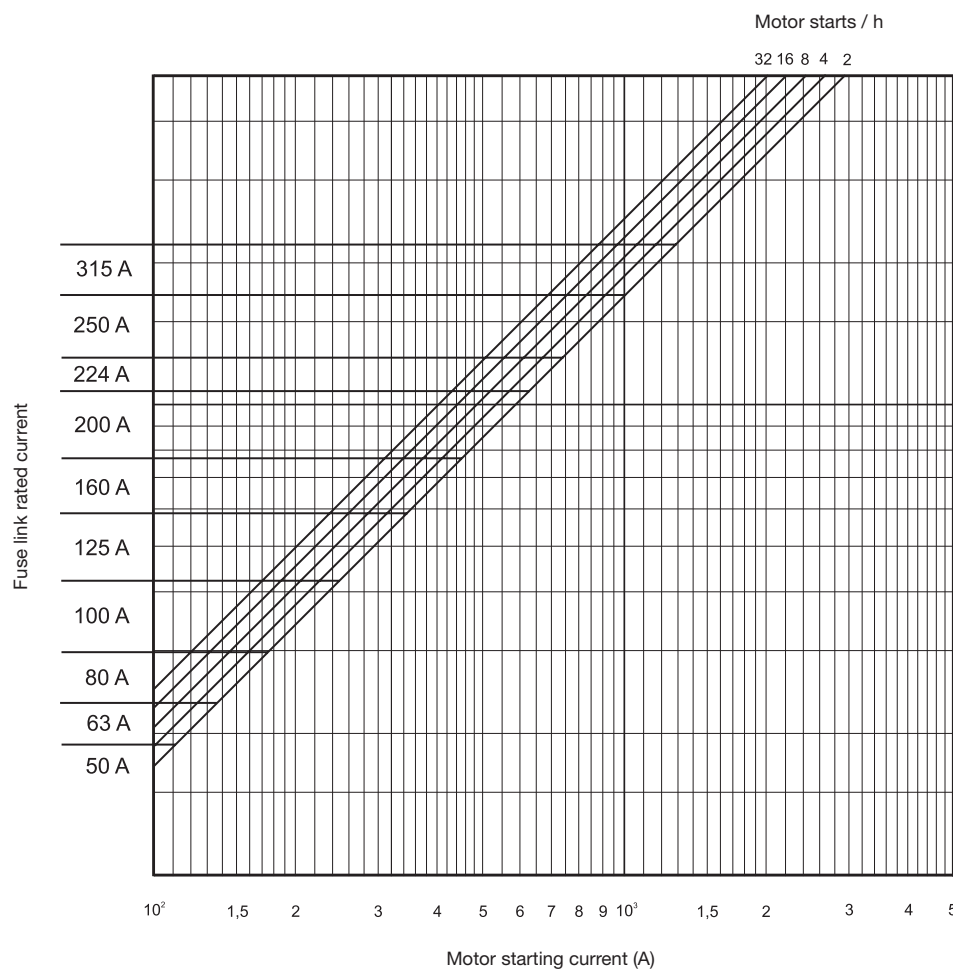
Motor Circuit Application

6 sec



Fuse selection for motors with a run up time not exceeding **6 seconds**; e.g. Pump motors.

Two immediate successive starts are admissible.

Recommendation
Motor Circuit Application
15 sec


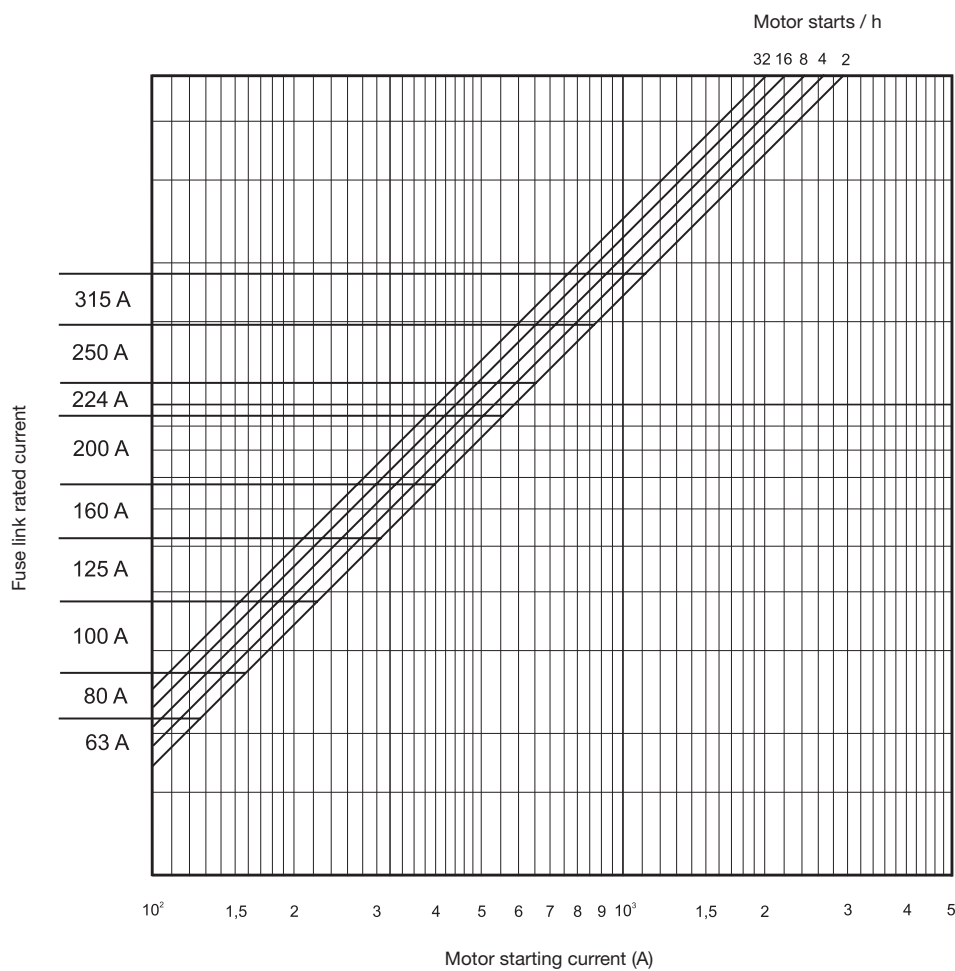
Fuse selection for motors with a run up time not exceeding **15 seconds**;
e.g. Fan motors.

Two immediate successive starts are admissible.

Recommendation

Motor Circuit Application

30 sec



Fuse selection for motors with a run up time not exceeding **30 seconds**; e.g. Mill motors.

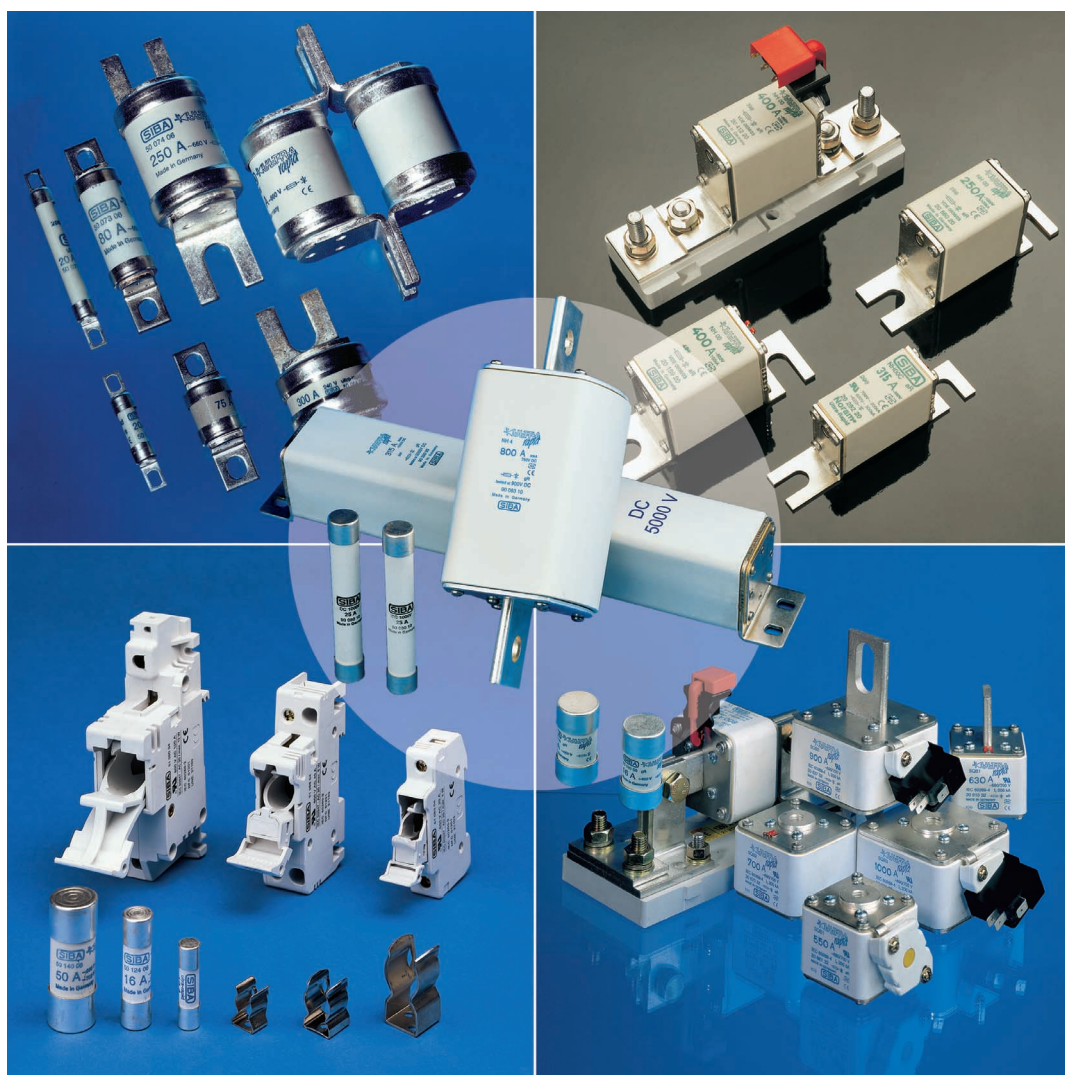
Two immediate successive starts are admissible.

ULTRA RAPID FUSES

FOR SEMICONDUCTOR PROTECTION

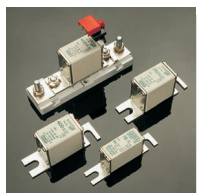
Over many years SIBA has developed a very comprehensive product line of ultra rapid fuses which has found worldwide acceptance.

Based on our global distributor network and technical customer support, our R&D department provides design partnership for new product development which includes computer calculation and testing to cut development time.



The range of **ULTRA RAPID FUSES**
comprises the following sections:

UR



Technical Guide

URT



Size 000 and 00 fuses

URB

660 V – 1000 V



ND and D type fuses

URD

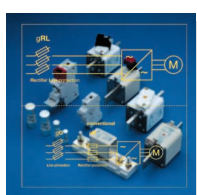
440 V – 500 V



DC fuses

URDC

660 V – 5000 V



British Standard fuses

URE

240 V – 700 V



Combination fuse “two in one”

URL

690 V Rectifier and line protection



Knife blade fuses

URM

500 V – 2000 V



Square body fuses

URS

690 V – 1300 V

Cylindrical fuses

URZ

250 V – 1000 V

UR

Ultra-Rapid Fuse-links for the protection of semiconductor-rectifiers

1. General

Design of rectifier equipment especially requires provision of switchgear to protect the power semiconductors. Semiconductor components have low thermal capacity so that the requirements for the planned protective device exceed the normal conditions for protection of standard devices. Both rated current and rated voltage as sole criteria for the selection are no longer sufficient and the following has to be considered additionally:

- High speed of response in the overload range
- Operating integrals adjusted to the limited load integrals of the semiconductor cell
- Low switching voltages values during breaking process
- Low temperature rise and power loss of the protective device under operating conditions

Further important design aspects are the price of the protection device in relation to the total costs of the equipment as well as breakdown time after a fault. SIBA ultra-rapid fuse-links meet the mentioned requirements and efficient protection is provided.

Remarkable features are:

- Extreme fast time/current behaviour and low operating integral values
- Low temperatures at the insulating body due to excellent temperature conductivity of the special ceramic
- Low power loss under rated conditions
- Free of ageing; pure silver elements are used
- Low switching respectively arc voltage due to special element design

The present technical information is intended to be used as a design basis and shall offer all basics necessary for selection of maximum protection of rectifier devices. First, the fuse specific data are explained in detail that renders the basis for the physical contemplation of the breaking process treated in the following chapters.

SIBA data sheets include characteristic curves that are described in this documentation and completed by examples.

Subsequently the most commonly used rectifier circuits are shown in tabular form, properties of parallel and series connection of fuse-links are mentioned and possible faults in circuits are treated.

Thermal influences, alternating load operation and shock load are considered by conversion coefficients described in the following chapter.

Finally, in the last chapter criteria for dimensioning the optimum fuse-link as well as a flow diagram for an easy overview are shown.

2.Characteristic values of fuse-links

Rated voltage U_N

The rated voltage of a semiconductor fuse-link is the RMS-value of a sinusoidal a.c. voltage. All test conditions and the operating voltage limit are stipulated on that basis. The fuse-link rated voltage has to be determined in order to be higher than the voltage causing the short-circuit current.

Rated current I_N

The rated current of a fuse-link is the RMS-value of a sinusoidal a.c. current at a frequency of 45 to 62 Hz. It is the current of which the fuse-link can be loaded continuously under determined conditions without changing its characteristics.

Provided by the standards the conditions are:

- Ambient temperature $(20 \pm 5) ^\circ\text{C}$
- No external cooling
- Connecting cross section specified
- Fuse-links are mounted in an open test rigs while testing

Applications normally are not covered under these conditions. For that reason additional calculations are necessary, which may result in decreasing the fuse-links rated current.

Power dissipation P_V

The power dissipation (or power loss) of fuse-links results from multiplying the rated current by the value of the voltage drop measured over the fuse-link after loading with rated current up to final steady temperature rise under the conditions described above.

Initial short-circuit alternating current I_K

The effective value of the short-circuit current at the beginning of the short-circuit which would flow if the short-circuit would occur directly behind the fuse-link and if the fuse-link would be replaced by a member of negligible impedance.

Cut-off current I_D

Peak of the short-circuit current limited by the fuse. Highest momentary value of the current during the breaking process.

Melting time t_S

Period between the start of the fault current and the melting of all elements.

Arcing time respectively extinguishing time t_L

Period between the melting of the elements and the definite arc extinction.

Operating time t_A

Total of the melting time t_S and the arcing time t_L .

Switching voltage, arc voltage U_L

Maximum value (peak value) of the voltage occurring at the terminals of the fuse-link during the breaking process.

Melting integral $I^2 t_S$

Integral of the current square above the melting time. Among others, the value of the melting integral depends on the construction of the fuse elements and the ambient temperature.

$$I^2 t_S = \int_0^{t_S} i^2 dt$$

Arc integral $I^2 t_L$

Integral of the current square above the arcing time. The value of the arc integral depends on the system voltage, the short-circuit current or respectively current rise rate di/dt and the short-circuit impedances R_K and Z_K .

$$I^2 t_L = \int_{t_S}^{t_A} i^2 dt$$

Operating integral $I^2 t_A$

Total of the melting integral and the arc integral

$$I^2 t_A = I^2 t_S + I^2 t_L$$

3. The breaking process

3.1 Breaking at low and medium overload

The load current flowing through a fuse-link results in a voltage drop according to its resistance. Multiplication of the voltage drop with the load current designates a power loss, which in form of temperature is passed to the environment, the terminals and the cables. At load currents above the rated current high temperature rise develops at the melting element notches inside the fuse-link so that in dependence on the time these notches can melt. At these interrupting spots individual arcs occur allow the current to flow until the arc is extinguished.

In the range of low and medium fault currents where the melting time has the duration of some current half waves an arcing time of less than 5 ms can be regarded as negligible. This melting time then corresponds to the total breaking time.

3.2 Breaking at short-circuit currents

In the short-circuit range the melting element notches melt and evaporate in ranges to nearly one millisecond due to the steep current rise. At the melted notches arcs occur which remain active as long as sufficient number of insulating bridges are created by the surrounding quenching medium. The arising arc voltage exceeds the value of the operating voltage, however it is limited by a special SIBA-design of the melting element. The arcing time in this case cannot be regarded as negligible any longer, because the arcing time takes longer than the melting time.

Addition of melting time and arcing time results in the operating time. For protection of semiconductor components in this range the operating integral $I^2 t_A$ is decisive, that means the total of melting integral and arc integral. It must always be smaller than the limited load integral of the semiconductor element to be protected.

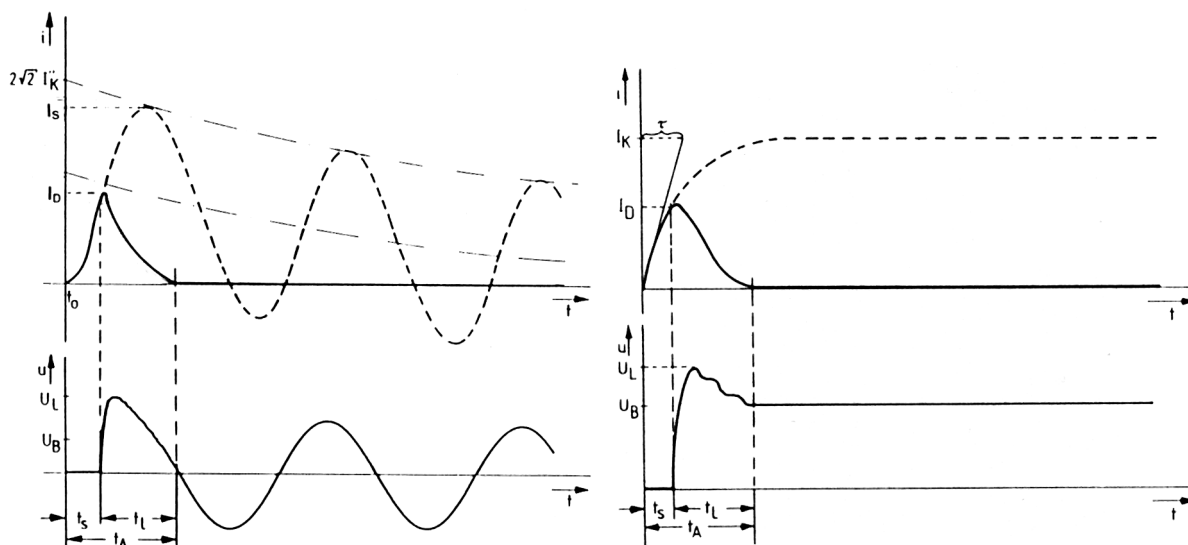


Fig. 3.3 Short-circuit interruption at A.C. and D.C. currents

3.3 Voltage and current development at short-circuit currents

Figure 3.3 shows the temporal development of a short-circuit current at alternating and direct voltage. The voltage existing across the fuse-link during the breaking process is indicated simultaneously with the current with regard to time. The time t_0 is the beginning of the short-circuit; a peak value as maximum asymmetric short-circuit current can be reached. After the time t_s has passed, the fuse-link limits the current to the value of the cut-off current I_D .

A breaking arc occurs, but is decreased rapidly during time t_L by the influencing quartz sand. The breaking process is finished after the time t_A .

4. Graphic presentation of the fuse-link operation behaviour

4.1 Time-current curves

Time-current curves demonstrate the dependence of the melting time on the fault-current flowing through the fuse-link. The curves are a result of testing the melting time of non-preloaded fuse-links. The individual measured points are the arithmetic average value of at least three melting tests. If not otherwise noted, the tolerance of the time-current curve is about $\pm 7\%$ in direction of the current.

The limited operating ranges of ultra-rapid fuse-links are indicated by a dotted part of the curve. It is the range of load currents, where the melting elements react, but the fuse-links may not interrupt due to thermal reasons. From these broken line curves it is obvious that this group belongs to back-up fuses of operating class aR.

Due to a self-heating of semiconductor fuses at currents with melting times higher than 30 seconds, these over currents have to be limited with preconnected protection devices. A parallel curve of 80 % the dotted one indicates the maximum acceptable interrupting current and time of each protecting device. This is to limit the contact- and insulation- temperature of the cable and the fuse-holder if fitted.

4.2 Cut-off current diagram

The current-limitation diagram is provided to determine the cut-off current I_D and the maximum asymmetric short-circuit current I_s in dependence of the initial short-circuit alternating current I_k to be expected.

The diagonal line drawn in the diagram is the graphic expression for the possible peak value of the short-circuit current to be expected according to the simple relation: $I_s = I_k \cdot \sqrt{2}$ in case a fuse-link is not used.

Of higher importance for the user are the individual current limitation curves of the fuse-link rated current. The value of the cut-off current in respect of the dynamic load in case of short-circuit is an important figure for the design of the device to be protected.

4.4 Switching voltage diagram

Usually, the switching voltage is given at the fuse-link rated voltage. Operation of ultra-rapid fuse-links with a load voltage smaller than the rated voltage, reduction of the switching voltage has to be calculated. The diagram allows the determination of the arc voltage U_L in relation to the loading voltage U_B .

4.5 I^2t values

At high failure currents with melting times smaller than 5ms, an indication of the actual melting or switching times is no longer possible due to the adiabatic process inside the fuse-link. In this case, the melting integral has to be used for the melting process and the operating integral value stands for the sum of extinguishing and melting process.

Here the impulse of the electrical energy is defined which the current has to provide in order to melt the element notches. During arc extinguishing as well as certain energy amount is carried through the semiconductor component to be protected loading this component so that this has to be included in the calculations.

As the energy impulse for melting is always constant for a certain rated current this value is shown in the respective diagram as a statistic value. The correcting curve diagram allows calculating the operating integral at different operating voltages by giving a coefficient, which must multiplied with the operating integral given in the datasheet.

4.6 Operating classes

The respective range of currents, over which the fuse-link can operate, determines operating classes

aR: Back-up semiconductor protection

Partial range breaking capacity fuse-links, which are able to carry continuous currents from the lowest up to their rated current. The fuses are able to interrupt currents above a certain multiple of their rated current up to the breaking current.

gR: Full range semiconductor protection

Full range breaking capacity fuse-links, which are able to carry continuous currents from the lowest up to their rated currents and are able to interrupt currents from the minimum melting current up to the rated breaking current.

gRL: Fuses for the simultaneous protection of the semiconductor and the cables

Full range SIBA fuse-link with the same behaviour as the above mentioned fuses of class gR. Additionally this fuse is suitable for the overload protection of the cables. Instead of the older solution to take a semiconductor protection fuse and additionally a cable protection fuse, it may possible to take only one fuse of class gRL. Saving of space and cost is the main task for that kind of fuse. (See a special report at our web-side)

5. Applications

5.1 SIBA ultra-rapid fuse-links in rectifier circuits

The most common rectifier circuits are shown in table 5.1. The operating currents and operating voltages are coordinated to the individual circuits.

Given are the coefficients for:

- Operating current of a phase fuse-link as a multiple of the D.C. load current
- Operating current of a fuse-link placed at the inverter branch as a multiple of the D.C. load current
- Maximum value of the rectifier voltage as a multiple of the transformer voltage
- Operating voltage of the fuse-link as a multiple of the floating voltage

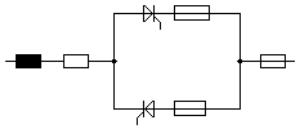
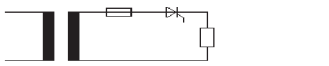
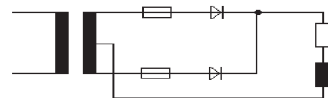
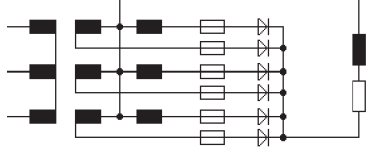
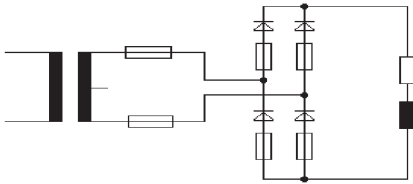
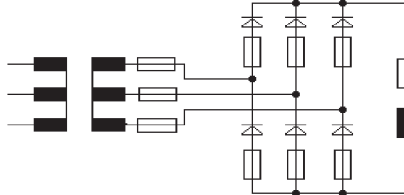
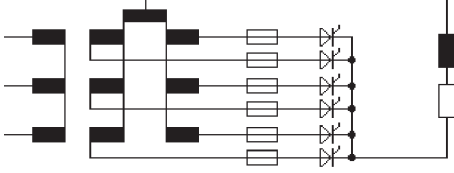
Circuit	Code	Type	Fuse @ Phase	Fuse @ Branch		
			I_{RMS} / I_{DC}	I_{RMS} / I_{DC}	U_{AC} / U_2	U_{Fuse} / U_D
		Single phase	1.00	0.50	1.41	-
	M1	Single phase half wave	1.57	1.57	1.41	2.22
	M2	Single phase full wave	0.71	0.71	2.83	2.22
	M6	Six phase	0.41	0.41	2.5	1.48
	B2	Single phase	1.00	0.71	1.83	1.11
	B6	Six phase	0.82	0.58	2.5	0.74
	SD6	Six phase	0.29	0.29	2.50	1.48
	SD12	Twelve phase	0.14	0.14	2.50	1.48

Fig. 5.1 Circuits for power semiconductors and the appropriate calculation coefficients

5.2 Series or parallel connection of SIBA ultra-rapid fuse-links

5.2.1 Series connection of fuse-links

Protecting rectifier circuits of operating voltages higher than the rated voltage of the available fuse-links or in case of standardized fuse-links shall be used there is the possibility of a fuse series connection. (See also Figure 5.2.a)

This kind of protection requires identical resistances of the series fuse-links of identical rated current. The same production batch and the same type made by the same manufacturer are also necessary. In addition, it has to be ensured that the size of the short-circuit current to be expected is at least 10 times the fuse rated current.

5.2.2 Parallel connection of fuse-links

To protect circuits with loading currents higher the current range of the available fuse ratings, two or more fuse-links can be used at parallel connection (see Fig. 5.2.b).

This application requires an optimal equal current load of the individual fuse-link group of identical rated current. In addition, the inner resistances of these fuse-links have to be in close tolerances. Also important is the use of fuses of the same production batch.

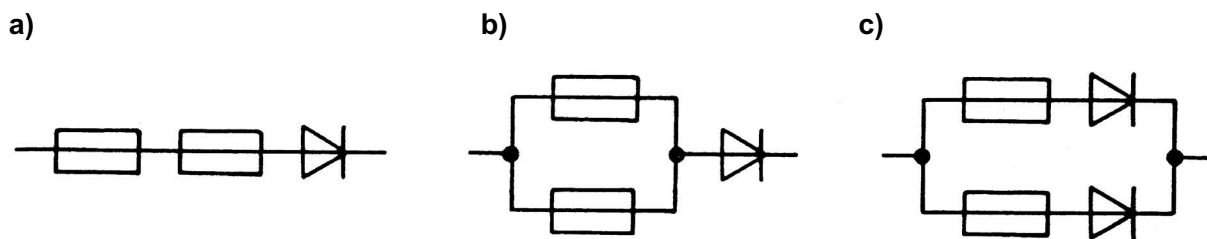


Fig. 5.2 Series and parallel connection of fuse-links

5.2.3 Semiconductors in parallel operation

Parallel connection of semiconductors also requires equal path currents. In general, it is sufficient to make sure that none of the semiconductors has to take a too high let-through current. Some applications, however, especially when several semiconductors are connected in parallel, require measures against too high closing losses of the fastest switching thyristor. Such a measure would be the series connection of resistances in the individual branches.

Fuse-links connected in series to thyristors can take over the function of resistances. Here it is certainly necessary that all fuse-links have equal resistances.

Circuits according to Fig. 5.2.c the same current flows through the fuse-link and the semiconductor cell to be protected. The load current splits each half on both sides at synchronous operation. The integral values of the fuse-link and the semiconductor cell are to be assigned directly to each other.

6. Consideration of practical behaviour in inverter circuits

SIBA ultra-rapid fuse-links are developed and rated according standardized conditions. In practice, however, use of fuse-links for semiconductor protection is seldom done that way. In case of operation, differing from these stipulations it may happen that the full rated current cannot be carried or that a higher load of the fuse-link is possible. The conversion coefficients in the data sheets consider such deviating conditions. Therefore, it is necessary to consider the special behaviour of the fuse-surrounded area like cooling, heat sources etc. In addition, it is of high importance to recognize cyclic load or peak currents.

6.1 Thermal influences

A warmer ambient temperature may reduce the current rating of the fuse-link. As the different types of fuse-links react different to higher temperatures, each type is given a constant "a". To consider a surrounding temperature above 30 °C it is necessary to calculate on the basis of "a" the coefficient "A1":

$$A1 = \sqrt{\frac{a - \vartheta U}{a - 30}}$$

Coefficient "B1" considers an additional cooling by external ventilation. If the air speed v_L (measured at the side of the fuse-body in a distance of 1 to 2 cm) is about 5 m/s then B1 has a value of 1.25, if the air speed is different to 5 m/s one has to calculate:

$$B1 = 1 + 0.05 \cdot v_L$$

With A1 and B1 it is possible to up rate the load current I_L to the smallest fuse rated current I_{min} :

$$I_{min} = I_L / (A1 \cdot B1)$$

In case of thermal influences, the chosen fuse rated current must be equal or higher than the calculated smallest fuse rated current I_{min} .

6.2 Cyclic load operation

Cyclic load operation with regular or irregular variation of load currents has considerable influence on the fuse-links lifetime. (See the technical essay at our web-side) This operation with load periods of 0.1 second up to one hour requires a complex calculation. For defined part times, coefficient A2 for regular and irregular load periods and B2 for each current step at the load periods has to be differentiated.

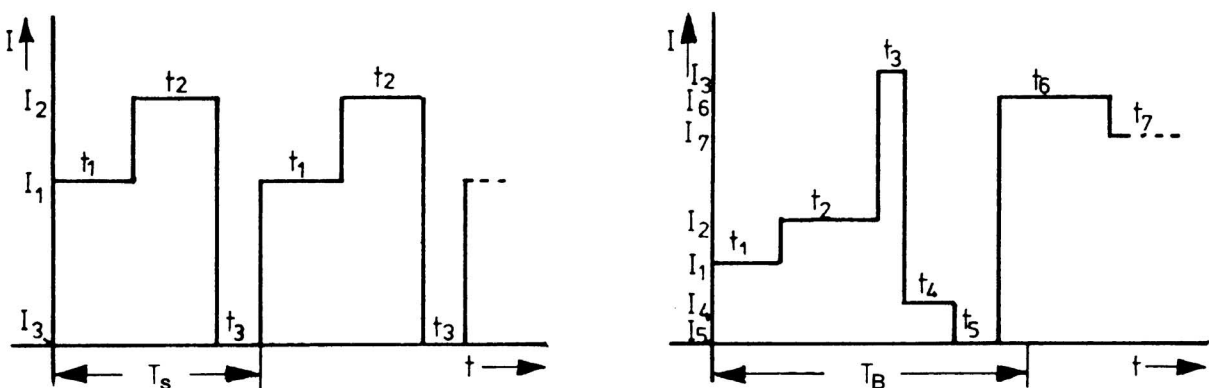


Fig. 6.2 Regular and irregular load

In case of cycling load, the RMS-value of the load current obtained over the period T_s has to be divided by coefficient A2 to get the smallest fuse rated current.

$$I_{min} = I_{RMS} / A2$$

While the coefficient A2 is influencing the rated current, the coefficient B2 has to be considered in coherence to the fuse curve. Here B2 indicates the distance between the value of the current step and the smallest value of the time/current-curve obtained over the part periods t_n .

$$I_{TCC} \geq I_n / B2$$

6.3 Extraordinary overloads

Should seldom appearing short time overloads be considered, however, not be interrupted by the fuse-link; or at load currents of a certain value a short-circuit breaker and not a fuse-link positioned behind the circuit breaker shall cause the interruption of the circuit, coefficient Cf3 has to be used. Similar to the application of coefficient B2, also Cf3 indicates the distance between the value of the current step and the smallest value of the time/current-curve obtained over the part periods t_n .

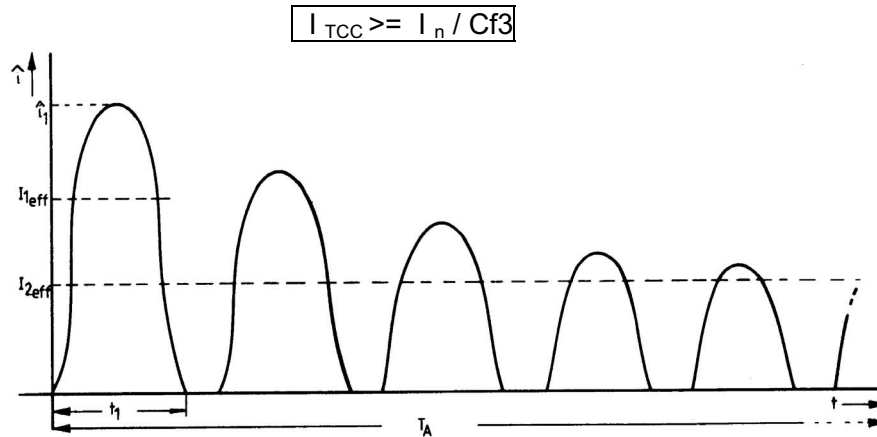


Fig. 6.3 Extraordinary overload

6.4 Application

In sum to have the appropriate rated current of the fuse-link one has to calculate at first the smallest possible rated current by

$$I_{rat} \geq I_{Load} / (A1 * B1 * A2)$$

Afterwards there is a need for a comparison of the single load current and the fuse-curve

$$I_{TCC} \text{ of } I_{rat} \geq I_n / (B2)$$

or/and

$$I_{TCC} \text{ of } I_{rat} \geq I_n / (Cf3)$$

7. Optimal protection for your rectifier equipment

The criteria for selection of the fuse-link providing optimal protection of your rectifier are itemized below. To guarantee trouble free operation all mentioned points have to be considered.

7.1 Selection criteria

$$I_B \leq I_{rat}$$

The fuse-link load current I_B has to be smaller or equal to the fuse-link rated current I_{rat} . All influencing components (alternating load, impulse load, thermal influences) have to be considered.

$$U_B \leq U_{rat}$$

The operating voltage U_B calculated or determined from Figure 5.1 has to be smaller or equal to the fuse-link rated voltage U_{rat} . In case of doubts, the rated voltage of the component to be protected can be used as basis.

It has to be considered that during faults and generative load the voltage to be interrupted at the fuse-link may reach 1.8 times the supply voltage.

$$I^2 t_A < I^2 t_{sem}$$

The breaking integral value of the fuse-link $I^2 t_A$ has to be smaller than the limited load integral of the semiconductor cell. If necessary, the limited load integral has to be calculated by indication of the peak current limit value I_{TSM} of the semiconductor.

$$U_L < U_{RRM / DRM}$$

The arc or switching voltage U_L shall not exceed the value of the positive or negative blocking voltage of the semiconductor cell.

$$I_{K''} < I_{Kmax}$$

It has to be checked whether the possibly arising short-circuit current $I_{K''}$ resulting from reactance of the installation is smaller than the tested maximum breaking capacity of the fuse-link.

7.2 Selection procedure

A flow chart gives a guideline of how to select fuse-links considering all conditions and influences.

7.3 Protection lay out in our works

An easy possibility to design the protection of your equipment is the engineering of the proper protection in our company. Based on many years of research of semiconductor components, electrical tests and experience in dimensioning fuse-links in rectifier circuits SIBA is in the position to elaborate maximum possible safety. Supported by a fuse-calculating program our engineers will consider your given maximum conditions and can therefore recommend the proper ratings and types for a suitable protection.

7.4 Special designs

There might be applications that do not allow using standardized fuse-links or fuse-links of sizes as offered in the catalogues. Special design of contacts, decrease or increase of rated current offered in the data sheets or special characteristic of time-current behaviour of a fuse-link different from our data sheets are only some examples of our possibilities to meet your specifications. Of course, these variations are only practicable within the physical limits. In any case, however, our engineers are of course prepared to discuss your technical problems.

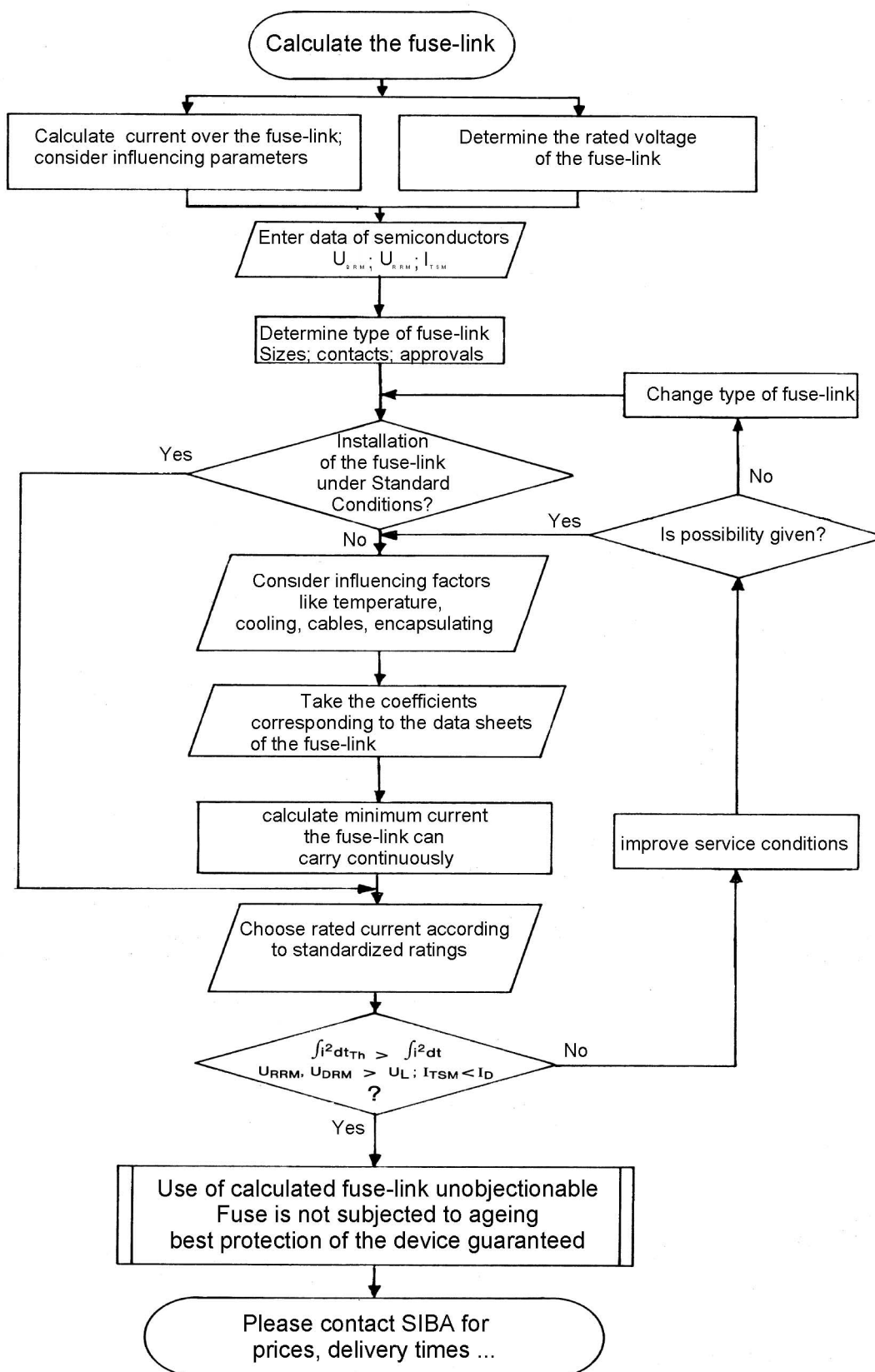


Fig 7.2 Flow chart for the selection of the semiconductor fuse-link

Ultra-Rapid Fuse-links for the protection of semiconductor-rectifiers

Annex A: Exemplary calculations

Thermal influences

A semiconductor cell has to be protected by a low-voltage fuse-link. The fuses are installed inside a temperature-controlled cabinet with an air speed of about $v_L = 4$ m/s while the temperature in the cabinet shows 80 °C.

The fuses should carry a load current of $I_L = 200$ A. Therefore L.V. fuses of size 000 with bolted connections are preferred. According our data sheets of that fuses the thermal constant "a" is given with 130.

$$A1 = \sqrt{\frac{a - \vartheta U}{a - 30}} = \sqrt{\frac{130 - 80}{130 - 30}} = 0.71$$

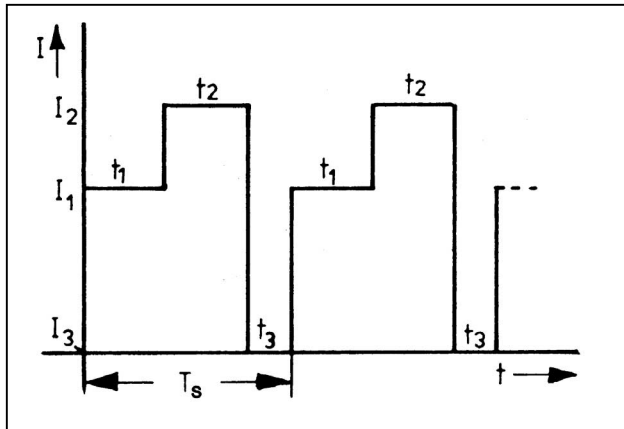
$$B1 = 1 + 0.05 * v_L = 1 + 0.05 * 4 = 1.2$$

$$I_{\min} = I_L / (A1 * B1) = 200 / (0.71 * 1.2) = 235 \text{ A}$$

The rated current of the fuse-link should be 235 A or higher. Typically one would take a rating of 250 A.

Cyclic load operation

The designer calculated a regular load period through the thyristor in a given circuit. Load-times and currents are shown in the load diagram. The observed fuse-links will be connected in series to the semiconductor. As he preferred fuses of type "SQB" the coefficients for cyclic load operation "A2" and "B2" have to be taken from the fuse data sheet.



$$\begin{aligned} I_1 &= 260 \text{ A} & t_1 &= 1020 \text{ s} \\ I_2 &= 340 \text{ A} & t_2 &= 300 \text{ s} \\ I_3 &= 0 & t_3 &= 420 \text{ s} \end{aligned}$$

From SQB-data sheet:
A2 = 0.75
B2 = 0.6

Calculation of the load current R.M.S. value:

$$I_{\text{RMS}} = \sqrt{\frac{I_1^2 * t_1 + I_2^2 * t_2 + I_3^2 * t_3}{t_1 + t_2 + t_3}} = \sqrt{\frac{260^2 * 1020 + 340^2 * 300 + 0 * 420}{1020 + 300 + 420}} = 244 \text{ A}$$

Calculation of the smallest fuse rated current:

$$I_{\text{min}} = I_{\text{RMS}} / A_2 = 244 \text{ A} / 0.75 = 325 \text{ A}$$

The rated current of the fuse-link should be 325 A or higher. Typically one would take a rating of 355 A.

Review of the load steps and comparison with the time current-curve of the rating 355 A:

$$I_{\text{TCC}} \geq I_n / B_2$$

Checking the time current-curve of the rating 355 A at 1020 s: 560 A

$$560 \text{ A} \geq 260 / 0.6 = 433 \text{ A}$$

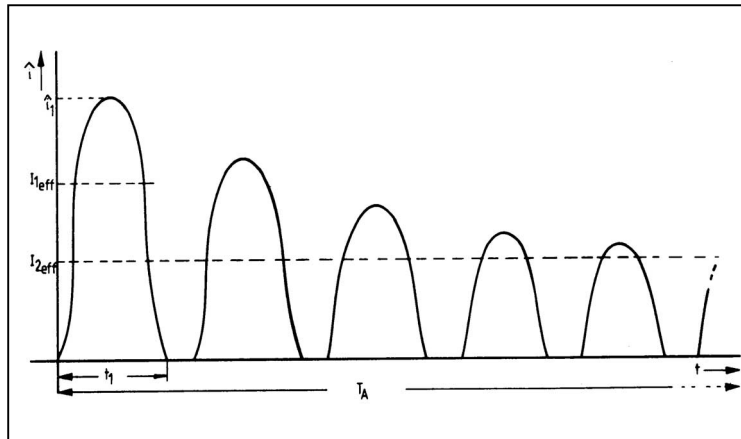
Checking the time current-curve of the rating 355 A at 300 s: 650 A

$$650 \text{ A} \geq 340 / 0.6 = 567 \text{ A}$$

Based on the calculation above, a fuse rating of 355 A will carry the load according to the diagram continuously. In a second step, one has to observe the I^2t -limits of the semiconductor and has to compare them with the fuse-integral. In this case, it may be necessary to reduce the fuse rated current.

Extraordinary overloads

An impulse load on the D.C. side of a converter causes a current through the fuse-link as shown in the load diagram. A load-break-switch interrupts such a load in a period of <200ms. It has to examine whether the fuse-link can carry the current for the duration of the overload without interruption.



$$I1_{\max} = 2000 \text{ A} \quad t1 = 14 \text{ ms}$$

$$(I1_{\text{RMS}} \text{ about } 1300 \text{ A})$$

$$I2_{\text{RMS}} = 900 \text{ A} \quad t2 = 200 \text{ ms}$$

SQB Fuse-link Size 1:

Rated current 355 A

$$Cf3 = 0.8$$

Review of the load first wave and the load-RMS value and comparison with the time current-curve of the rating 355 A:

$$I_{\text{TCC}} \geq I_n / Cf3$$

Checking the time current-curve of the rating 355 A at 14 ms: 1900 A

$$1900 \text{ A} \geq 1300 / 0.8 = 1625 \text{ A}$$

Checking the time current-curve of the rating 355 A at 200 ms: 1600 A

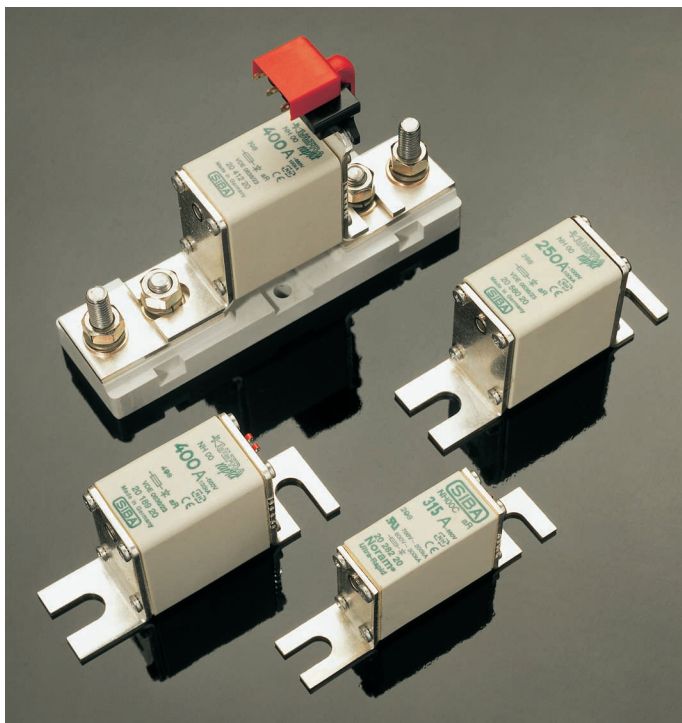
$$1600 \text{ A} \geq 900 / 0.8 = 1125 \text{ A}$$

Based on the calculation above, a fuse rating of 355 A will carry the load according the diagram continuously.

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

SIZES 000 AND 00



Class: aR

Voltage rating: AC 660 V – AC 1000 V

Current rating: 10 A to 400 A

Approvals: 

Standards: DIN 43653
IEC 60269-1 and -4
DIN VDE 0636-40
UL 248-13

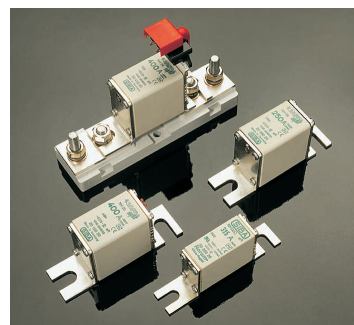
Features / Benefits

- ▶ Extremely high interrupting rating 100 kA – 300 kA
- ▶ Voltage rating AC 660 V – AC 1000 V
- ▶ Protection of Power Semiconductors according to IEC 60269-1 and -4
- ▶ Complies with DIN 43653 – sizes 000 and 00 with or without Topindicator and trip microswitch
- ▶ aR class 10 A–400 A according to IEC 60269-4 and DIN VDE 0636-40
- ▶ Fuse Bases and Accessories are available

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

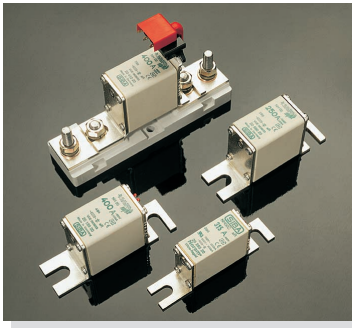
SIZES 000 AND 00



Selection Guide

Size	Rated Voltage AC	Fixing Center	Indicator *	Part No. Type	Selector Guide Page	Techn. Data Page
000	660 V	3.15" (80 mm)	with Topindicator	20 282 04	URB 3	URB 10
000	660 V	3.15" (80 mm)	without Topindicator	20 282 41	URB 3	URB 10
000	660 V	3.15" (80 mm)	with microswitch fitting	20 558 04	URB 4	URB 10
000	690/700 V	3.15" (80 mm)	with Topindicator	20 282 20	URB 3	URB 11
000	690/700 V	3.15" (80 mm)	without Topindicator	20 282 21	URB 3	URB 11
000	690/700 V	3.15" (80 mm)	with microswitch fitting	20 558 20	URB 4	URB 11
00	660 V	3.15" (80 mm)	with Topindicator	20 189 04	URB 5	URB 12
00	660 V	3.15" (80 mm)	without Topindicator	20 189 41	URB 5	URB 12
00	660 V	3.15" (80 mm)	with microswitch fitting	20 412 04	URB 6	URB 12
00	690/700 V	3.15" (80 mm)	with Topindicator	20 189 20	URB 5	URB 13
00	690/700 V	3.15" (80 mm)	without Topindicator	20 189 21	URB 5	URB 13
00	690/700 V	3.15" (80 mm)	with microswitch fitting	20 412 20	URB 7	URB 13
00	1000 V	3.15" (80 mm)	with Topindicator	20 560 20	URB 8	URB 14
00	1000 V	3.15" (80 mm)	without Topindicator	20 560 21	URB 8	URB 14
00	1000 V	3.15" (80 mm)	with microswitch fitting	20 562 20	URB 9	URB 14
Fuse Base	1000 V			21 189 01		URB 15
Microswitch	250 V			28 002 05		URB 15

* Minimum operating voltage for Topindicator 6.5 V



FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD

SIZES 000 AND 00

Size
000

Rated voltage
AC 660 V

Standard
DIN 43653

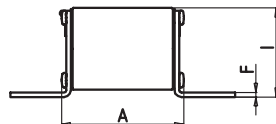
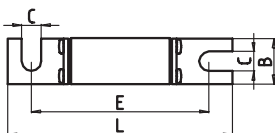
Rated current	Part No. with Topindicator	Part No. without Topindicator	UL Rec.	Weight (kg/100)	Pack	
16 A	20 282 04	20 282 41		17	6	
20 A	20 282 04	20 282 41		17	6	
25 A	20 282 04	20 282 41		17	6	
32 A	20 282 04	20 282 41		17	6	
35 A	20 282 04	20 282 41		17	6	
40 A	20 282 04	20 282 41		17	6	
50 A	20 282 04	20 282 41		17	6	
63 A	20 282 04	20 282 41		17	6	
80 A	20 282 04	20 282 41		17	6	
100 A	20 282 04	20 282 41		17	6	
125 A	20 282 04	20 282 41		17	6	
160 A	20 282 04	20 282 41		17	6	

Size
000

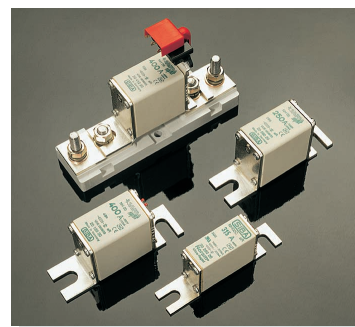
Rated voltage
AC 690/700 V

Standard
DIN 43653

Rated current	Part No. with Topindicator	Part No. without Topindicator	UL Rec.	Weight (kg/100)	Pack	
32 A	20 282 20	20 282 21	✓	17	6	
35 A	20 282 20	20 282 21	✓	17	6	
40 A	20 282 20	20 282 21	✓	17	6	
50 A	20 282 20	20 282 21	✓	17	6	
63 A	20 282 20	20 282 21	✓	17	6	
80 A	20 282 20	20 282 21	✓	17	6	
100 A	20 282 20	20 282 21	✓	17	6	
125 A	20 282 20	20 282 21	✓	17	6	
160 A	20 282 20	20 282 21	✓	17	6	
200 A	20 282 20	20 282 21	✓	17	6	
250 A	20 282 20	20 282 21	✓	17	6	
315 A	20 282 20	20 282 21	✓	17	6	



A	2.17" (55 mm)
B	0.80" (20 mm)
C	0.33" (8.5 mm)
D	0.80" (20.4 mm)
E	3.07" (78 mm)
F	0.08" (2 mm)
I	1.54" (39 mm)
L_(max)	3.94" (100 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

SIZES 000 AND 00

Size
000

Rated voltage
AC 660 V

Standard
DIN 43653

Rated current	Part No. Topindicator and fitting for microswitch	UL Rec.	Weight (kg/100)	Pack
16 A	20 558 04		17	6
20 A	20 558 04		17	6
25 A	20 558 04		17	6
32 A	20 558 04		17	6
35 A	20 558 04		17	6
40 A	20 558 04		17	6
50 A	20 558 04		17	6
63 A	20 558 04		17	6
80 A	20 558 04		17	6
100 A	20 558 04		17	6
125 A	20 558 04		17	6
160 A	20 558 04		17	6

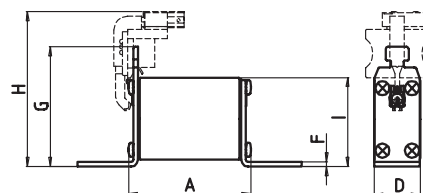
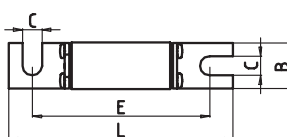
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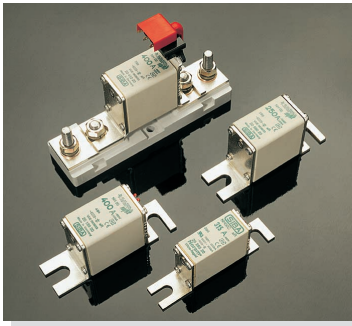
Rated voltage
AC 690/700 V

Standard
DIN 43653

Rated current	Part No. Topindicator and fitting for microswitch	UL Rec.	Weight (kg/100)	Pack
32 A	20 558 20		18	6
35 A	20 558 20		18	6
40 A	20 558 20		18	6
50 A	20 558 20		18	6
63 A	20 558 20		18	6
80 A	20 558 20		18	6
100 A	20 558 20		18	6
125 A	20 558 20		18	6
160 A	20 558 20		18	6
180 A	20 558 20		18	6
200 A	20 558 20		18	6
250 A	20 558 20		18	6
315 A	20 558 20		18	6

A 2.17" (55 mm)	F 0.08" (2 mm)
B 0.80" (20 mm)	G 2.10" (53 mm)
C 0.33" (8,5 mm)	H 2.76" (70 mm)
D 0.80" (20,4 mm)	I 1.54" (39 mm)
E 3.07" (78 mm)	L 3.94" (100 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

SIZES 000 AND 00

Size
00

Rated voltage
AC 660 V

Standard
DIN 43653

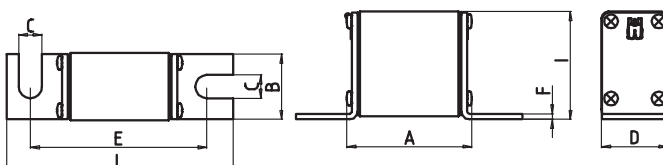
Rated current	Part No. with Topindicator	Part No. without Topindicator	UL Rec.	Weight (kg/100)	Pack
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20 A	20 189 04	20 189 41		19	3
25 A	20 189 04	20 189 41		19	3
32 A	20 189 04	20 189 41		19	3
35 A	20 189 04	20 189 41		19	3
40 A	20 189 04	20 189 41		19	3
50 A	20 189 04	20 189 41		19	3
63 A	20 189 04	20 189 41		19	3
80 A	20 189 04	20 189 41		19	3
100 A	20 189 04	20 189 41		19	3
125 A	20 189 04	20 189 41		19	3
160 A	20 189 04	20 189 41		19	3
200 A	20 189 04	20 189 41		19	3
250 A	20 189 04	20 189 41		19	3

Size
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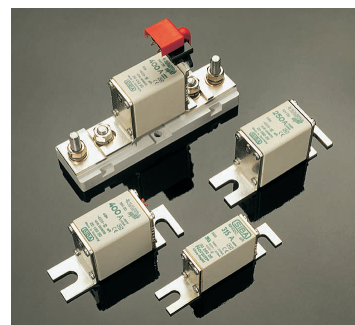
Rated voltage
AC 690/700 V

Standard
DIN 43653

Rated current	Part No. with Topindicator	Part No. without Topindicator	UL Rec.	Weight (kg/100)	Pack
32 A	20 189 20	20 189 21	✓	21	3
35 A	20 189 20	20 189 21	✓	21	3
40 A	20 189 20	20 189 21	✓	21	3
50 A	20 189 20	20 189 21	✓	21	3
63 A	20 189 20	20 189 21	✓	21	3
80 A	20 189 20	20 189 21	✓	21	3
100 A	20 189 20	20 189 21	✓	21	3
125 A	20 189 20	20 189 21	✓	21	3
160 A	20 189 20	20 189 21	✓	21	3
200 A	20 189 20	20 189 21	✓	21	3
250 A	20 189 20	20 189 21	✓	21	3
315 A	20 189 20	20 189 21	✓	21	3
350 A	20 189 20	20 189 21	✓	21	3
400 A	20 189 20	20 189 21		21	3



A	2.17" (55 mm)	F	0.10" (2,5 mm)
B	1.13" (28,8 mm)	I	1.54" (39 mm)
C	0.40" (10,3 mm)	L_(max)	4.13" (105 mm)
D	1.16" (29,5 mm)		
E	3.07" (78 mm)		



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

SIZES 000 AND 00

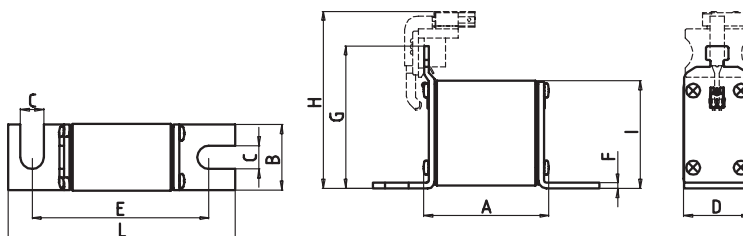
Size
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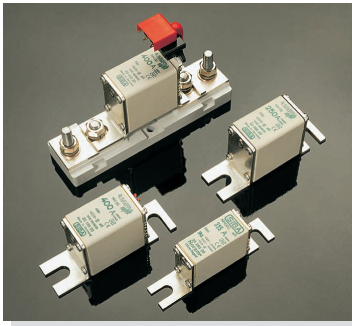
Rated voltage
AC 660 V

Standard
DIN 43653

Rated current	Part No. Topindicator and fitting for microswitch		UL Rec.	Weight (kg/100)	Pack	
16 A	20 412 04			21	3	
20 A	20 412 04			21	3	
25 A	20 412 04			21	3	
32 A	20 412 04			21	3	
35 A	20 412 04			21	3	
40 A	20 412 04			21	3	
50 A	20 412 04			21	3	
63 A	20 412 04			21	3	
80 A	20 412 04			21	3	
100 A	20 412 04			21	3	
125 A	20 412 04			21	3	
160 A	20 412 04			21	3	
200 A	20 412 04			21	3	
250 A	20 412 04			21	3	

A 2.17" (55 mm)	F 0.10" (2.5 mm)
B 1.13" (28.8 mm)	G 2.48" (63 mm)
C 0.40" (10.3 mm)	H 3.15" (80 mm)
D 1.16" (29.5 mm)	I 1.54" (39 mm)
E 3.07" (78 mm)	L 4.13" (105 mm)





FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD

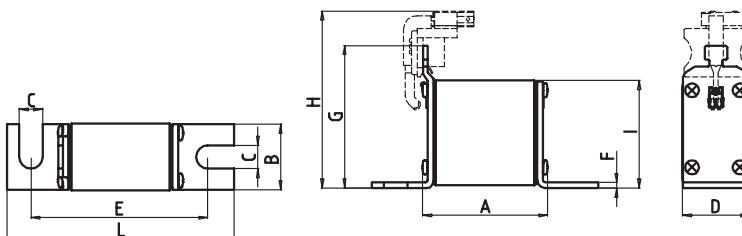
SIZES 000 AND 00

Size
00

Rated voltage
AC 690/700 V

Standard
DIN 43653

Rated current	Part No. Topindicator and fitting for microswitch		UL Rec.	Weight (kg/100)	Pack	
32 A	20 412 20			21	3	
35 A	20 412 20			21	3	
40 A	20 412 20			21	3	
50 A	20 412 20			21	3	
63 A	20 412 20			21	3	
80 A	20 412 20			21	3	
100 A	20 412 20			21	3	
125 A	20 412 20			21	3	
160 A	20 412 20		✓	21	3	
200 A	20 412 20		✓	21	3	
250 A	20 412 20		✓	21	3	
315 A	20 412 20		✓	21	3	
350 A	20 412 20		✓	21	3	
400 A	20 412 20			21	3	

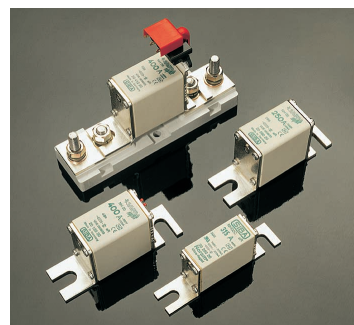


A	2.17" (55 mm)	F	0.10" (2.5 mm)
B	1.13" (28.8 mm)	G	2.48" (63 mm)
C	0.40" (10.3 mm)	H	3.15" (80 mm)
D	1.16" (29.5 mm)	I	1.54" (39 mm)
E	3.07" (78 mm)	L_(max)	4.13" (105 mm)

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

SIZES 000 AND 00



Size
00

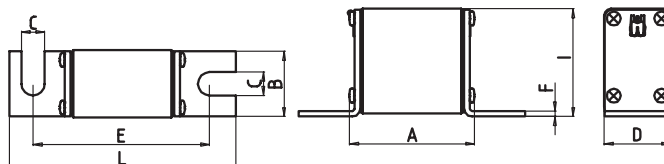
Rated voltage
AC 1000 V

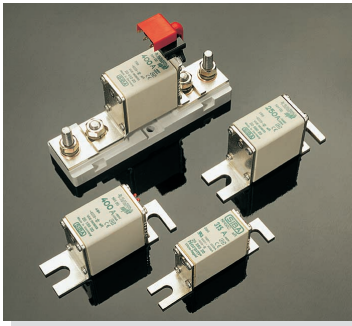
Standard
DIN 43653

Rated current	Part No. with Topindicator	Part No. without Topindicator	UL Rec.	Weight (kg/100)	Pack	
32 A	20 560 20	20 560 21		21	3	
40 A	20 560 20	20 560 21		21	3	
50 A	20 560 20	20 560 21		21	3	
63 A	20 560 20	20 560 21		21	3	
80 A	20 560 20	20 560 21		21	3	
100 A	20 560 20	20 560 21		21	3	
125 A	20 560 20	20 560 21		21	3	
160 A	20 560 20	20 560 21		21	3	
200 A	20 560 20	20 560 21		21	3	
250 A	20 560 20	20 560 21		21	3	
315 A (AC 900 V)	20 560 20	20 560 21		21	3	

A 2.17" (55 mm)
B 1.13" (28,8 mm)
C 0.40" (10,3 mm)
D 1.16" (29,5 mm)
E 3.07" (78 mm)

F 0.10" (2,5 mm)
I 1.54" (39 mm)
L_(max) 4.13" (105 mm)



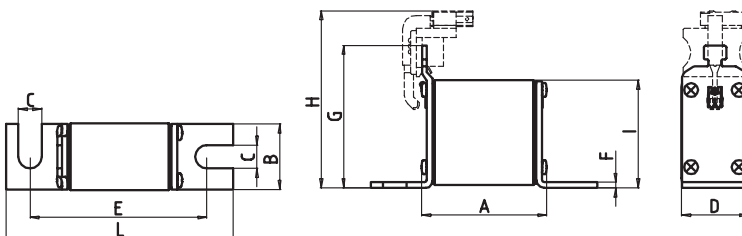


FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD

SIZES 000 AND 00

Size 00	Rated voltage AC 1000 V	Standard DIN 43653
--------------------------	--	-------------------------------------

Rated current	Part No. Topindicator and fitting for microswitch	UL Rec.	Weight (kg/100)	Pack
32 A	20 562 20		21	3
40 A	20 562 20		21	3
50 A	20 562 20		21	3
63 A	20 562 20		21	3
80 A	20 562 20		21	3
100 A	20 562 20		21	3
125 A	20 562 20		21	3
160 A	20 562 20		21	3
200 A	20 562 20		21	3
250 A	20 562 20		21	3
315 A (AC 900 V)	20 562 20		21	3



A	2.17" (55 mm)	F	0.10" (2.5 mm)
B	1.13" (28.8 mm)	G	2.48" (63 mm)
C	0.40" (10.3 mm)	H	3.15" (80 mm)
D	1.16" (29.5 mm)	I	1.54" (39 mm)
E	3.07" (78 mm)	L_(max)	4.13" (105 mm)

Size
000

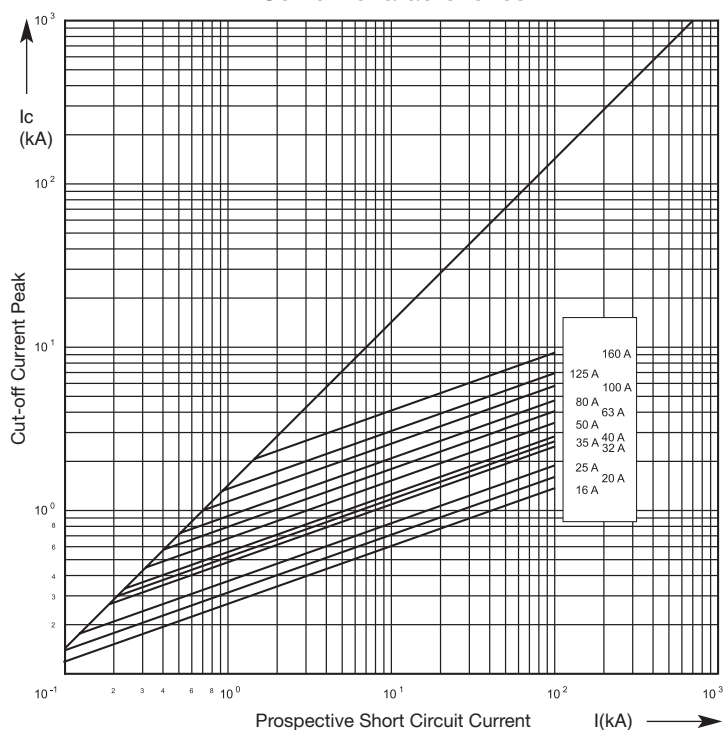
Rated voltage
AC 660 V

Operating class
aR

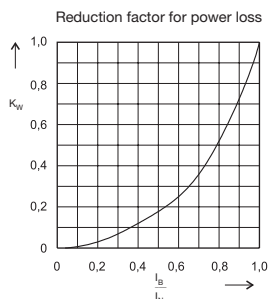
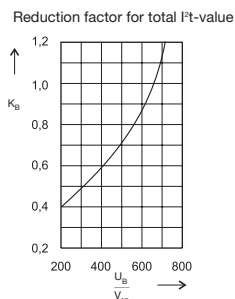
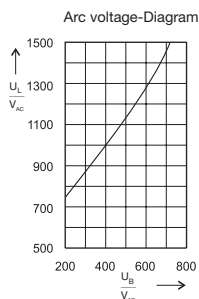
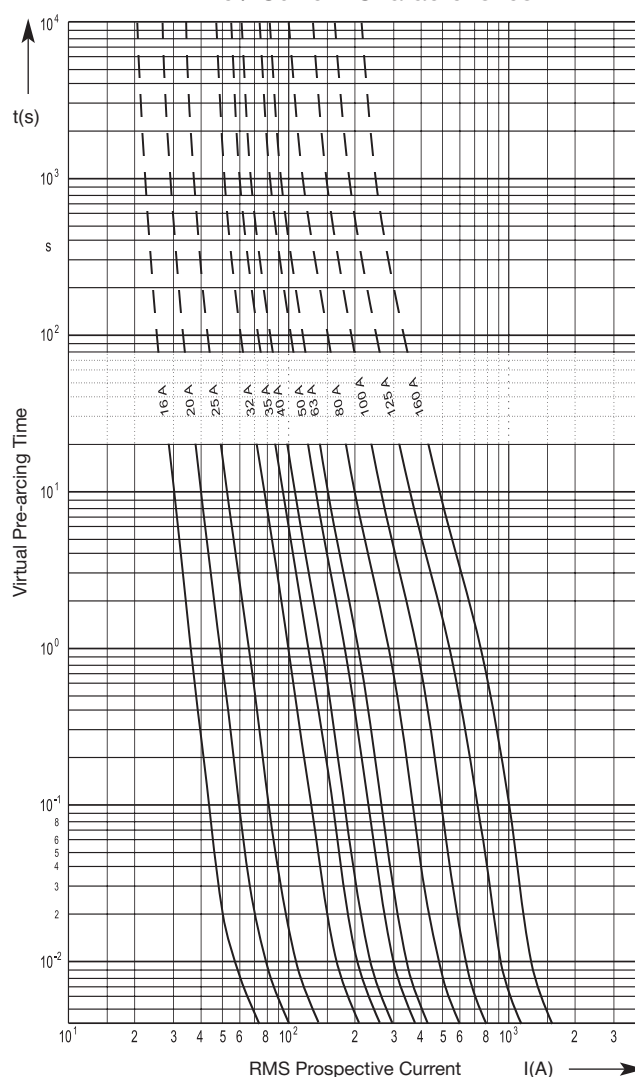
Rated breaking capacity
100 kA

Rated current	Part No. with Topindicator	Part No. without Topindicator	Part No. Topindicator and fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
16 A	20 282 04	20 282 41	20 558 04	5	10	70
20 A	20 282 04	20 282 41	20 558 04	6	17	120
25 A	20 282 04	20 282 41	20 558 04	7	29	200
32 A	20 282 04	20 282 41	20 558 04	9	66	450
35 A	20 282 04	20 282 41	20 558 04	9	81	550
40 A	20 282 04	20 282 41	20 558 04	10	103	700
50 A	20 282 04	20 282 41	20 558 04	11	184	1,300
63 A	20 282 04	20 282 41	20 558 04	13	330	2,300
80 A	20 282 04	20 282 41	20 558 04	18	512	3,500
100 A	20 282 04	20 282 41	20 558 04	22	930	6,400
125 A	20 282 04	20 282 41	20 558 04	24	1,650	11,200
160 A	20 282 04	20 282 41	20 558 04	28	4,250	29,000

Cut-off-characteristics



Time / Current Characteristics



Size
000

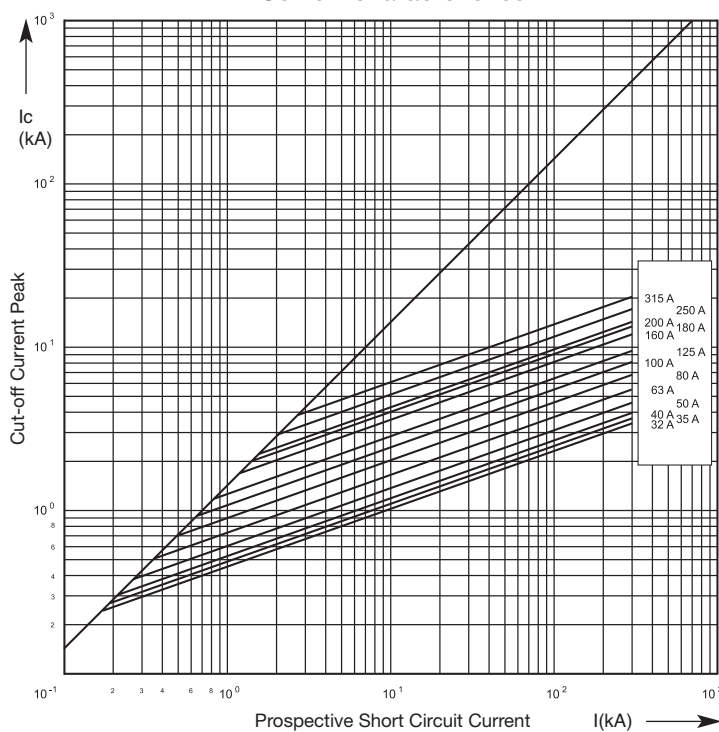
Rated voltage
AC 690/700 V

Operating class
aR

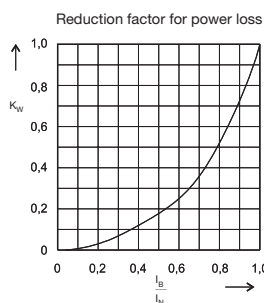
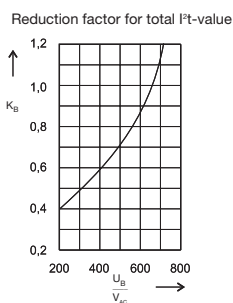
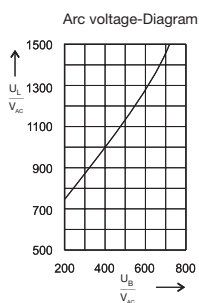
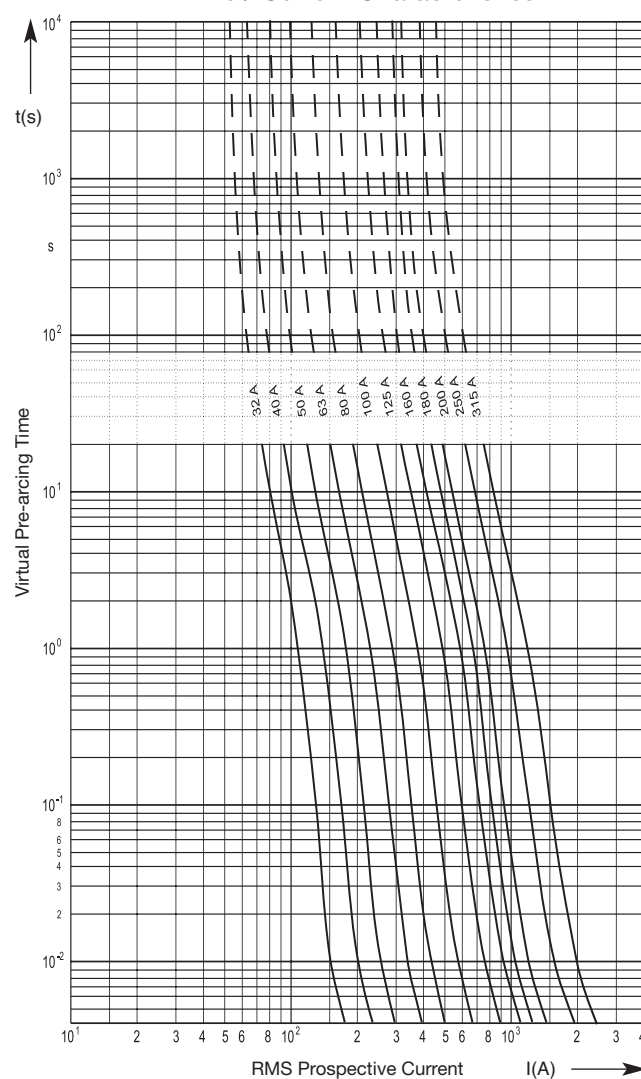
Rated breaking capacity
600 V / 300 kA · 700 V / 200 kA

Rated current	Part No. with Topindicator	Part No. without Topindicator	Part No. Topindicator and fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
32 A	20 282 20	20 282 21	20 558 20	8	52	290
35 A	20 282 20	20 282 21	20 558 20	9	66	360
40 A	20 282 20	20 282 21	20 558 20	10	90	500
50 A	20 282 20	20 282 21	20 558 20	12	140	770
63 A	20 282 20	20 282 21	20 558 20	14	250	1,400
80 A	20 282 20	20 282 21	20 558 20	18	470	2,600
100 A	20 282 20	20 282 21	20 558 20	22	730	4,000
125 A	20 282 20	20 282 21	20 558 20	26	1,300	7,200
160 A	20 282 20	20 282 21	20 558 20	32	2,800	15,400
180 A	20 282 20	20 282 21	20 558 20	35	3,700	20,400
200 A	20 282 20	20 282 21	20 558 20	39	4,500	25,000
250 A	20 282 20	20 282 21	20 558 20	47	8,000	44,000
315 A	20 282 20	20 282 21	20 558 20	58	14,000	77,000

Cut-off-characteristics



Time / Current Characteristics



Size
00

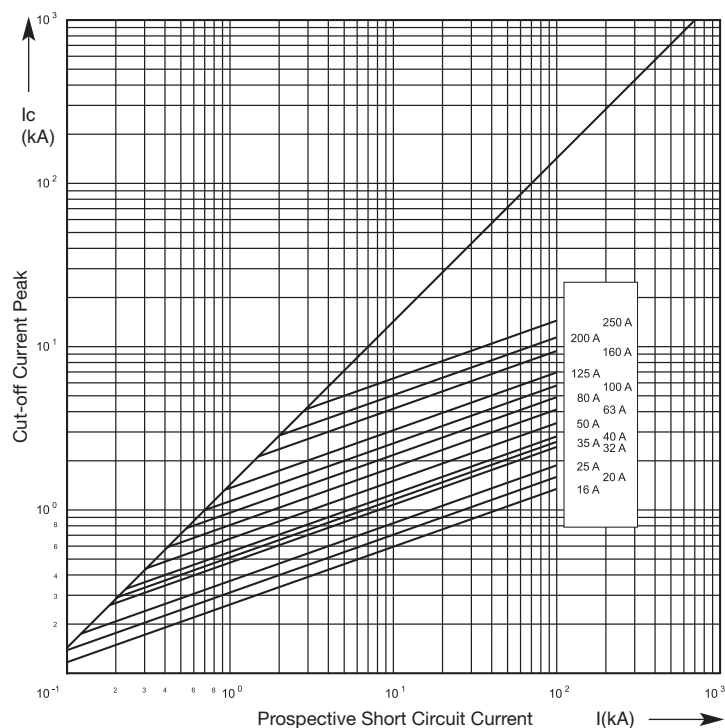
Rated voltage
AC 660 V

Operating class
aR

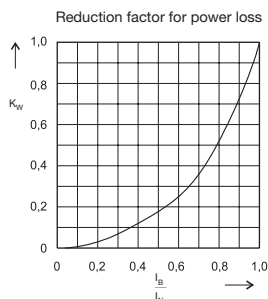
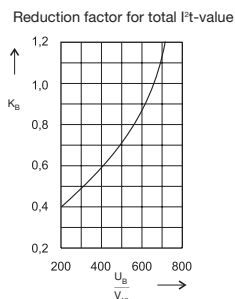
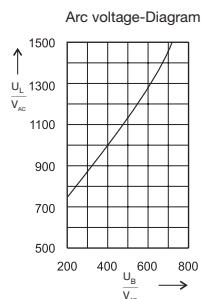
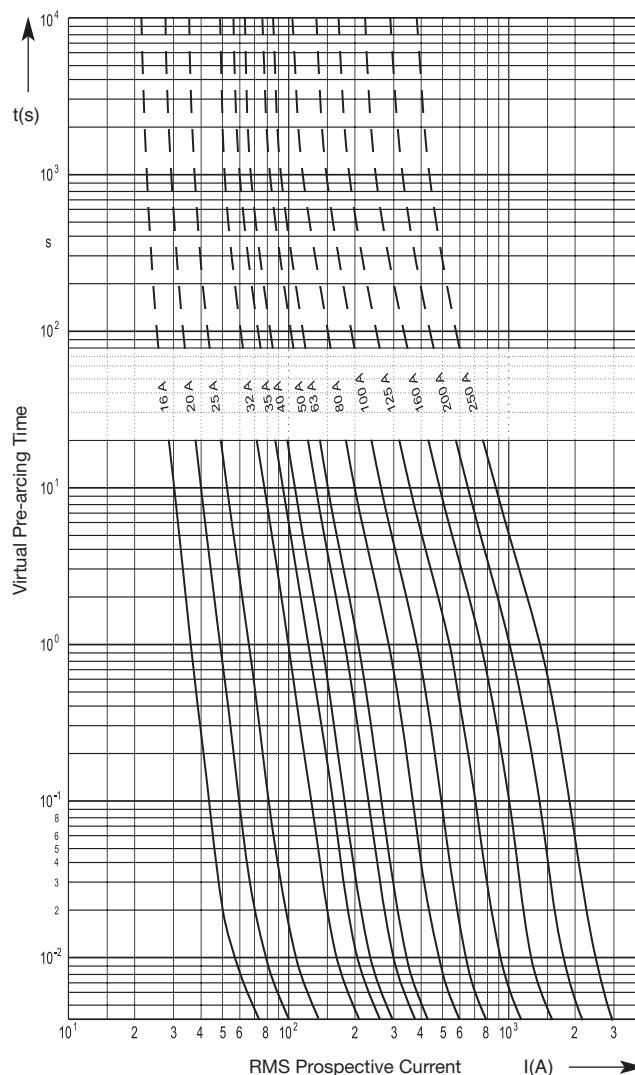
Rated breaking capacity
100 kA

Rated current	Part No. with Topindicator	Part No. without Topindicator	Part No. Topindicator and fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
16 A	20 189 04	20 189 41	20 412 04	4.6	10	70
20 A	20 189 04	20 189 41	20 412 04	5.5	17	120
25 A	20 189 04	20 189 41	20 412 04	6.7	29	200
32 A	20 189 04	20 189 41	20 412 04	8.9	66	450
35 A	20 189 04	20 189 41	20 412 04	9.2	81	550
40 A	20 189 04	20 189 41	20 412 04	9.8	103	700
50 A	20 189 04	20 189 41	20 412 04	11.0	184	1,300
63 A	20 189 04	20 189 41	20 412 04	13.0	330	2,300
80 A	20 189 04	20 189 41	20 412 04	15.0	512	3,500
100 A	20 189 04	20 189 41	20 412 04	18.0	930	6,400
125 A	20 189 04	20 189 41	20 412 04	22.0	1,650	11,200
160 A	20 189 04	20 189 41	20 412 04	26.0	4,250	29,000
200 A	20 189 04	20 189 41	20 412 04	28.0	8,000	54,400
250 A	20 189 04	20 189 41	20 412 04	31.0	16,800	114,300

Cut-off-characteristics



Time / Current Characteristics



Size
00

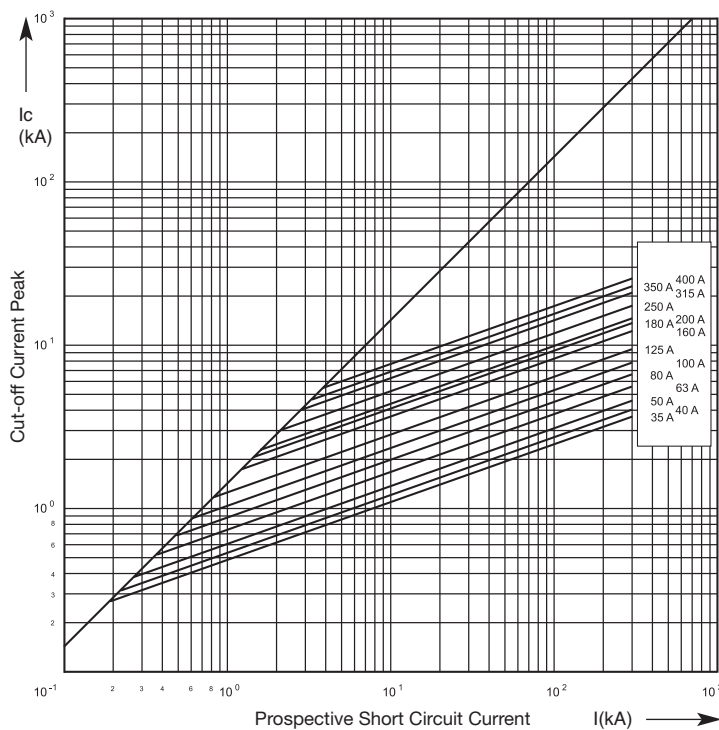
Rated voltage
AC 690/700 V

Operating class
aR

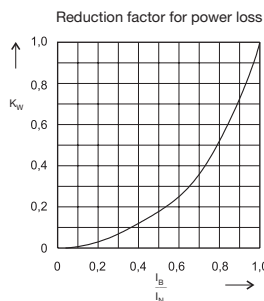
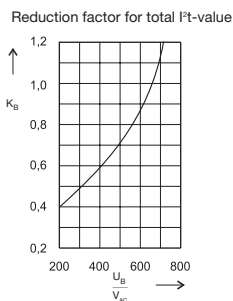
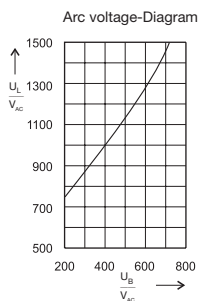
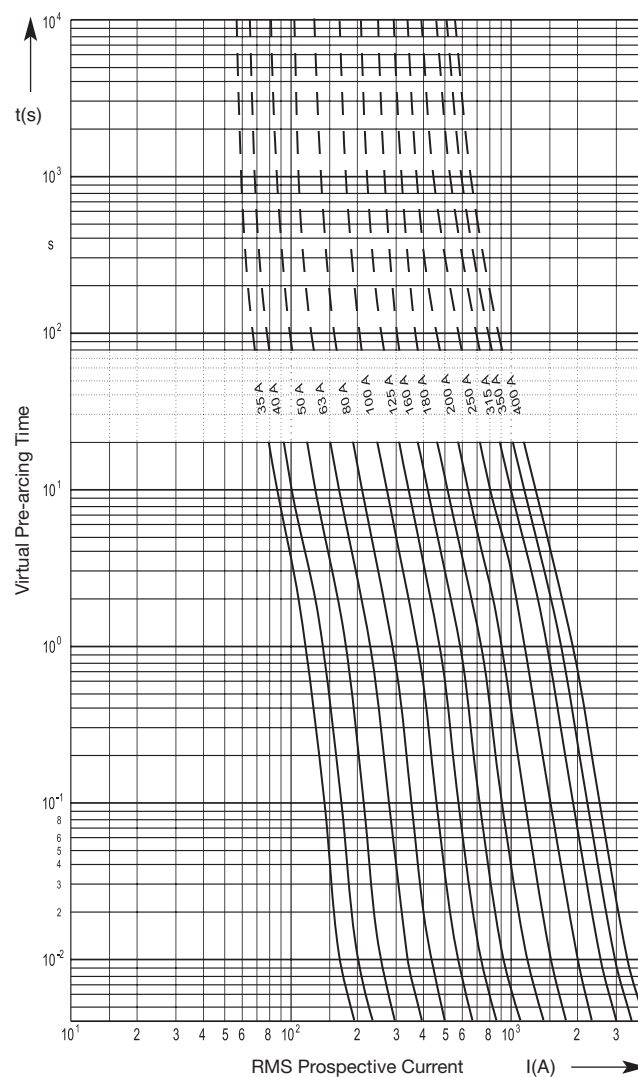
Rated breaking capacity
600 V / 300 kA · 700 V / 200 kA

Rated current	Part No. with Topindicator	Part No. without Topindicator	Part No. Topindicator and fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
35 A	20 189 20	20 189 21	20 412 20	8	66	360
40 A	20 189 20	20 189 21	20 412 20	10	90	500
50 A	20 189 20	20 189 21	20 412 20	12	140	770
63 A	20 189 20	20 189 21	20 412 20	14	250	1,400
80 A	20 189 20	20 189 21	20 412 20	17	470	2,600
100 A	20 189 20	20 189 21	20 412 20	21	730	4,000
125 A	20 189 20	20 189 21	20 412 20	25	1,300	7,200
160 A	20 189 20	20 189 21	20 412 20	31	2,800	15,400
180 A	20 189 20	20 189 21	20 412 20	34	4,200	23,100
200 A	20 189 20	20 189 21	20 412 20	37	5,000	27,500
250 A	20 189 20	20 189 21	20 412 20	44	8,500	46,800
315 A	20 189 20	20 189 21	20 412 20	53	15,600	86,000
350 A	20 189 20	20 189 21	20 412 20	57	20,000	110,000
400 A	20 189 20	20 189 21	20 412 20	68	28,400	156,000

Cut-off-characteristics



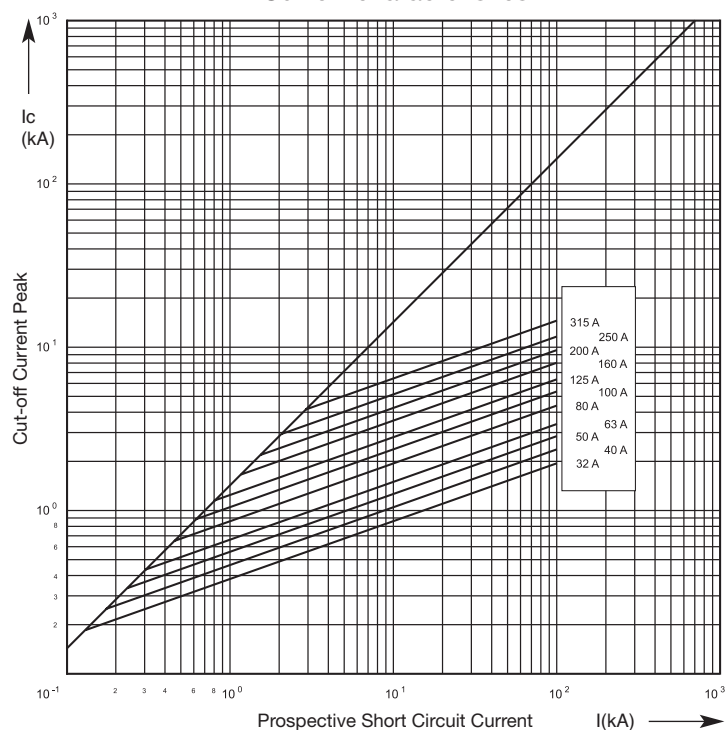
Time / Current Characteristics



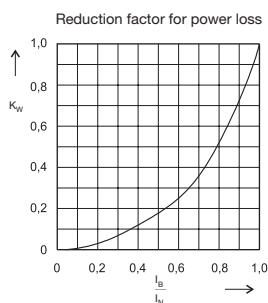
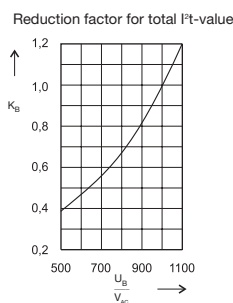
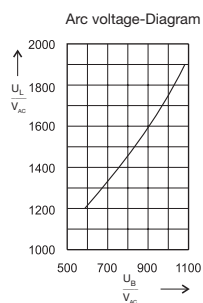
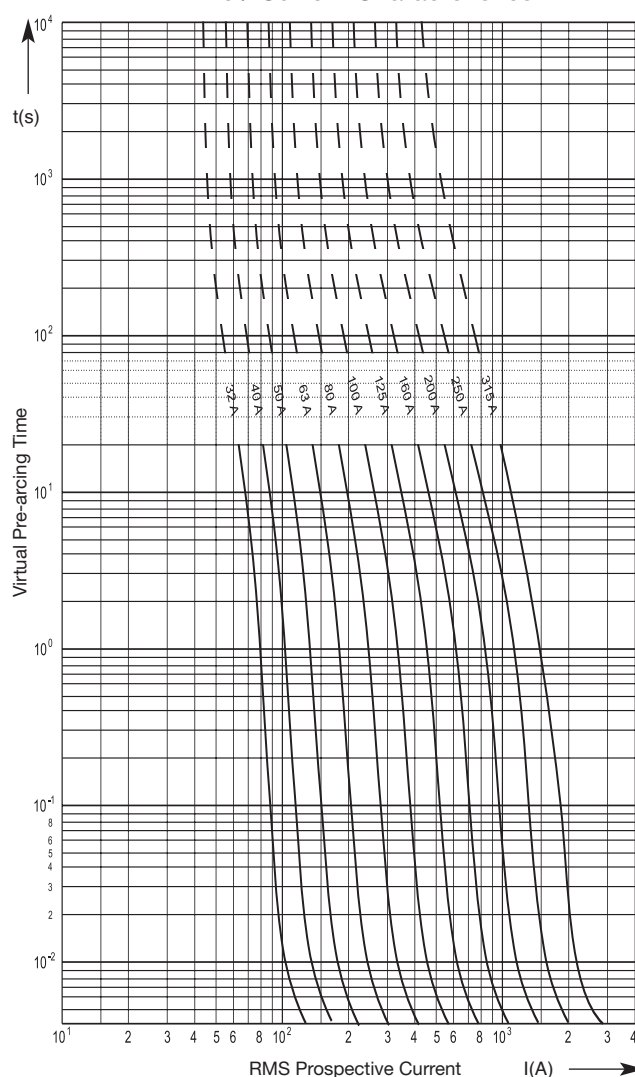
Size 00	Rated voltage AC 1000 V		Operating class aR	Rated breaking capacity 100 kA		
Rated current	Part No. with Topindicator	Part No. without Topindicator	Part No. Topindicator and fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value at 1000 V A ² s
32 A	20 560 20	20 560 21	20 562 20	14	32	220
40 A	20 560 20	20 560 21	20 562 20	16	58	400
50 A	20 560 20	20 560 21	20 562 20	18	100	700
63 A	20 560 20	20 560 21	20 562 20	22	180	1,200
80 A	20 560 20	20 560 21	20 562 20	25	410	2,800
100 A	20 560 20	20 560 21	20 562 20	28	740	5,000
125 A	20 560 20	20 560 21	20 562 20	32	1,300	9,000
160 A	20 560 20	20 560 21	20 562 20	40	2,600	17,500
200 A	20 560 20	20 560 21	20 562 20	46	4,600	31,000
250 A	20 560 20	20 560 21	20 562 20	51	8,200	55,000
315 A	20 560 20	20 560 21	20 562 20	58	16,000	96,000

(AC 900 V)

Cut-off-characteristics



Time / Current Characteristics

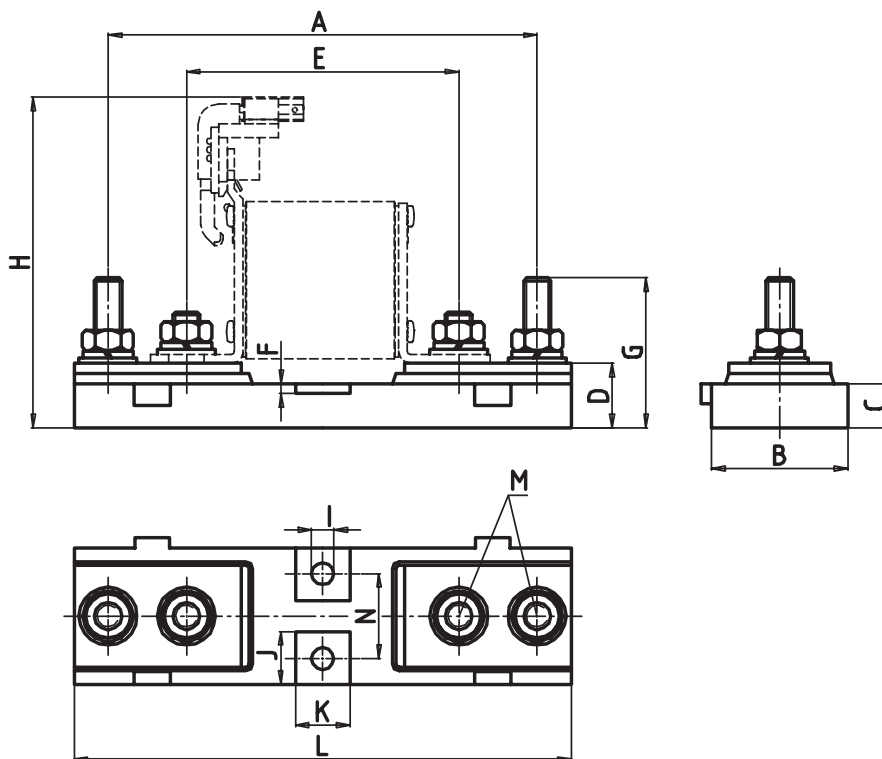


Fuse Base
400 A

Size
000 and 00

Rated voltage
AC 1000 V

Standard
DIN 43653



600 V

Part No. 21 189 01

Rated Current: 400 A

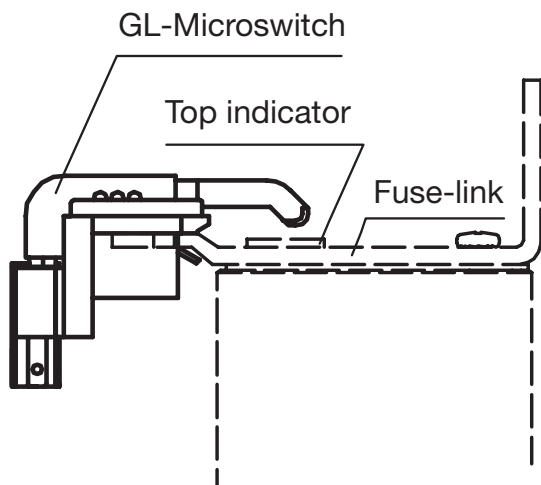
Rated Power Acceptance: 34 W

Nut Torque: 22 Nm

A	4.96" (126 mm)
B	1.57" (40 mm)
C	0.50" (13 mm)
D	0.75" (19 mm)
E	3.15" (80 mm)
F	0.12" (3 mm)
G	1.73" (44 mm)
H	3.82" (97 mm)
I	0.26" (6,5 mm)
J	0.60" (15,5 mm)
K	0.63" (16 mm)
L_(max)	5.75" (146 mm)
M	M 8
N	0.98" (25 mm)

Microswitch

Rated voltage
AC 250 V



Part No. 28 002 05

Rated voltage

Breaking capacity

AC 250 V

non inductive Load	inductive Load
5 A	5 A

Rated voltage

Breaking capacity

DC 60 V	500 mA	200 mA
DC 24 V	2 A	2 A

non inductive Load	inductive Load (L/R = 25 ms)
500 mA	200 mA

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D



Voltage rating: AC 440 V – AC 500 V

Current rating: 2 A to 200 A

Class: gR / aR

Standards: IEC 60269-4

DIN VDE 0636-40

DIN 49515 / 49360

SIBA D-Fuses, also known as type Diazed/ Neozed fuses are supplied in eight different sizes, ND, DII, DIII, DVI, DV, D01, D02, D03. All fuses have color coded blown fuse indicators.

Features / Benefits

- ▶ Class gR for rated currents up to 100 A
Class aR for rated currents above 100 A
- ▶ All fuses have blown fuse indicators
- ▶ Protection of Power Semiconductors according to IEC 60269-4
- ▶ Fuse Bases and Accessories are available

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D

**Selection
Guide**

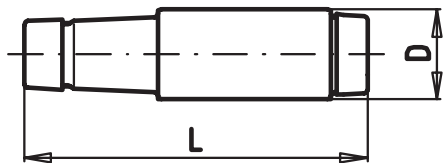
Type	size	Rated Voltage	Part No.	Selector Guide Page	
ND	E 16	500 V	10 002 07	URD 3	
DII	E 27	500 V	10 005 07	URD 4	
DIII	E 33	500 V	10 007 07	URD 5	
DIV	R 1¼"	500 V	10 009 07	URD 6	
DV	R 2"	500 V	10 010 07	URD 7	
D01	E 14	440 V	10 027 07	URD 8	
D02	E 18	440 V	10 028 07	URD 9	
D03	M 30x2	440 V	10 029 07	URD 10	



FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD TYPE D0 / D

Type ND	Rated voltage AC 500 V	Size E 16	Standard DIN 49360
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Rated current	Part No.	Weight (kg/100)	Pack	
2 A	10 002 07	1.6	50	
4 A	10 002 07	1.6	50	
6 A	10 002 07	1.6	50	
10 A	10 002 07	1.6	50	
16 A	10 002 07	1.6	50	
20 A	10 002 07	1.6	50	
25 A	10 002 07	1.6	50	
30 A	10 002 07	1.6	50	



D	0.50" (12.5 mm)
L	1.97" (50 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D

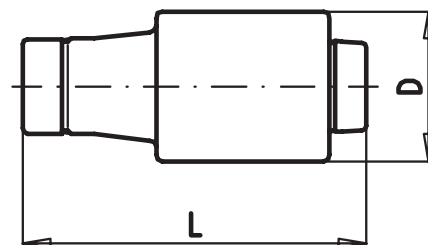
Type
D II

Rated voltage
AC 500 V

SIZE
E 27

Standard
DIN 49515

Rated current	Part No.	Weight (kg/100)	Pack	
2 A	10 005 07	3.1	5	
4 A	10 005 07	3.1	5	
6 A	10 005 07	3.1	5	
10 A	10 005 07	3.1	5	
16 A	10 005 07	3.1	5	
20 A	10 005 07	3.1	5	
25 A	10 005 07	3.1	5	
30 A	10 005 07	3.1	5	



D 0.87" (22 mm)

L 1.97" (50 mm)

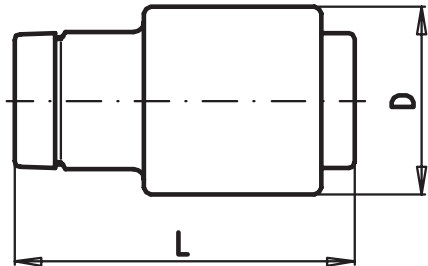


FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD

TYPE D0 / D

Type	Rated voltage	Size	Standard
D III	AC 500 V	E 33	DIN 49515

Rated current	Part No.	Weight (kg/100)	Pack
35 A	10 007 07	3.1	5
50 A	10 007 07	3.1	5
63 A	10 007 07	3.1	5



D	1.06" (27 mm)
L	1.97" (50 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D

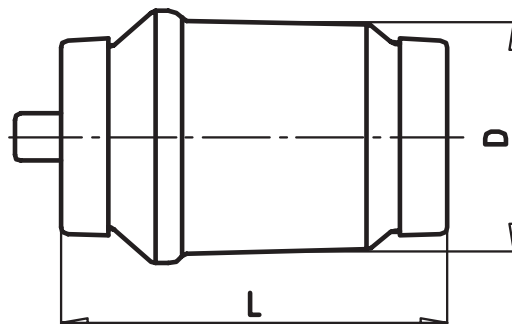
Type
D IV

Rated voltage
AC 500 V

Size
R 1¼"

Standard
DIN 49515

Rated current	Part No.	Weight (kg/100)	Pack
80 A	10 009 07	11.6	5
100 A	10 009 07	11.6	5



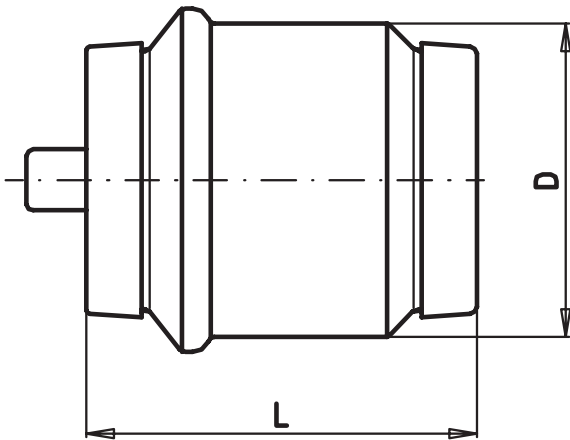
D 1.30" (33 mm)
L 1.97" (50 mm)



FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD TYPE D0 / D

Type D V	Rated voltage AC 500 V	Size R 2"	Standard DIN 49365
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Rated current	Part No.	Weight (kg/100)	Pack
125 A	10 010 07	11.6	5
160 A	10 010 07	11.6	5
200 A	10 010 07	11.6	5



D	1.80" (46 mm)
L	1.97" (50 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D

Type
D 01

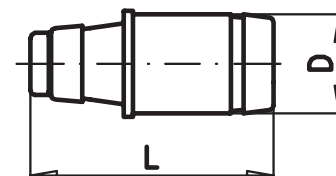
Rated voltage
AC 440 V

Size
E 14

Standard
DIN 49522

Rated current	Part No.	Weight (kg/100)	Pack
2 A	10 027 07	0.62	50
4 A	10 027 07	0.62	50
6 A	10 027 07	0.62	50
10 A	10 027 07	0.62	50
16 A	10 027 07	0.62	50

D 0.43" (11 mm)
L 1.42" (36 mm)

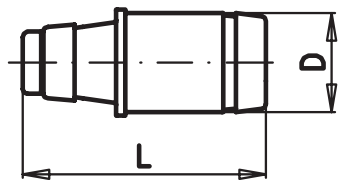




FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD TYPE D0 / D

Type	Rated voltage	Size	Standard
D 02	AC 440 V	E 18	DIN 49522

Rated current	Part No.	Weight (kg/100)	Pack	
20 A	10 028 07	1.4	30	
25 A	10 028 07	1.4	30	
35 A	10 028 07	1.4	30	
50 A	10 028 07	1.4	30	
63 A	10 028 07	1.4	30	



D	0.60" (15.3 mm)
L	1.42" (36 mm)

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE D0 / D



Type
D 03

Rated voltage
AC 440 V

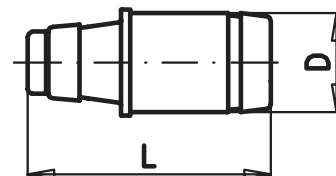
Size
M 30x2

Standard
DIN 49522

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
80 A	10 029 07		4.2	30	
100 A	10 029 07		4.2	30	

D 0.90" (22.5 mm)

L 1.70" (43 mm)



DC-APPLICATION / TRACTION FUSE



Class: gR/aR

Voltage rating: DC 660 V – DC 5000 V

Current rating: 6 A to 800 A

Standards: UIC 550

IEC 60269-4

DIN VDE 0636-40

SIBA-DC-Fuses are offered in clip-mounted and bolt-design. The fuses are used for applications in traction-, battery, and railway-main-circuits. They are largely used for the protection of frequency-inverters.

Because the application is possible in a big variety one should contact SIBA to have information regarding the use at different voltage ratings, classes or L/R's.

Features / Benefits

- ▶ Designed for heavy duty applications
- ▶ Shock and vibration proved
- ▶ Some types with additional microswitches
- ▶ Developed according customers specification
- ▶ Individual tested time constants
- ▶ Designed for long lasting live under severe service conditions



Selection Guide

Size	Rated Voltage DC	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page	
14 x 51	700 V	without indicator	50 118 06	URDC 3	URDC 15	
14 x 51	700 V	without indicator	50 201 06	URDC 3	URDC 16	
27 x 60	660 V	without indicator	50 190 06	URDC 4	URDC 17	
27 x 60	660 V	with striker pin	50 191 06	URDC 5	URDC 17	
20 x 127	1000 V	with indicator	90 080 10	URDC 6	URDC 18	
20 x 127	1000 V	with striker pin	90 082 10	URDC 7	URDC 18	
20 x 127	1500 V	with striker pin	90 081 10	URDC 8	URDC 19	
20 x 190	1500 V	without indicator	90 090 10	URDC 9	URDC 20	
20 x 190	1500 V	with striker pin	90 092 10	URDC 10	URDC 20	
SQB-5000	5000 V	without indicator	90 200 20	URDC 11	URDC 21	
SQB-5000	5000 V	without indicator	90 210 20	URDC 12	URDC 21	
NH 4	1000 V	without indicator	90 083 10	URDC 13	URDC 22	
NH 1	750 V	with topindicator	20 556 04	URDC 14	URDC 23	



DC-APPLICATION / TRACTION FUSE

Size
14 x 51 mm

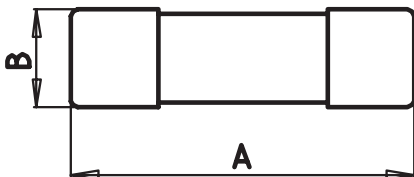
Rated voltage
DC 700 V

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	50 118 06	✓	2.2	10	
8 A	50 118 06	✓	2.2	10	
10 A	50 118 06	✓	2.2	10	
12 A	50 118 06	✓	2.2	10	
16 A	50 118 06	✓	2.2	10	
20 A	50 118 06	✓	2.2	10	
25 A	50 118 06	✓	2.2	10	
30 A	50 118 06	✓	2.2	10	
35 A	50 118 06		2.2	10	
40 A	50 118 06		2.2	10	
50 A	50 118 06		2.2	10	

Size
14 x 51 mm

Rated voltage
DC 700 V

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
10 A	50 201 06	✓	2.2	10	
12 A	50 201 06	✓	2.2	10	
16 A	50 201 06	✓	2.2	10	
20 A	50 201 06	✓	2.2	10	
25 A	50 201 06	✓	2.2	10	
32 A	50 201 06	✓	2.2	10	
40 A	50 201 06	✓	2.2	10	
50 A	50 201 06	✓	2.2	10	



A 2.01" (51 mm)
B 0.55" (14 mm)

DC-APPLICATION / TRACTION FUSE

Size
27 x 60 mm

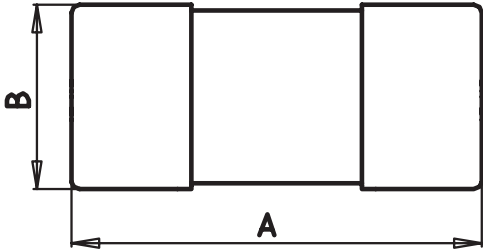
Rated voltage
DC 660 V

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
8 A	50 190 06		6.0	10	
10 A	50 190 06		6.0	10	
12 A	50 190 06		6.0	10	
16 A	50 190 06		6.0	10	
20 A	50 190 06		6.0	10	
25 A	50 190 06		6.0	10	
32 A	50 190 06		6.0	10	
40 A	50 190 06		6.0	10	
50 A	50 190 06		6.0	10	
50 A	50 190 06		6.0	10	
63 A	50 190 06		6.0	10	
80 A	50 190 06		6.0	10	
100 A	50 190 06		6.0	10	
110 A	50 190 06		6.0	10	

without striker pin

A2.36" (60 mm)

B1.06" (27 mm)

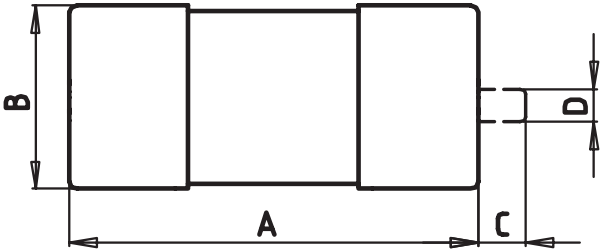




DC-APPLICATION / TRACTION FUSE

Size **27 x 60 mm** Rated voltage **DC 660 V** **with striker pin**

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
8 A	50 191 06		6.0	10	
10 A	50 191 06		6.0	10	
12 A	50 191 06		6.0	10	
16 A	50 191 06		6.0	10	
20 A	50 191 06		6.0	10	
25 A	50 191 06		6.0	10	
32 A	50 191 06		6.0	10	
40 A	50 191 06		6.0	10	
50 A	50 191 06		6.0	10	
50 A	50 191 06		6.0	10	
63 A	50 191 06		6.0	10	
80 A	50 191 06		6.0	10	
100 A	50 191 06		6.0	10	
110 A	50 191 06		6.0	10	



with striker pin	
A	2.36" (60 mm)
B	1.06" (27 mm)
C_{min}	0.28" (7 mm)
D	0.19" (4.9 mm)

DC-APPLICATION / TRACTION FUSE

Size
20 x 127 mm

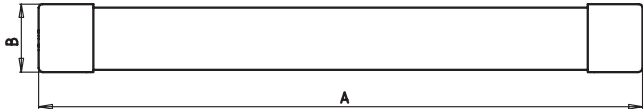
Rated voltage
DC 1000 V

with indicator

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	90 080 10		13.0	12	
8 A	90 080 10		13.0	12	
10 A	90 080 10		13.0	12	
12 A	90 080 10		13.0	12	
16 A	90 080 10		13.0	12	
20 A	90 080 10		13.0	12	
25 A	90 080 10		13.0	12	
32 A	90 080 10		13.0	12	
40 A	90 080 10		13.0	12	
50 A	90 080 10		13.0	12	
63 A	90 080 10		13.0	12	

A5.00" (127 mm)

B0.80" (20 mm)

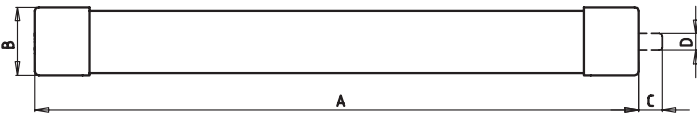




DC-APPLICATION / TRACTION FUSE

Size **20 x 127 mm** Rated voltage **DC 1000 V** with striker pin

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	90 082 10		13.0	12	
8 A	90 082 10		13.0	12	
10 A	90 082 10		13.0	12	
12 A	90 082 10		13.0	12	
16 A	90 082 10		13.0	12	
20 A	90 082 10		13.0	12	
25 A	90 082 10		13.0	12	
32 A	90 082 10		13.0	12	
40 A	90 082 10		13.0	12	
50 A	90 082 10		13.0	12	
63 A	90 082 10		13.0	12	



A	5.00" (127 mm)
B	0.80" (20 mm)
C _(min)	0.28" (7 mm)
D	0.20" (4.9 mm)

DC-APPLICATION / TRACTION FUSE

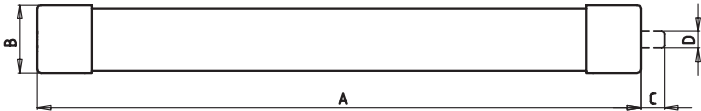
Size
20 x 127 mm

Rated voltage
DC 1500 V

with striker pin

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
5 A	90 081 10		14.0	12	
6 A	90 081 10		14.0	12	
8 A	90 081 10		14.0	12	
10 A	90 081 10		14.0	12	
12 A	90 081 10		14.0	12	
16 A	90 081 10		14.0	12	
20 A	90 081 10		14.0	12	
25 A	90 081 10		14.0	12	
32 A	90 081 10		14.0	12	
40 A	90 081 10		14.0	12	

- A5.00" (127 mm)
- B0.80" (20 mm)
- C_(min)0.28" (7 mm)
- D0.20" (4.9 mm)

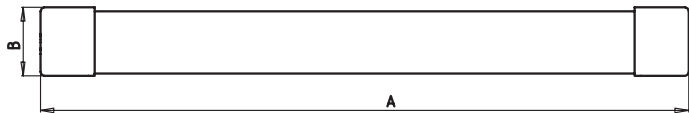




DC-APPLICATION / TRACTION FUSE

Size **20 x 190 mm** Rated voltage **DC 1500 V**

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	90 090 10		25.0	12	
8 A	90 090 10		25.0	12	
10 A	90 090 10		25.0	12	
12 A	90 090 10		25.0	12	
16 A	90 090 10		25.0	12	
20 A	90 090 10		25.0	12	
25 A	90 090 10		25.0	12	
32 A	90 090 10		25.0	12	



A 7.48" (190 mm)
B 0.80" (20 mm)

DC-APPLICATION / TRACTION FUSE

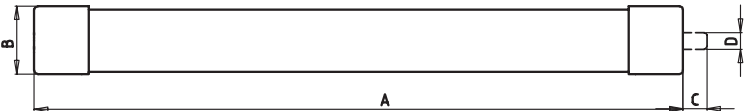
Size
20 x 190 mm

Rated voltage
DC 1500 V

with striker pin

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	90 092 10	✓	26.0	12	
8 A	90 092 10	✓	26.0	12	
10 A	90 092 10	✓	26.0	12	
12 A	90 092 10	✓	26.0	12	
16 A	90 092 10	✓	26.0	12	
20 A	90 092 10	✓	26.0	12	
25 A	90 092 10	✓	26.0	12	
32 A	90 092 10	✓	26.0	12	

- A7.48" (190 mm)
- B0.80" (20 mm)
- C_(min)0.28" (7 mm)
- D0.20" (4.9 mm)

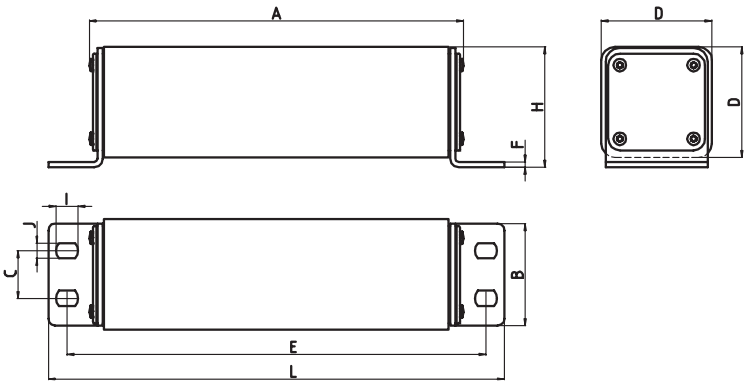




DC-APPLICATION / TRACTION FUSE

Size SQB-5000	Rated voltage DC 5000 V	Bolted Contact
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Rated current	Part No.	UL Rec.	Weight (kg/1)	Pack	
200 A	90 200 20		3.54	1	
250 A	90 200 20		3.54	1	
315 A	90 200 20		3.54	1	
350 A	90 200 20		3.54	1	



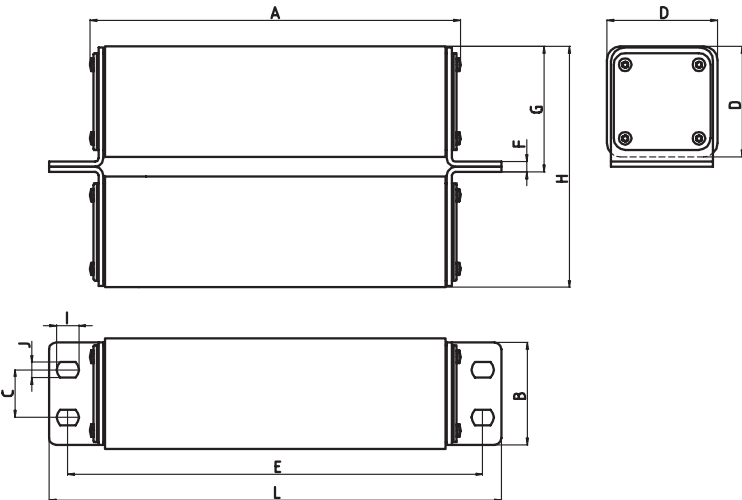
A	14.50" (368 mm)
B	2.36" (60 mm)
C	0.35" (9 mm)
D	2.56" (65 mm)
E	15.50" (394 mm)
F	0.12" (3 mm)
H	2.80" (71 mm)
I	0.50" (13 mm)
J	0.35" (9 mm)
L	16.38" (416 mm)

DC-APPLICATION / TRACTION FUSE

Size	Rated voltage	
SQB-5000	DC 5000 V	Bolted Contact

Rated current	Part No.	UL Rec.	Weight (kg/1)	Pack	
400 A	90 210 20		7.08	1	
500 A	90 210 20		7.08	1	
630 A	90 210 20		7.08	1	
700 A	90 210 20		7.08	1	

A	14.50" (368 mm)
B	2.36" (60 mm)
C	1.10" (28 mm)
D	2.56" (65 mm)
E	15.50" (394 mm)
F	0.24" (6 mm)
G	2.90" (74 mm)
H	5.60" (142 mm)
I	0.50" (13 mm)
J	0.35" (9 mm)
L	16.38" (416 mm)

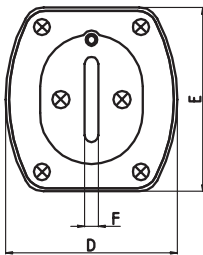
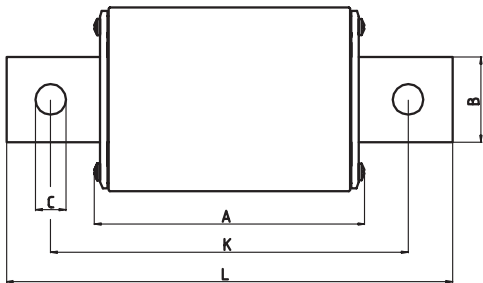




DC-APPLICATION / TRACTION FUSE

Size **NH 4** Rated voltage **DC 1000 V**

Rated current	Part No.	UL Rec.	Weight (kg/1)	Pack	
800 A	90 083 10		4.0	1	



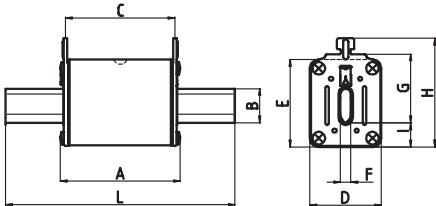
A	6.30" (160 mm)
B	1.97" (50 mm)
C	0.70" (18 mm)
D	3.98" (101 mm)
E	4.25" (108 mm)
F	0.30" (8 mm)
K	8.27" (210 mm)
L	10.30" (262 mm)

DC-APPLICATION / TRACTION FUSE

Size	Rated voltage	
NH 1	DC 750 V	topindicator

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
32 A	20 556 04		27.0	3	
40 A	20 556 04		27.0	3	
50 A	20 556 04		27.0	3	
63 A	20 556 04		27.0	3	
80 A	20 556 04		27.0	3	
100 A	20 556 04		27.0	3	
125 A	20 556 04		27.0	3	
160 A	20 556 04		27.0	3	

A _(max)	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)



Size
14 x 51 mm

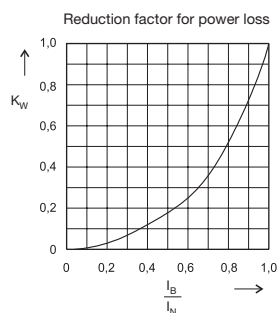
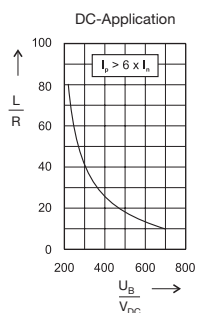
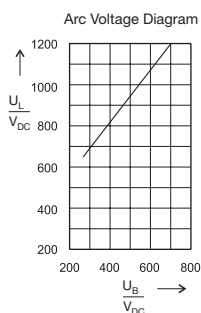
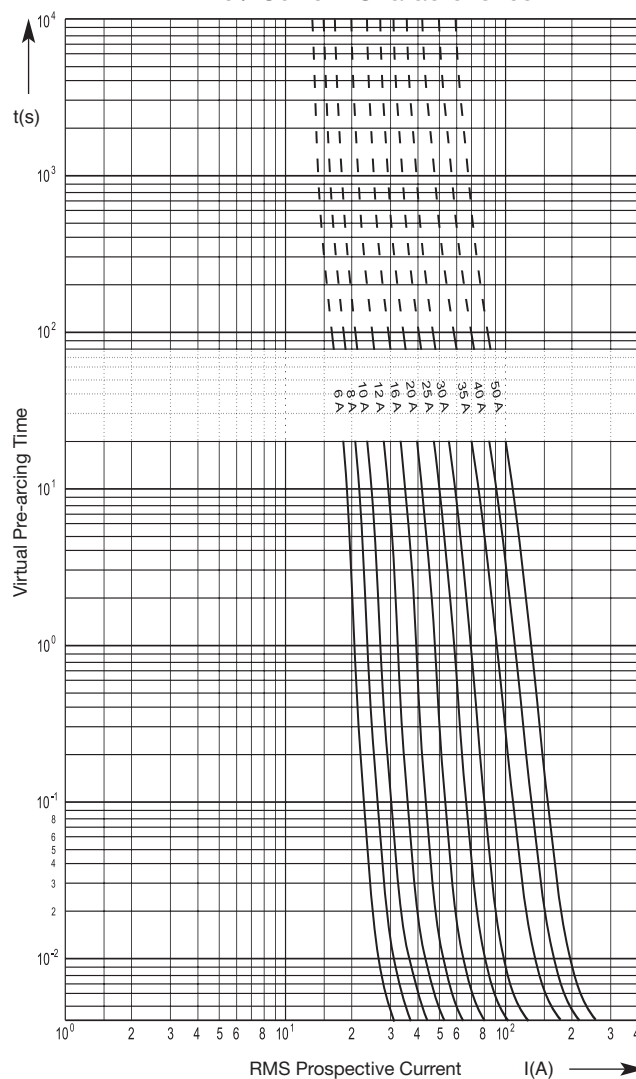
Rated voltage
DC 700 V

Operating class
aR

Rated braking capacity
50 kA

Rated current	Part No.	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 700 V DC A ² s
6 A	50 118 06	1.3	2	12
8 A	50 118 06	1.7	2.9	17
10 A	50 118 06	2.6	3.9	25
12 A	50 118 06	3.1	6.5	41
16 A	50 118 06	4.7	8	52
20 A	50 118 06	6.0	12	70
25 A	50 118 06	7.6	20	130
30 A	50 118 06	9.8	32	190
35 A	50 118 06	10.3	72	430
40 A	50 118 06	11.2	103	620
50 A	50 118 06	12.6	128	770

Time / Current Characteristics



Size
14 x 51 mm

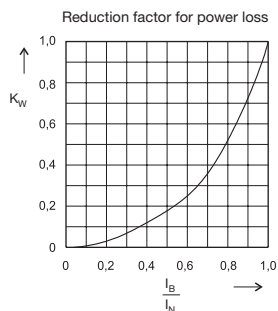
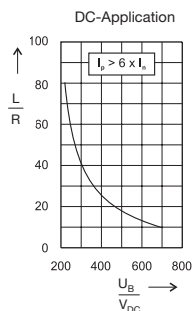
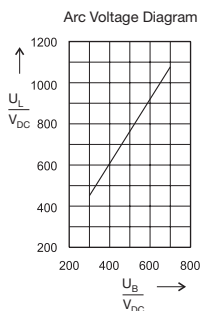
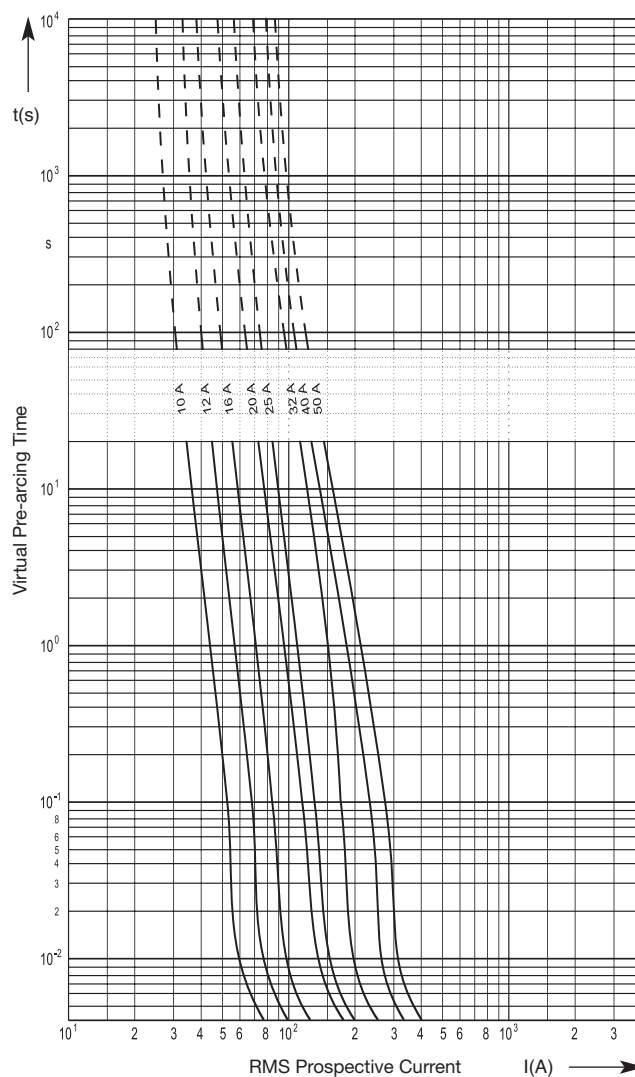
 Rated voltage
DC 700 V

 Operating class
aR

 Rated braking capacity
30 kA

Rated current	Part No.	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 700 V DC A ² s	
10 A	50 201 06	1.1	12	67	
12 A	50 201 06	1.2	12	120	
16 A	50 201 06	2.0	32	190	
20 A	50 201 06	2.3	63	360	
25 A	50 201 06	3.1	82	480	
32 A	50 201 06	4.1	130	740	
40 A	50 201 06	4.6	250	1,460	
50 A	50 201 06	7.0	330	1,900	

Time / Current Characteristics



Size
27 x 60 mm

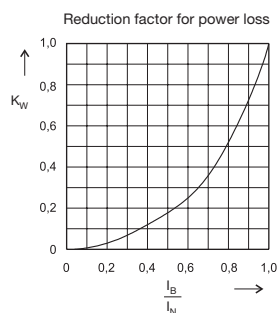
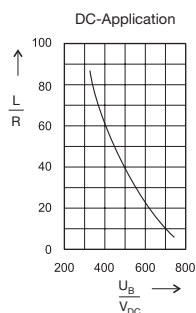
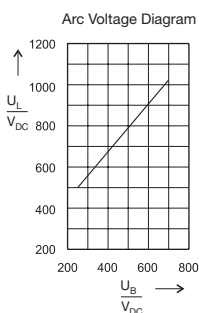
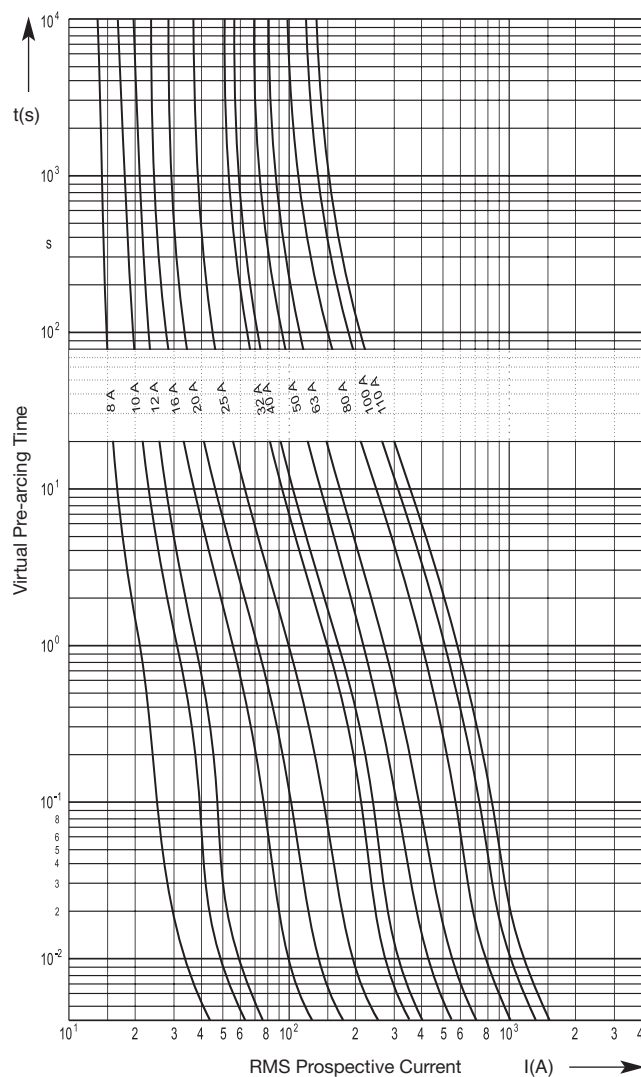
Rated voltage
DC 660 V

Operating class
gR

Rated braking capacity
50 kA

Rated current	Part No. without striker	Part No. with striker pin	Power Loss A²s	Pre-arcing I²t-value A²s	Total I²t-value @ 660 V DC A²s
8 A	50 190 06	50 191 06	2.0	4	20
10 A	50 190 06	50 191 06	2.2	8	40
12 A	50 190 06	50 191 06	2.7	12	60
16 A	50 190 06	50 191 06	3.1	32	160
20 A	50 190 06	50 191 06	3.5	62	310
25 A	50 190 06	50 191 06	3.9	130	650
32 A	50 190 06	50 191 06	4.6	250	1,250
40 A	50 190 06	50 191 06	6.6	420	2,100
50 A	50 190 06	50 191 06	7.5	620	3,100
63 A	50 190 06	50 191 06	8.9	1,200	6,000
80 A	50 190 06	50 191 06	10.9	2,100	10,500
100 A	50 190 06	50 191 06	13.5	3,500	17,500
110 A	50 190 06	50 191 06	14.2	4,600	23,000

Time / Current Characteristics



Size
20 x 127 mm

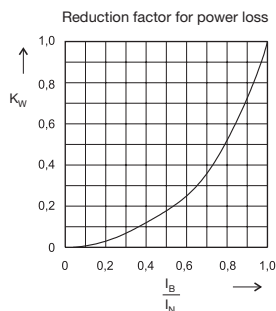
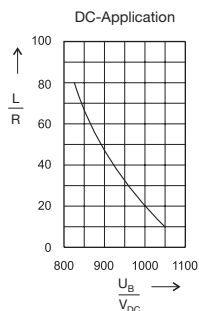
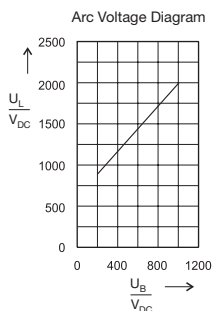
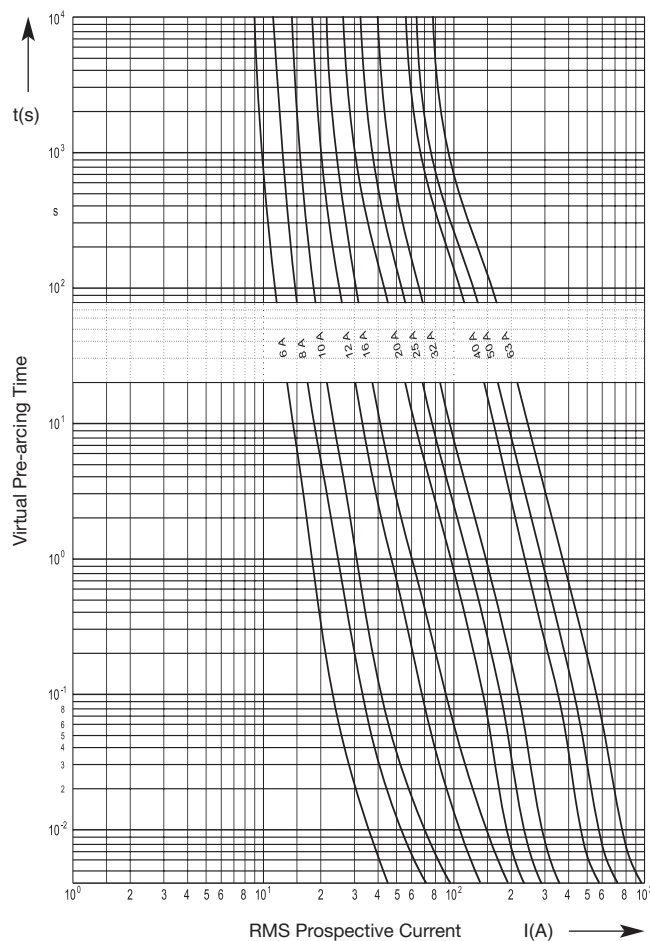
 Rated voltage
DC 1000 V

 Operating class
gR

 Rated breaking capacity
100 kA

Rated current	Part No. with indicator	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 1000 V DC A ² s
6 A	90 080 10	90 082 10	3.0	3	17
8 A	90 080 10	90 082 10	3.2	7	42
10 A	90 080 10	90 082 10	3.4	13	75
12 A	90 080 10	90 082 10	4.6	20	120
16 A	90 080 10	90 082 10	5.7	52	300
20 A	90 080 10	90 082 10	6.8	82	470
25 A	90 080 10	90 082 10	8.1	118	670
32 A	90 080 10	90 082 10	10.0	184	1,050
40 A	90 080 10	90 082 10	12.0	472	2,700
50 A	90 080 10	90 082 10	13.2	737	4,200
63 A	90 080 10	90 082 10	17.7	1,311	7,500

Time / Current Characteristics



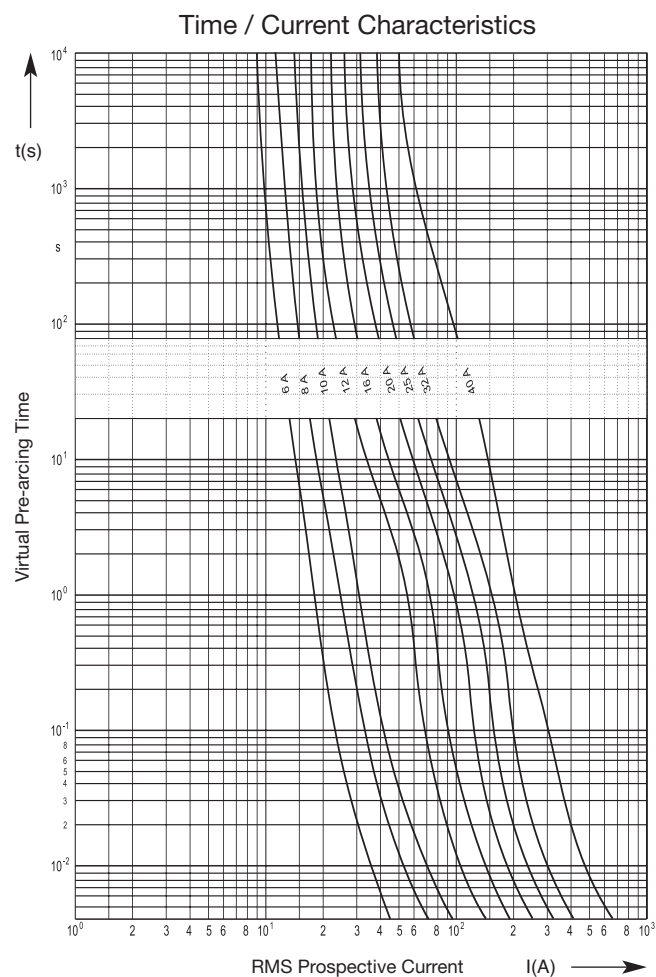
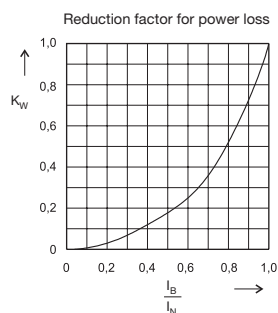
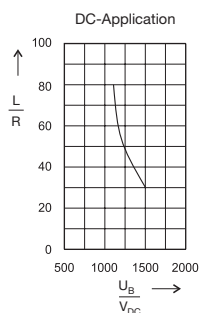
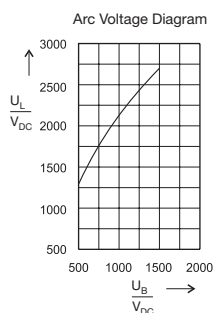
Size
20 x 127 mm

Rated voltage
DC 1500 V

Operating class
gR

Rated braking capacity
30 kA

Rated current	Part No. with striker pin	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 1500 V DC A ² s
6 A	90 081 10	3	3	18
8 A	90 081 10	3.2	7.4	44
10 A	90 081 10	3.4	13	80
12 A	90 081 10	3.6	30	180
16 A	90 081 10	4.6	52	320
20 A	90 081 10	5.5	90	550
25 A	90 081 10	6.9	149	900
32 A	90 081 10	8	237	1,420
40 A	90 081 10	9.4	597	3,600



Size
20 x 190 mm

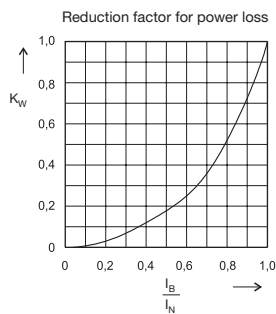
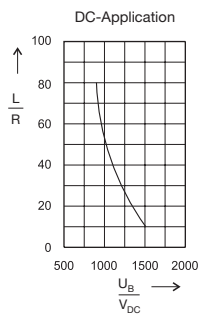
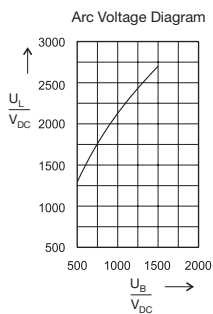
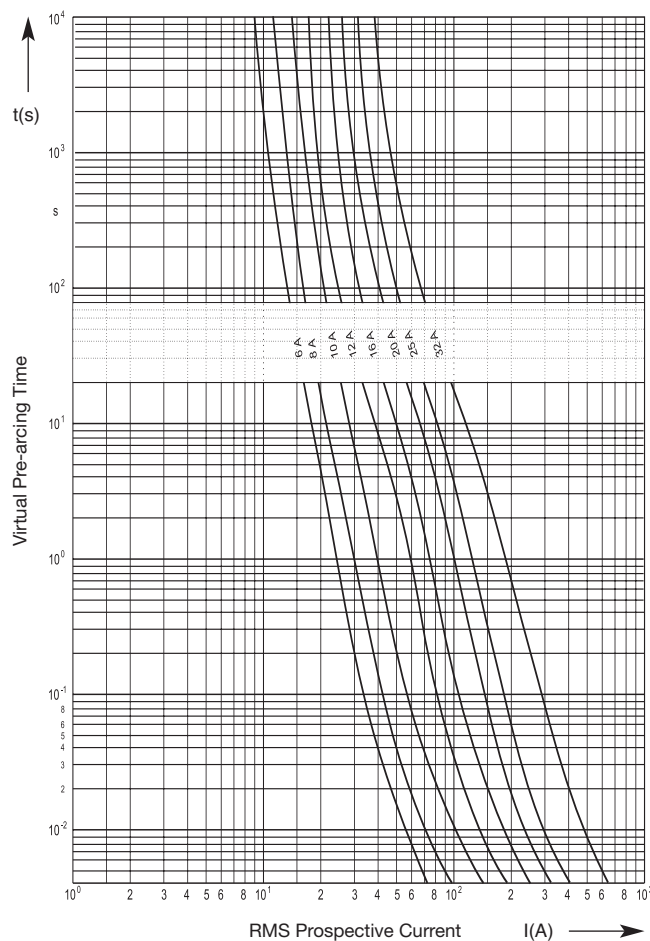
 Rated voltage
DC 1500 V

 Operating class
gR

 Rated breaking capacity
60 kA

Rated current	Part No. without indicator	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 1500 V DC A ² s	
6 A	90 090 10	90 092 10	3.1	7.4	44	
8 A	90 090 10	90 092 10	4.1	13	80	
10 A	90 090 10	90 092 10	4.4	30	180	
12 A	90 090 10	90 092 10	4.7	53	320	
16 A	90 090 10	90 092 10	6.2	90	550	
20 A	90 090 10	90 092 10	7.6	150	900	
25 A	90 090 10	90 092 10	8.1	240	1,400	
32 A	90 090 10	90 092 10	9.7	600	3,600	

Time / Current Characteristics



Size
SQB-5000

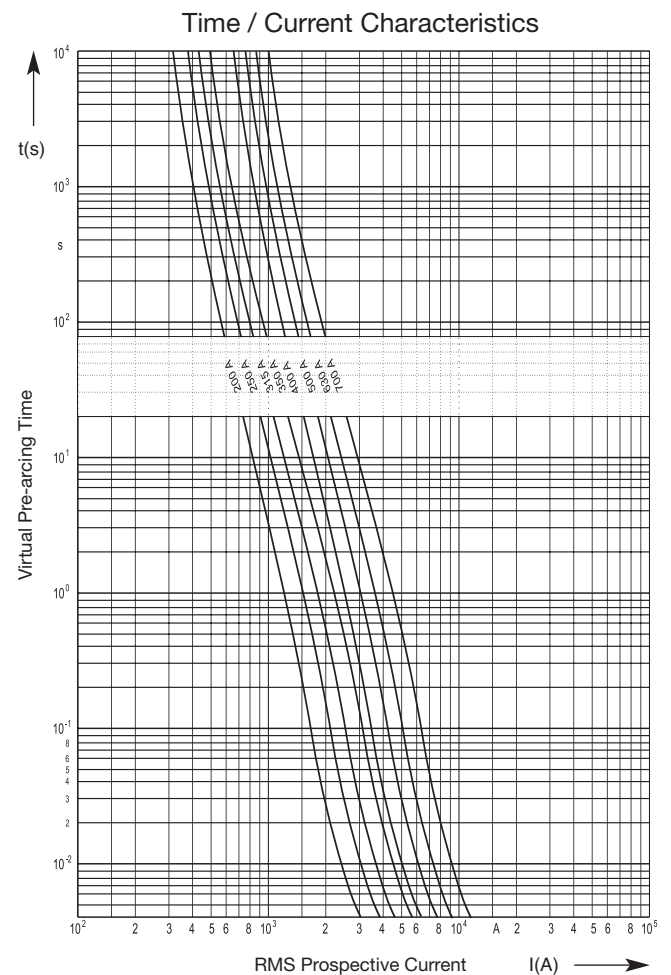
 Rated voltage
DC 5000 V

 Operating class
UR

 Rated braking capacity
30 kA

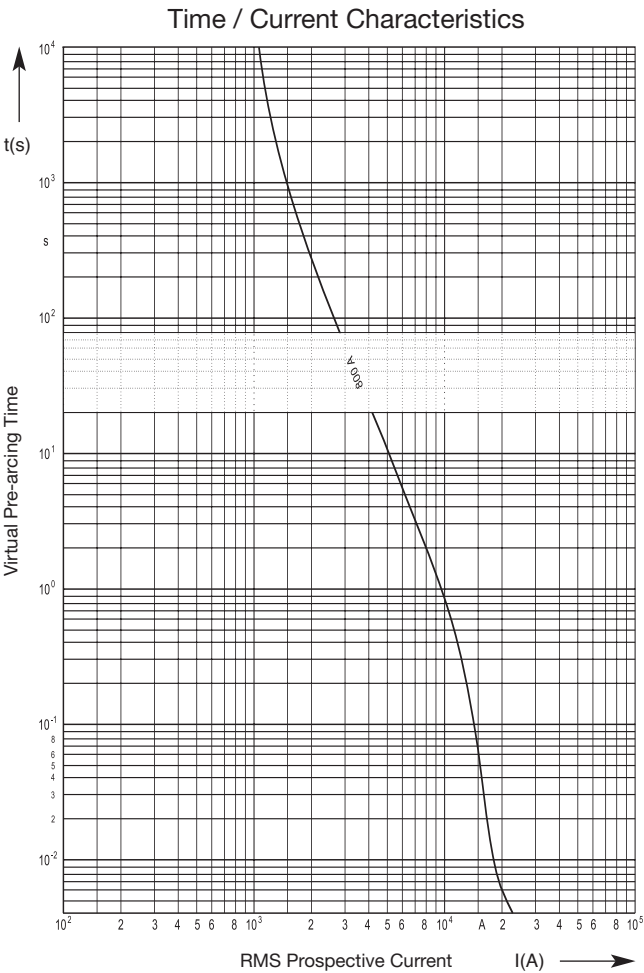
Rated current	Part No.	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 5000 V DC A ² s	
200 A	90 200 20	218	17,000	83,000	
250 A	90 200 20	229	30,000	144,000	
315 A	90 200 20	238	55,000	260,000	
350 A	90 200 20	278	77,000	354,000	
400 A*	90 210 20	460	68,000	332,000	
500 A*	90 210 20	481	120,000	576,000	
630 A*	90 210 20	505	220,000	1,040,000	
700 A*	90 210 20	584	308,000	1,416,000	

* Double Body



Size NH 4	Rated voltage DC 1000 V	Operating class gF	Rated breaking capacity 40 kA
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Rated current	Part No.	Power Loss	Pre-arcing I²t-value A²s	Total I²t-value @ 1000 V DC τ = 15 ms A²s	
800 A	90 083 10	124	1,030,000	2,900,000	



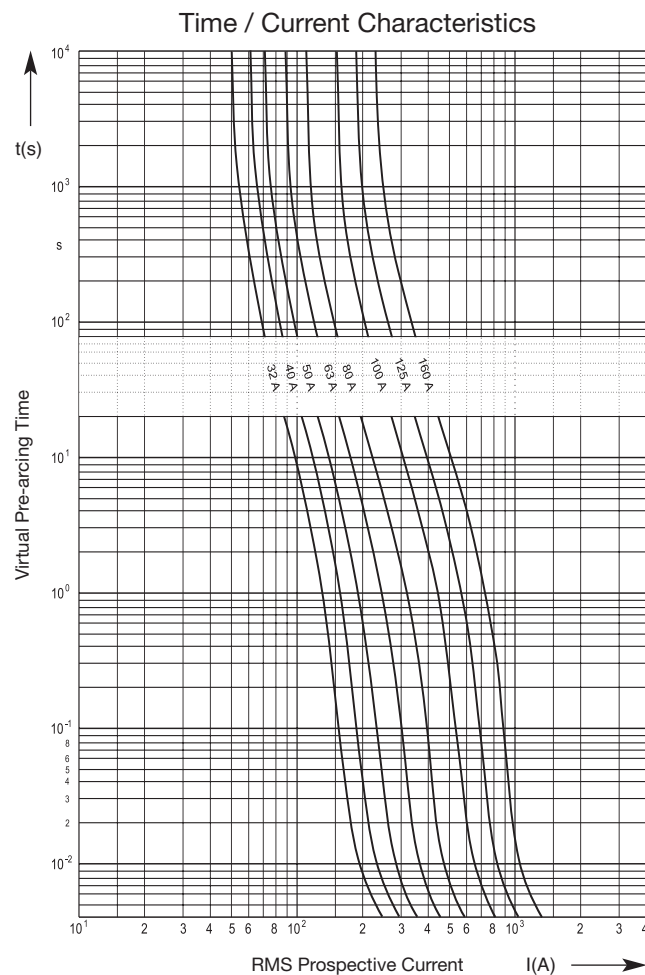
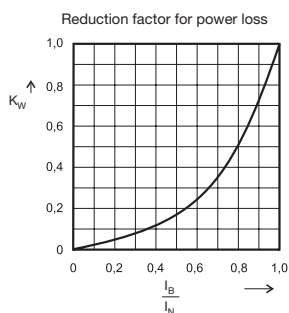
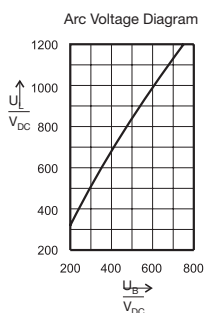
Size
NH 1

Rated voltage
DC 750 V

Operating class
UR · gR

Rated braking capacity
50 kA

Rated current	Part No. with topindicator	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 750 V DC A ² s	
32 A	20 556 04	5.9	100	800	
40 A	20 556 04	7.1	180	1,400	
50 A	20 556 04	8.6	290	2,200	
63 A	20 556 04	10	410	3,200	
80 A	20 556 04	12	740	5,700	
100 A	20 556 04	15	1,300	10,000	
125 A	20 556 04	19	2,500	19,000	
160 A	20 556 04	23	3,700	29,000	



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN-BRITISH STANDARD



Standards: IEC 60 269-4

BS 88-4

Class: aR

Voltage ratings: AC 240 V – AC 700 V

Current ratings: 5 A – 900 A

Features / Benefits

- ▶ High interrupting rating 100 kA
- ▶ Voltage rating AC 240 V – AC 700 V
- ▶ Protection of Power Semiconductors according to IEC 60269-4
- ▶ Complies with BS 88 Standard
with or without striker for microswitch operation
- ▶ Class aR 5 A – 900 A according to IEC 60269-4



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN-BRITISH STANDARD

Selection Guide

Fuses

Rated Voltage AC	Size	Part No.	Selector Guide Page	Techn. Data Page	
240 V	8.4 x 38	50 076 06	URE 3	URE 12	
240 V	17.5 x 41.8	50 053 06	URE 4	URE 13	
240 V	35 x 59	50 054 06	URE 5	URE 14	
240 V	2 x 35 x 59	50 071 06	URE 6	URE 15	
690 V	8.4 x 64.3	50 077 06	URE 7	URE 16	
690 V	17.5 x 63.5	50 073 06	URE 8	URE 17	
690 V	35 x 85	50 074 06	URE 9	URE 18	
690 V	2 x 35 x 85	50 075 06	URE 10	URE 19	
690/700 V	000	20 559 21	URE 11	URE 20	

Selection Guide

Set of mounting clips for Indicator Fuse

Size	Part No.	Techn. Data Page	
17.5 mm	58 053 04	URZ 21	
35 mm	58 054 04	URZ 21	

Selection Guide

Indicator Fuse

Rated Voltage	Part No.	Techn. Data Page	
240 V	58 053 07	URZ 21	
690 V	58 073 07	URZ 21	

Selection Guide

Microswitch

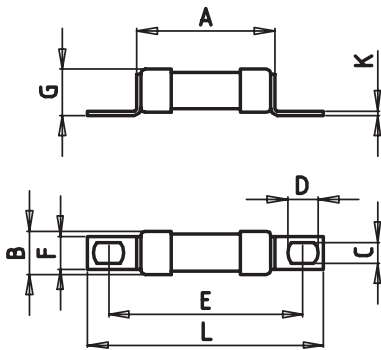
Rated Voltage	Part No.	Techn. Data Page	
250 V	58 053 05.1	URZ 21	



FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN-BRITISH STANDARD

Size	Rated voltage	Standard
8.4 x 38 mm	AC 240 V	BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
5 A	50 076 06		0.55	50	
6 A	50 076 06		0.55	50	
10 A	50 076 06		0.55	50	
12 A	50 076 06		0.55	50	
16 A	50 076 06		0.55	50	
20 A	50 076 06		0.55	50	



A	1.06" (27 mm)
B	0.33" (8.4 mm)
C	0.16" (4 mm)
D	0.24" (6 mm)
E	1.50" (38 mm)
F	0.25" (6.4 mm)
G	0.35" (9 mm)
K	0.03" (0.8 mm)
L	1.80" (46 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN-BRITISH STANDARD

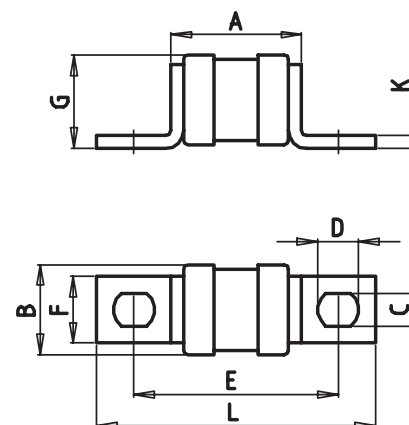
Size
17.5 x 41.8 mm

Rated voltage
AC 240 V

Standard
BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
25 A	50 053 06		3.2	10
32 A	50 053 06		3.2	10
35 A	50 053 06		3.2	10
40 A	50 053 06		3.2	10
50 A	50 053 06		3.2	10
63 A	50 053 06		3.2	10
80 A	50 053 06		3.2	10
100 A	50 053 06		3.2	10
125 A	50 053 06		3.2	10
160 A	50 053 06		3.2	10
180 A	50 053 06		3.2	10

A	1.02" (26 mm)
B	0.70" (17.5 mm)
C	0.25" (6.35 mm)
D	0.30" (8 mm)
E	1.57" (40 mm)
F	0.50" (13 mm)
G	0.73" (18.5 mm)
K	0.10" (2.5 mm)
L	2.17" (55 mm)

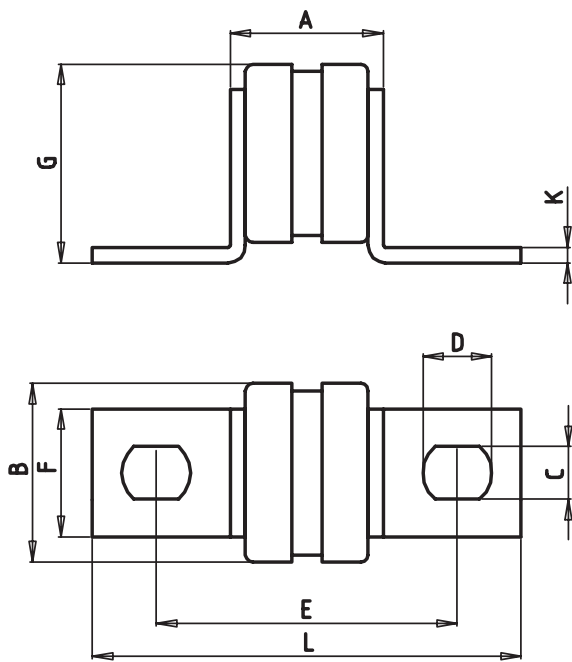




FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN-BRITISH STANDARD

Size	Rated voltage	Standard
35 x 59 mm	AC 240 V	BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
160 A	50 054 06		15	2	
200 A	50 054 06		15	2	
250 A	50 054 06		15	2	
315 A	50 054 06		15	2	
355 A	50 054 06		15	2	
400 A	50 054 06		15	2	
450 A	50 054 06		15	2	



A	1.22" (31 mm)
B	1.38" (35 mm)
C	0.40" (10.3 mm)
D	0.53" (13.5 mm)
E	2.32" (59 mm)
F	0.98" (25 mm)
G	1.54" (39 mm)
K	0.12" (3 mm)
L	3.30" (84 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

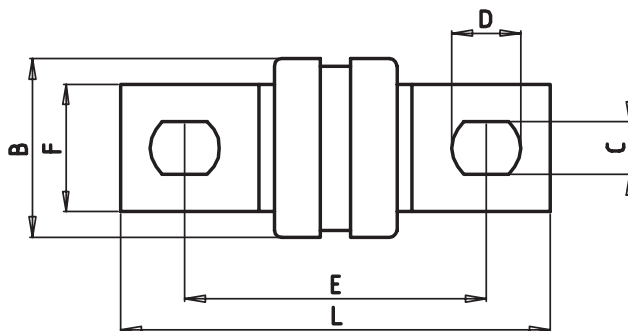
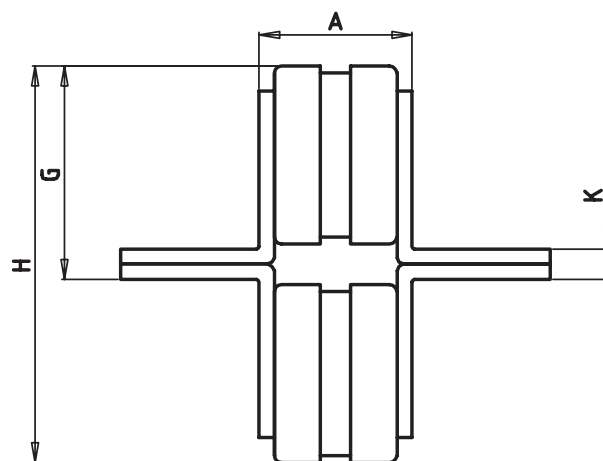
EUROPEAN-BRITISH STANDARD

Size
2 x 35 x 59 mm

Rated voltage
AC 240 V

Standard
BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
300 A	50 071 06		29	1
350 A	50 071 06		29	1
400 A	50 071 06		29	1
450 A	50 071 06		29	1
500 A	50 071 06		29	1
630 A	50 071 06		29	1
710 A	50 071 06		29	1
800 A	50 071 06		29	1
900 A	50 071 06		29	1



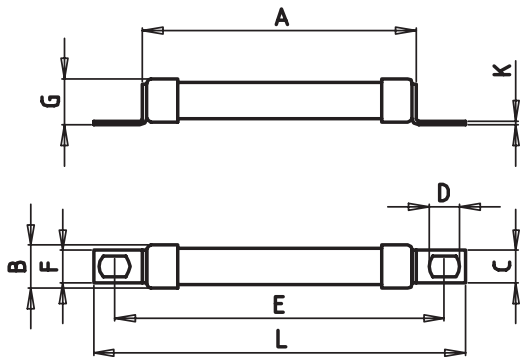
A	1.22" (31 mm)
B	1.38" (35 mm)
C	0.40" (10.3 mm)
D	0.53" (13.5 mm)
E	2.32" (59 mm)
F	1.0" (25 mm)
G	1.65" (42 mm)
H	1.65" (78 mm)
K	0.24" (6 mm)
L	3.30" (84 mm)



FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN-BRITISH STANDARD

Size	Rated voltage	Standard
8.4 x 64.3 mm	AC 690 V	BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
5 A	50 077 06		0.88	50	
6 A	50 077 06		0.88	50	
10 A	50 077 06		0.88	50	
12 A	50 077 06		0.88	50	
16 A	50 077 06		0.88	50	
20 A	50 077 06		0.88	50	



A	2.13" (54 mm)
B	0.33" (8.4 mm)
C	0.16" (4 mm)
D	0.24" (6 mm)
E	2.52" (64 mm)
F	0.25" (6.4 mm)
G	0.35" (9 mm)
K	0.03" (0.8 mm)
L	2.87" (73 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

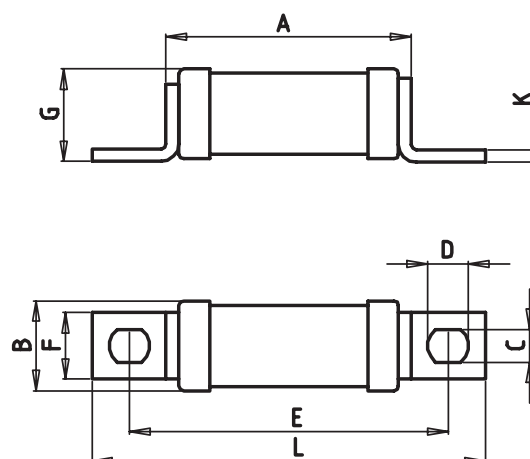
EUROPEAN-BRITISH STANDARD

Size
17.5 x 63.5 mm

Rated voltage
AC 690 V

Standard
BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
25 A	50 073 06		4.2	10
32 A	50 073 06		4.2	10
40 A	50 073 06		4.2	10
50 A	50 073 06		4.2	10
63 A	50 073 06		4.2	10
80 A	50 073 06		4.2	10
100 A	50 073 06		4.2	10



A	1.90" (48 mm)
B	0.70" (17.5 mm)
C	0.25" (6.35 mm)
D	0.30" (8 mm)
E	2.48" (63 mm)
F	0.50" (13 mm)
G	0.73" (18.5 mm)
K	0.10" (2.5 mm)
L	3.03" (77 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

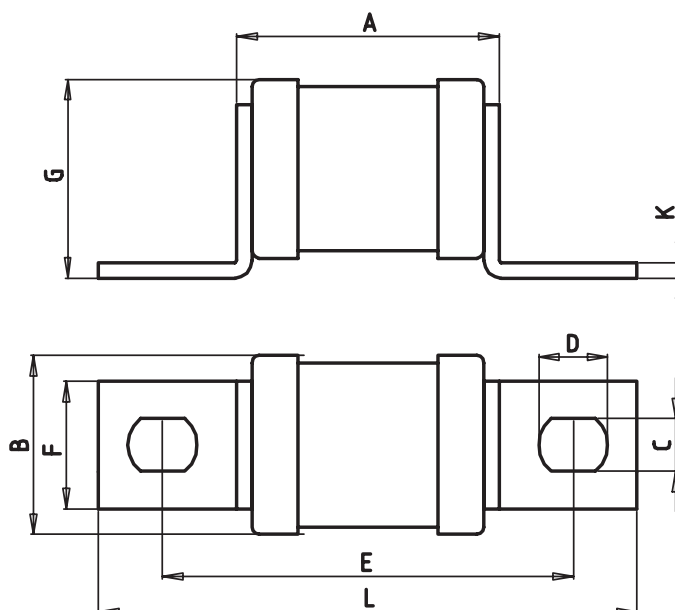
EUROPEAN-BRITISH STANDARD

Size
35 x 85 mm

Rated voltage
AC 690 V

Standard
BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
100 A	50 074 06		19	3	
125 A	50 074 06		19	3	
160 A	50 074 06		19	3	
200 A	50 074 06		19	3	
250 A	50 074 06		19	3	
315 A	50 074 06		19	3	
355 A	50 074 06		19	3	



A	2.05" (52 mm)
B	1.38" (35 mm)
C	0.40" (10.3 mm)
D	0.53" (13.5 mm)
E	3.15" (80 mm)
F	0.98" (25 mm)
G	1.54" (39 mm)
K	0.12" (3 mm)
L	4.13" (105 mm)

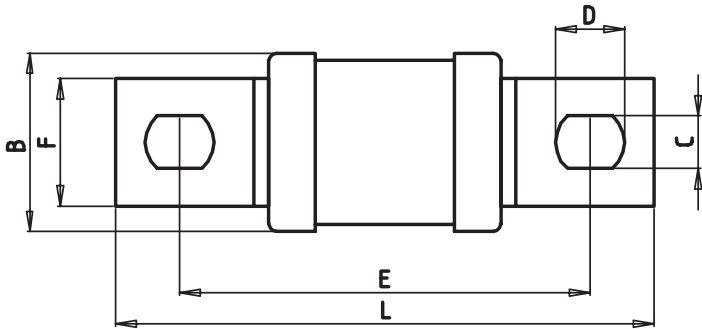
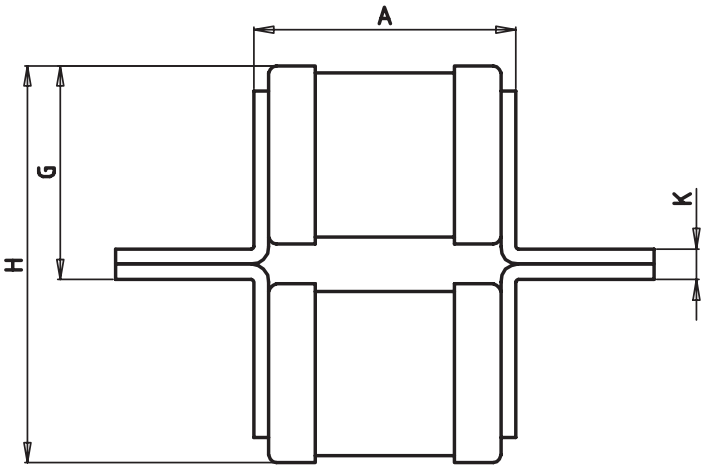


FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN-BRITISH STANDARD

Size **2 x 35 x 85 mm** Rated voltage **AC 690 V** Standard **BS 88-4**

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
315 A	50 075 06		37	1
355 A	50 075 06		37	1
400 A	50 075 06		37	1
450 A	50 075 06		37	1
500 A	50 075 06		37	1
630 A	50 075 06		37	1
710 A	50 075 06		37	1



A	2.05" (52 mm)
B	1.38" (35 mm)
C	0.40" (10.3 mm)
D	0.53" (13.5 mm)
E	3.15" (80 mm)
F	0.98" (25 mm)
G	1.65" (42 mm)
H	3.07" (78 mm)
K	0.24" (6 mm)
L	4.12" (105 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

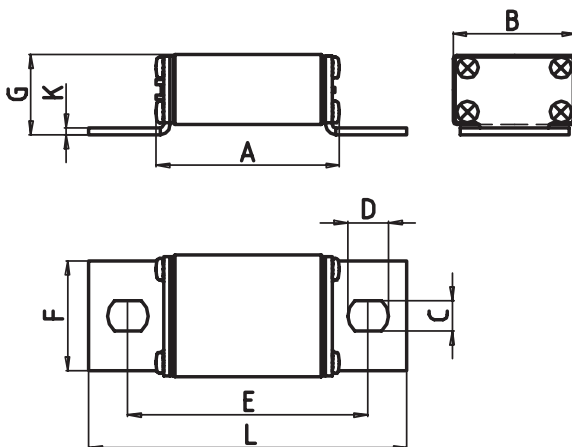
EUROPEAN-BRITISH STANDARD

Size
000

Rated voltage
AC 660/700 V

Standard
BS 88-4

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
32 A	20 559 21		17	6	
35 A	20 559 21		17	6	
40 A	20 559 21		17	6	
50 A	20 559 21		17	6	
63 A	20 559 21		17	6	
80 A	20 559 21		17	6	
100 A	20 559 21		17	6	
160 A	20 559 21		17	6	
200 A	20 559 21		17	6	
250 A	20 559 21		17	6	
315 A	20 559 21		17	6	



A_{max.}	2.13" (54 mm)
B	1.42" (36 mm)
C	0.35" (9 mm)
D	0.47" (12 mm)
E	2.76" (70 mm)
F	1.26" (32 mm)
G	0.93" (23.5 mm)
K	0.08" (2 mm)
L	3.70" (94 mm)

Size
8.4 x 38 mm

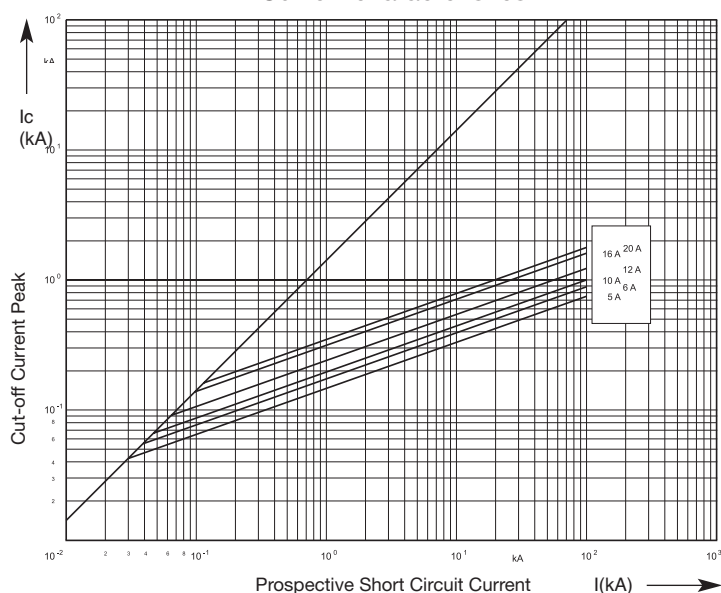
Rated voltage
AC 240 V

Operating class
aR

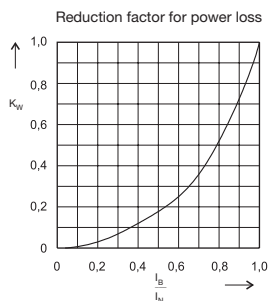
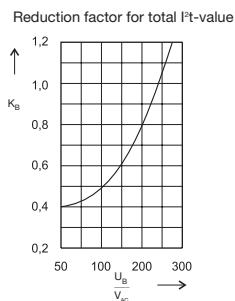
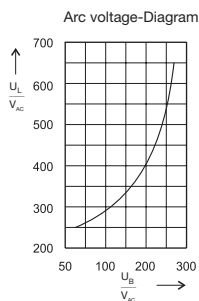
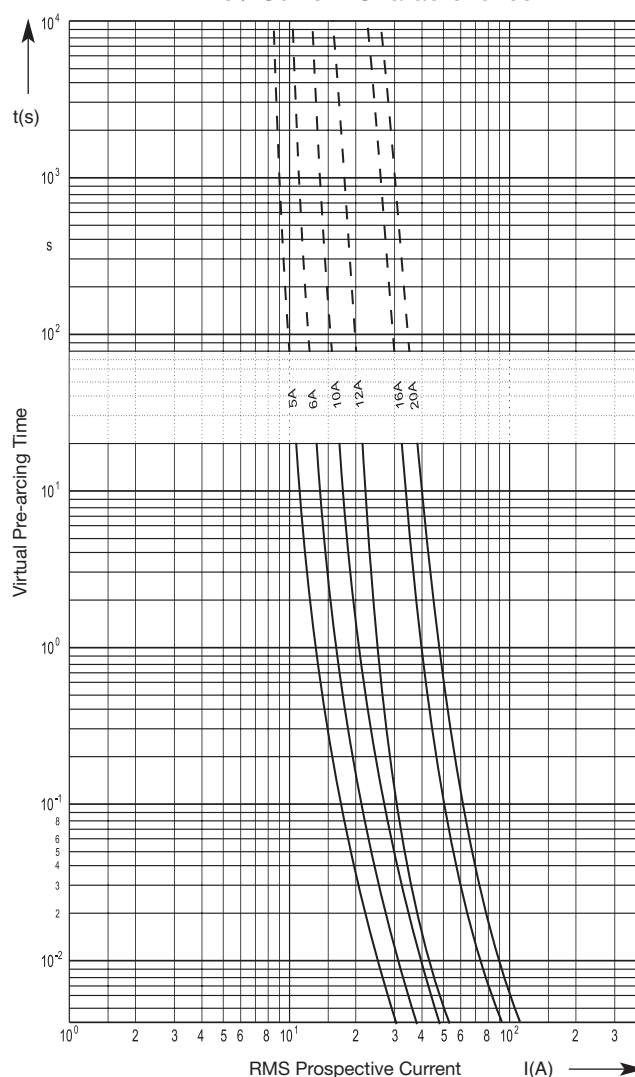
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 240 V A ² s	
5 A	50 076 06	1.5	1.7	9.5	
6 A	50 076 06	1.7	2.9	16	
10 A	50 076 06	3.3	4.2	24	
12 A	50 076 06	2.0	8.0	41	
16 A	50 076 06	2.4	18.0	92	
20 A	50 076 06	3.3	25.0	130	

Cut-off-characteristics



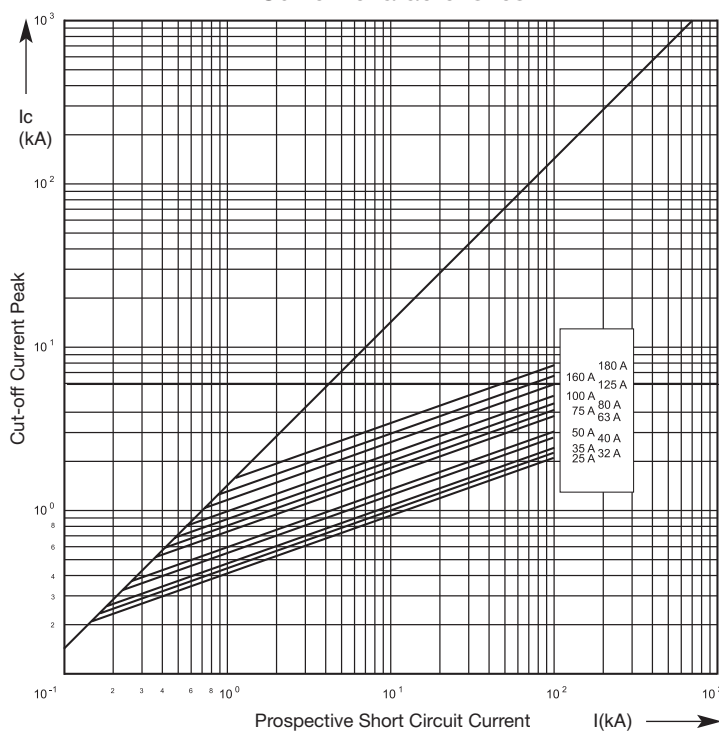
Time / Current Characteristics



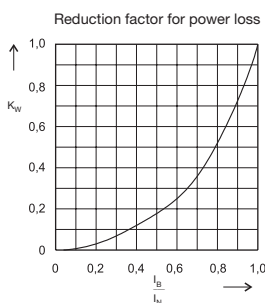
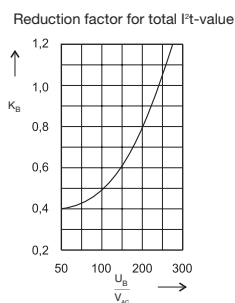
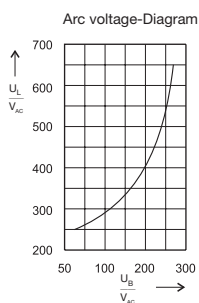
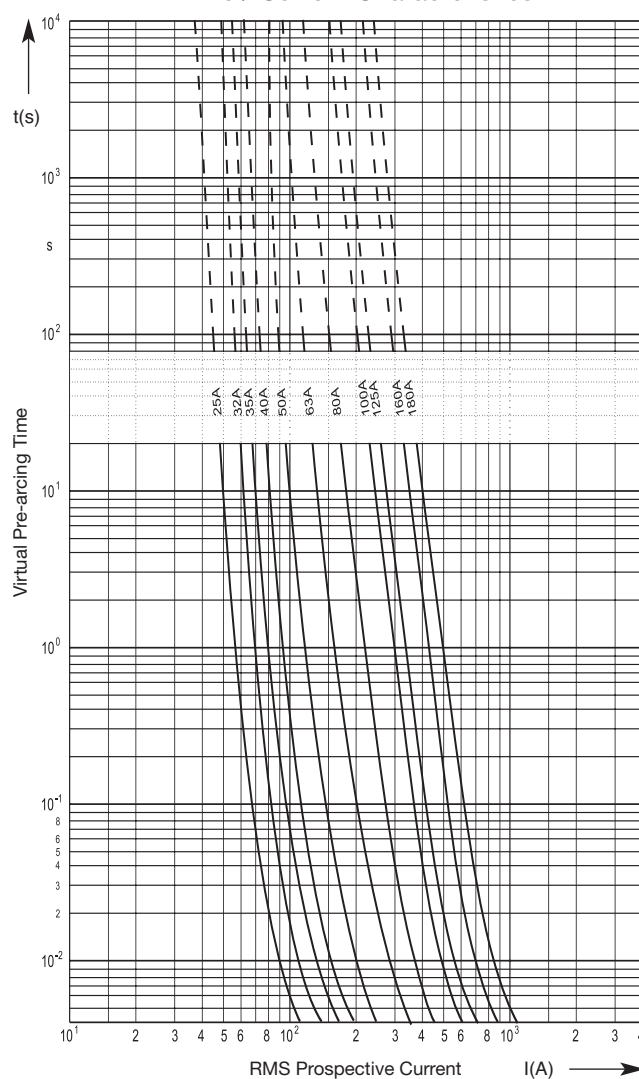
Size 17.5 x 41.8 mm	Rated voltage AC 240 V	Operating class aR	Rated breaking capacity 100 kA
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 240 V A ² s
25 A	50 053 06	3.6	39	260
32 A	50 053 06	4.5	40	270
35 A	50 053 06	5.0	63	430
40 A	50 053 06	5.3	100	700
50 A	50 053 06	6.7	130	900
63 A	50 053 06	7.7	250	1,700
75 A	50 053 06	9.4	330	2,300
80 A	50 053 06	9.7	420	2,900
100 A	50 053 06	12.7	620	4,300
125 A	50 053 06	16.0	1,000	6,800
160 A	50 053 06	22.0	1,500	10,200
180 A	50 053 06	24.0	2,300	15,700

Cut-off-characteristics



Time / Current Characteristics



Size
35 x 59 mm

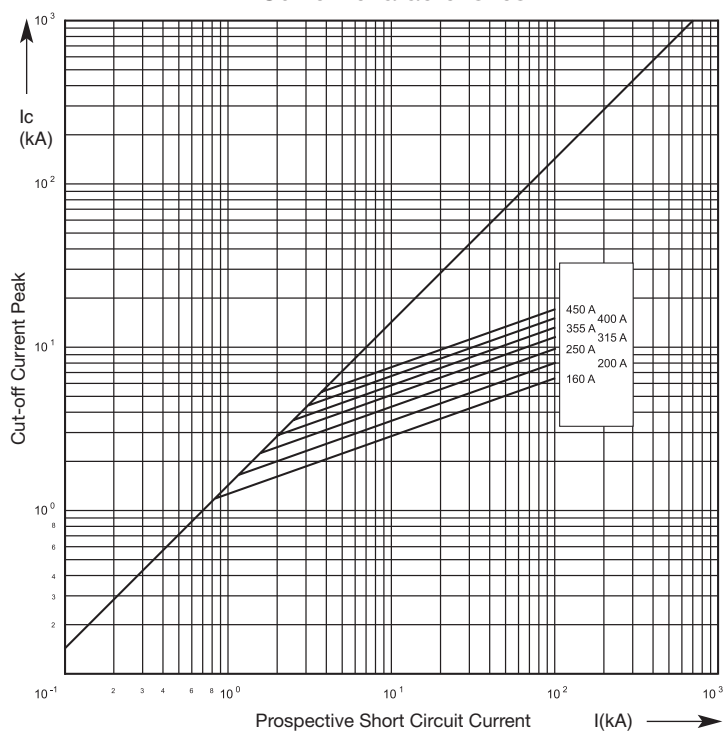
Rated voltage
AC 240 V

Operating class
aR

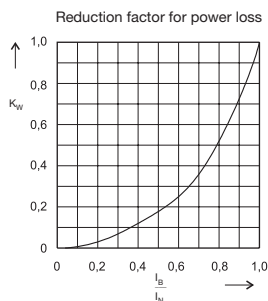
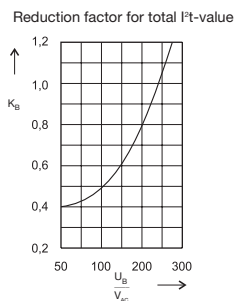
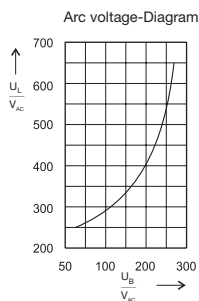
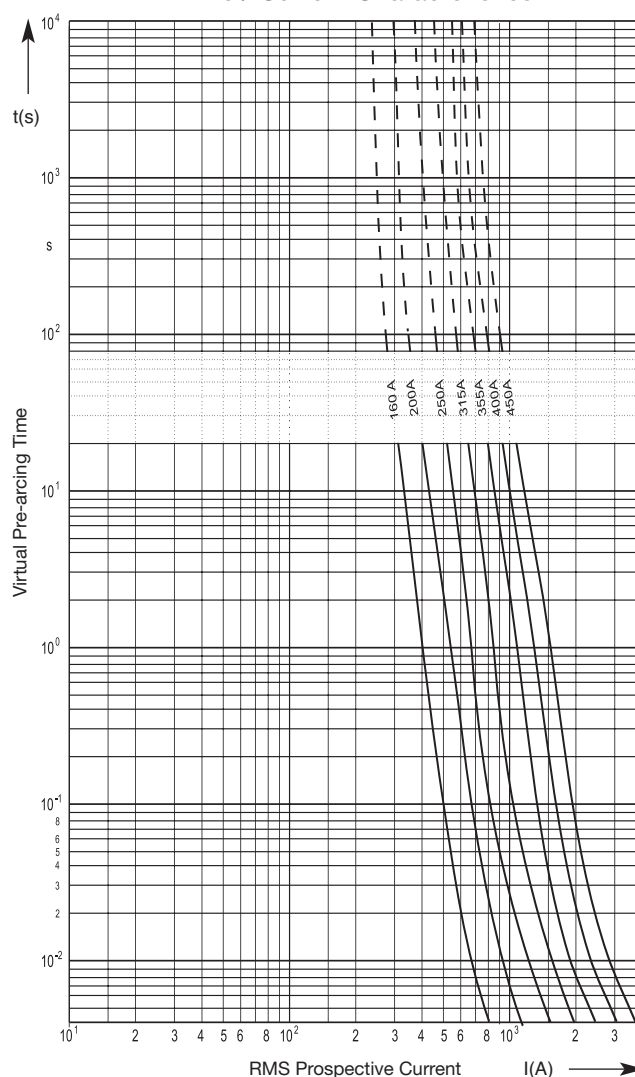
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 240 V A ² s
160 A	50 054 06	23	1,300	8,000
200 A	50 054 06	27	2,500	15,300
250 A	50 054 06	34	4,600	28,000
315 A	50 054 06	36	7,800	48,000
355 A	50 054 06	38	11,800	72,000
400 A	50 054 06	40	18,500	113,000
450 A	50 054 06	46	26,600	163,000

Cut-off-characteristics



Time / Current Characteristics



Size
2 x 35 x 59 mm

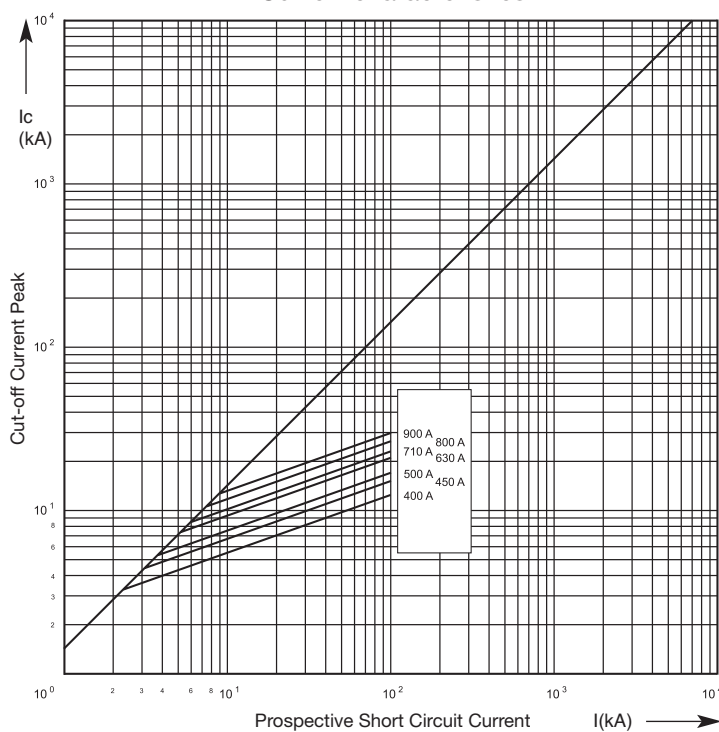
Rated voltage
AC 240 V

Operating class
aR

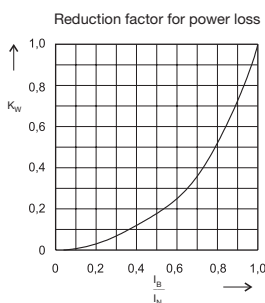
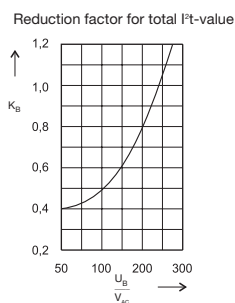
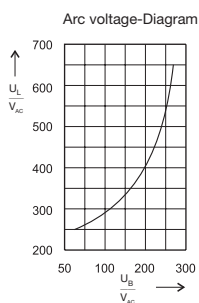
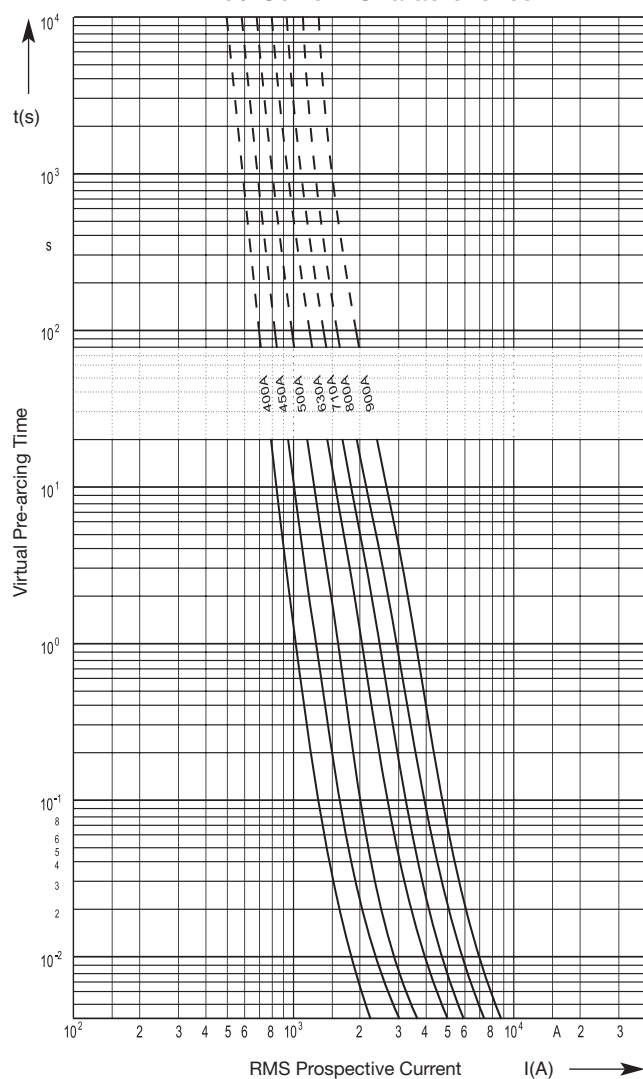
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 240 V A ² s	
400 A	50 071 06	55	10,000	61,000	
450 A	50 071 06	56	19,000	116,000	
500 A	50 071 06	59	27,000	165,000	
630 A	50 071 06	62	50,000	305,000	
710 A	50 071 06	72	70,000	427,000	
800 A	50 071 06	74	106,000	647,000	
900 A	50 071 06	90	150,000	915,000	

Cut-off-characteristics



Time / Current Characteristics



Size
8.4 x 64.3 mm

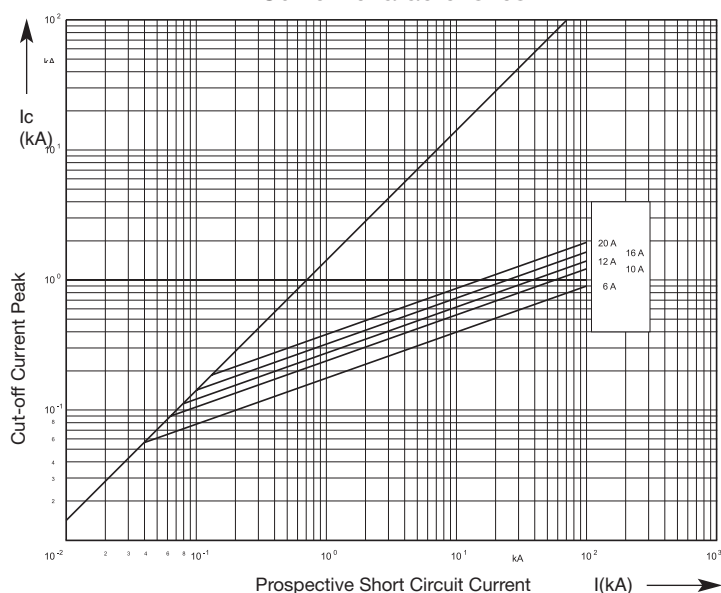
Rated voltage
AC 690 V

Operating class
aR

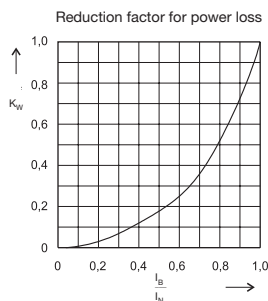
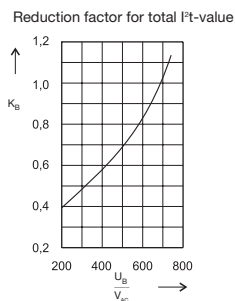
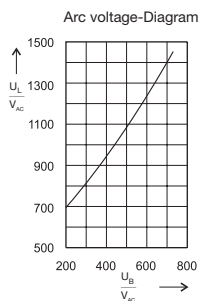
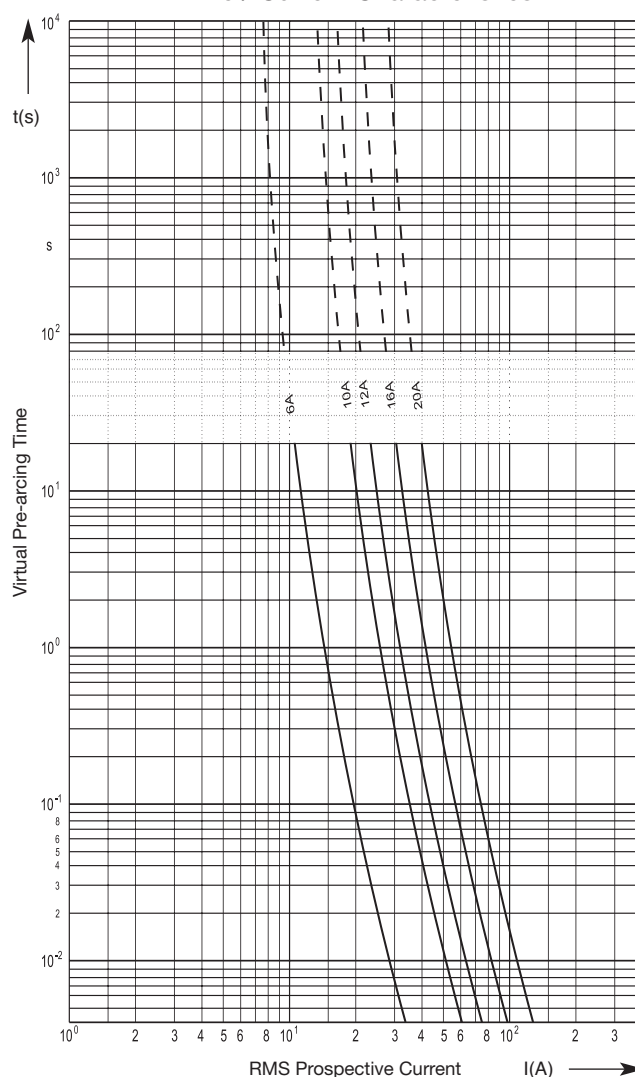
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
6 A	50 077 06	3.2	3	20	
10 A	50 077 06	3.7	8	53	
12 A	50 077 06	3.9	11	77	
16 A	50 077 06	5.5	18	120	
20 A	50 077 06	7.5	32	215	

Cut-off-characteristics



Time / Current Characteristics



Size
17.5 x 63.5 mm

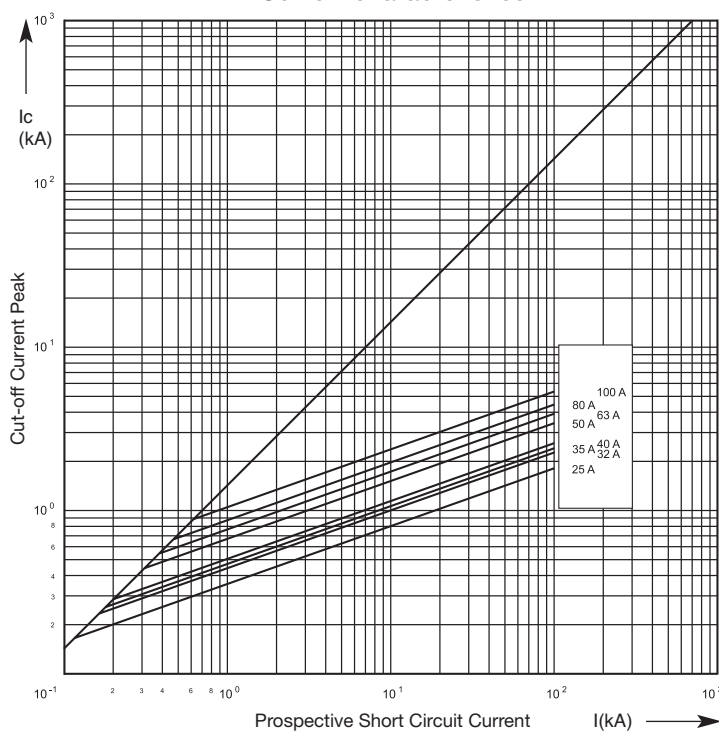
Rated voltage
AC 690 V

Operating class
aR

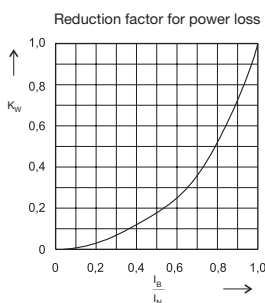
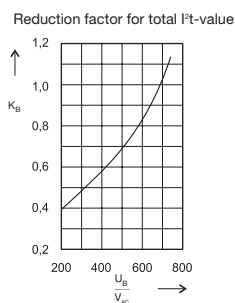
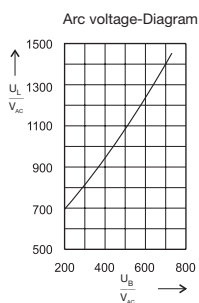
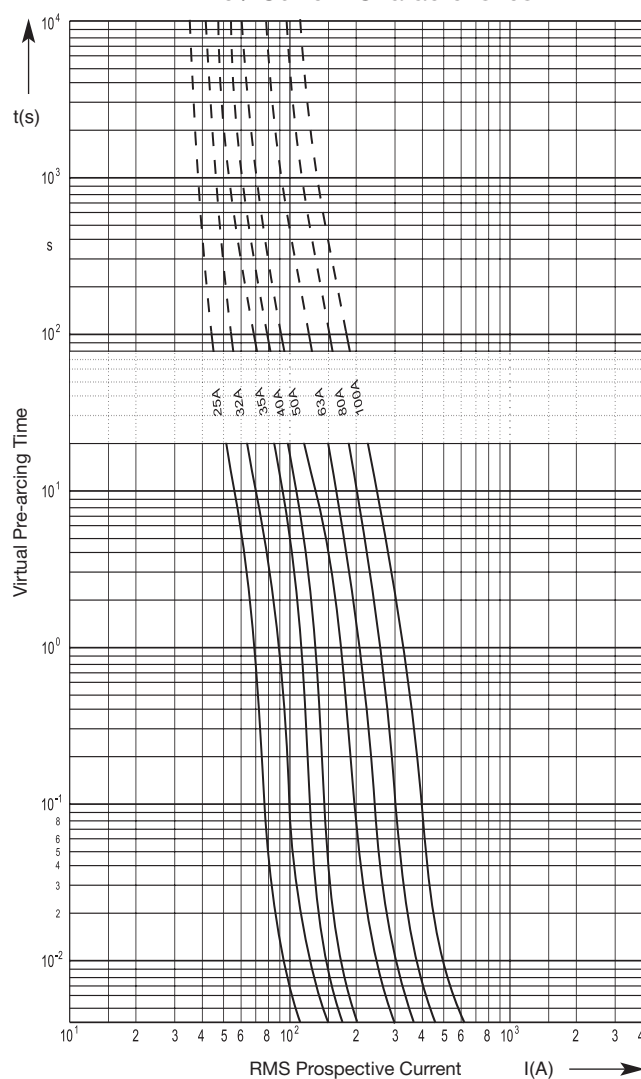
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
25 A	50 073 06	7	25	110	
32 A	50 073 06	9	50	210	
35 A	50 073 06	10	60	260	
40 A	50 073 06	11	80	330	
50 A	50 073 06	12	190	780	
63 A	50 073 06	15	290	1,200	
80 A	50 073 06	18	420	1,700	
100 A	50 073 06	23	740	3,100	

Cut-off-characteristics



Time / Current Characteristics



Size
35 x 85 mm

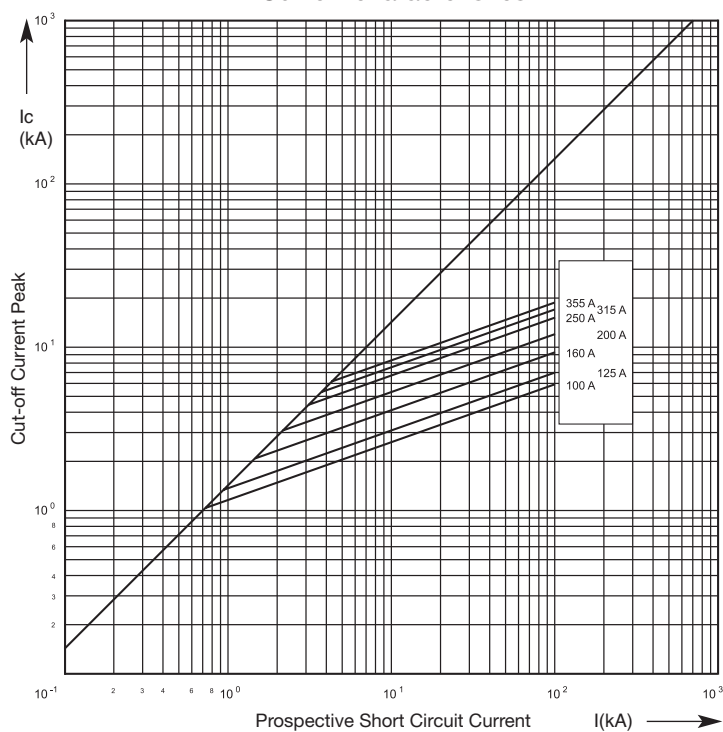
Rated voltage
AC 690 V

Operating class
aR

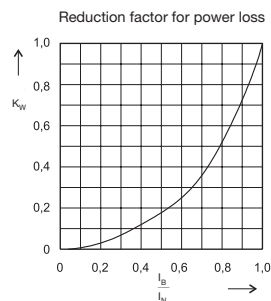
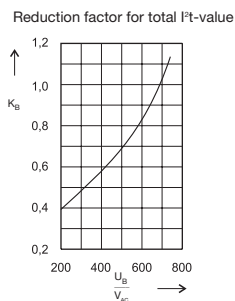
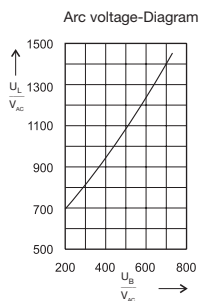
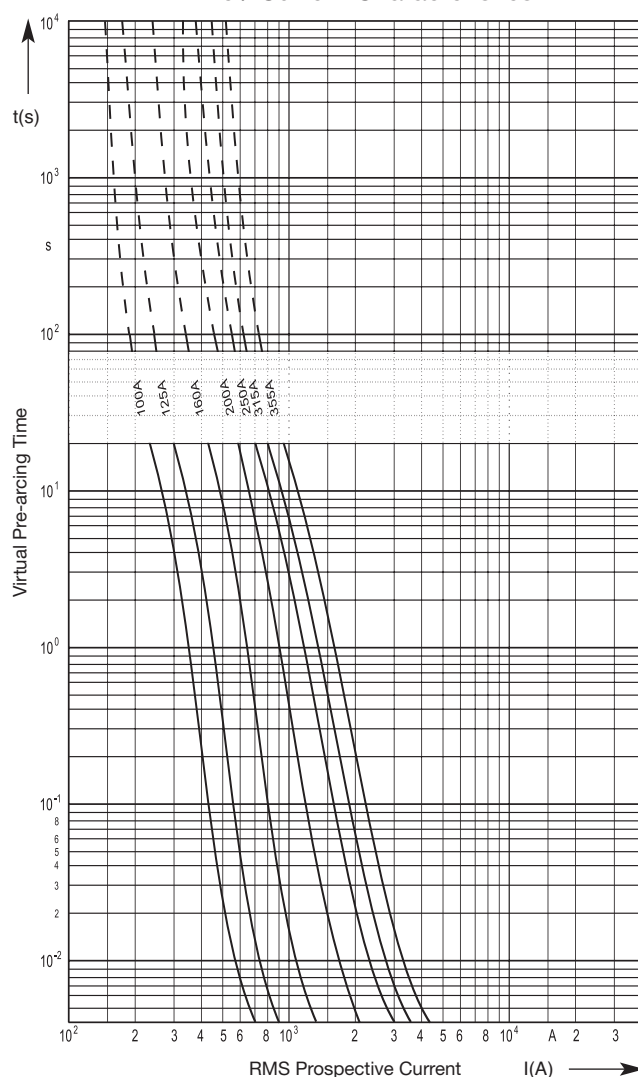
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s
100 A	50 074 06	22	1,000	6,500
125 A	50 074 06	29	1,700	11,000
160 A	50 074 06	30	4,000	26,000
200 A	50 074 06	31	9,000	58,000
250 A	50 074 06	40	18,000	116,000
315 A	50 074 06	44	27,000	173,000
355 A	50 074 06	56	36,000	231,000

Cut-off-characteristics



Time / Current Characteristics



Size
2 x 35 x 85 mm

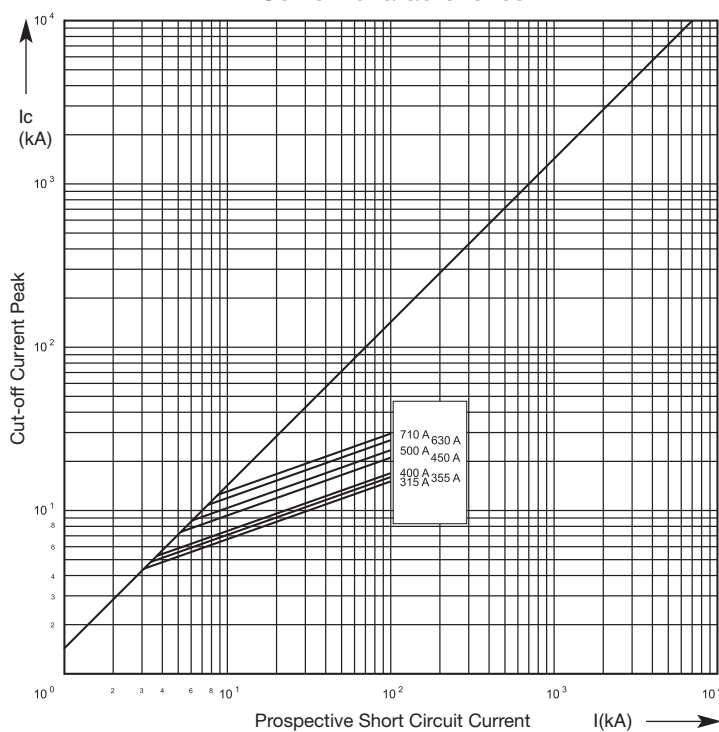
Rated voltage
AC 690 V

Operating class
aR

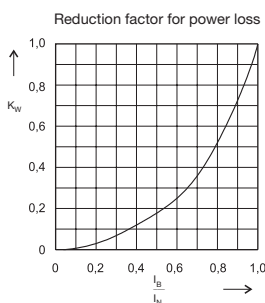
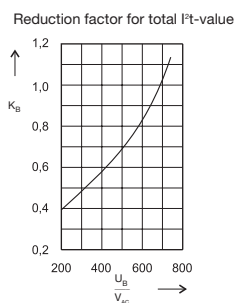
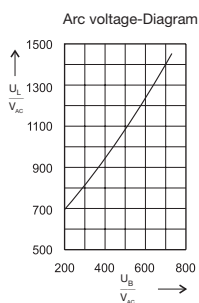
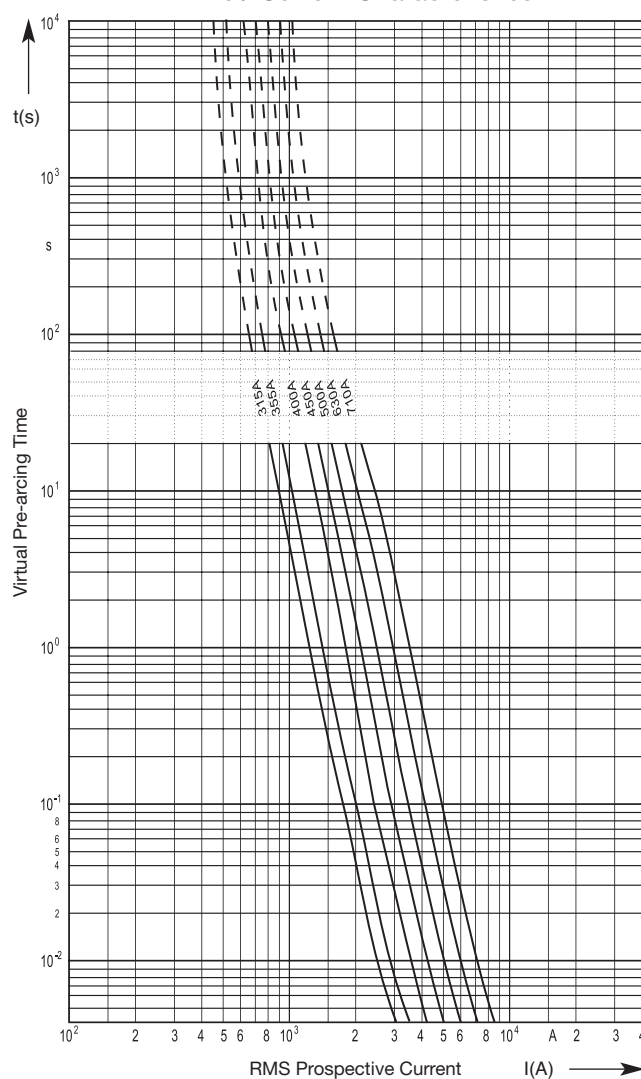
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
315 A	50 075 06	48	18,500	119,000	
355 A	50 075 06	55	22,300	143,000	
400 A	50 075 06	58	26,100	167,000	
450 A	50 075 06	63	52,300	335,000	
500 A	50 075 06	68	70,100	449,000	
630 A	50 075 06	87	106,000	679,000	
710 A	50 075 06	104	145,000	928,000	

Cut-off-characteristics



Time / Current Characteristics



Size
000

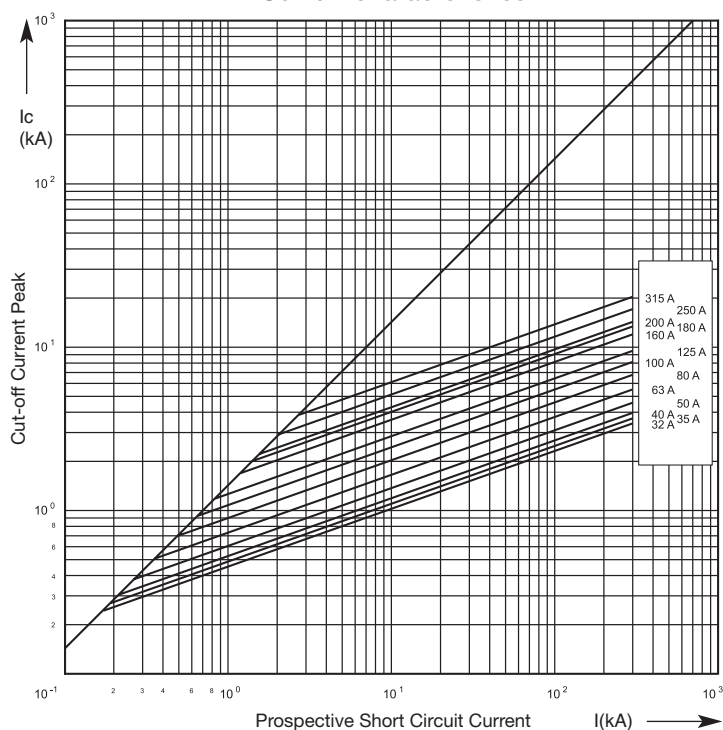
Rated voltage
AC 690/700 V

Operating class
aR

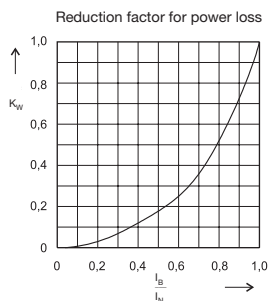
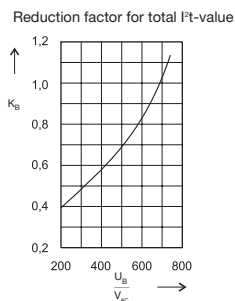
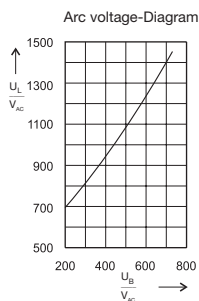
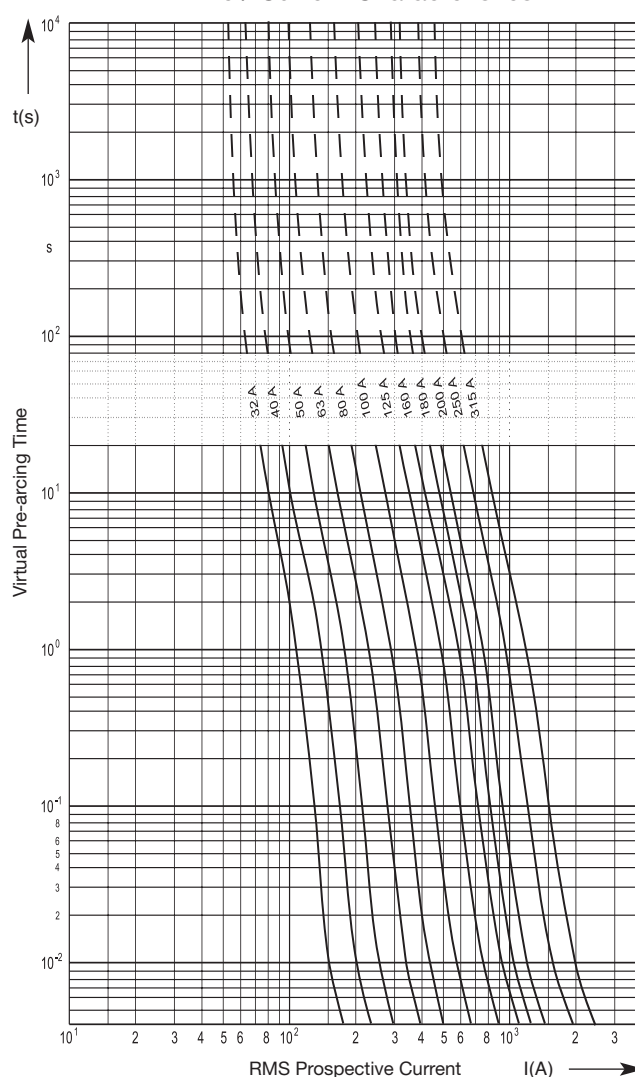
Rated breaking capacity
600 V/300 kA · 700 V/200 kA

Rated current	Part No.	Part No. without indicator	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s
32 A	20 559 20	20 559 21	8	52	290
35 A	20 559 20	20 559 21	9	66	360
40 A	20 559 20	20 559 21	10	90	500
50 A	20 559 20	20 559 21	12	140	770
63 A	20 559 20	20 559 21	14	250	1,400
80 A	20 559 20	20 559 21	18	470	2,600
100 A	20 559 20	20 559 21	22	730	4,000
125 A	20 559 20	20 559 21	26	1,300	7,200
160 A	20 559 20	20 559 21	21	2,800	15,400
180 A	20 559 20	20 559 21	35	3,700	20,400
200 A	20 559 20	20 559 21	39	4,500	25,000
250 A	20 559 20	20 559 21	47	8,000	44,000
315 A	20 559 20	20 559 21	58	14,000	77,000

Cut-off-characteristics

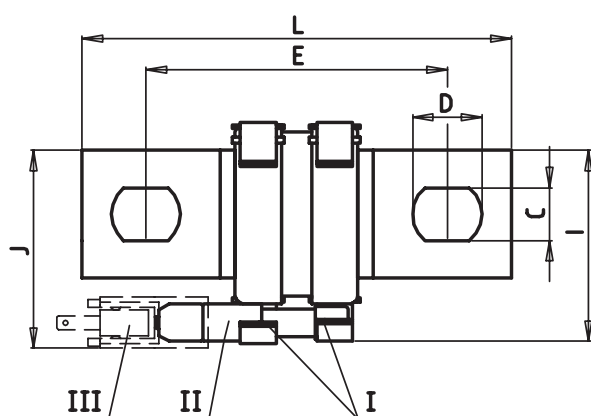
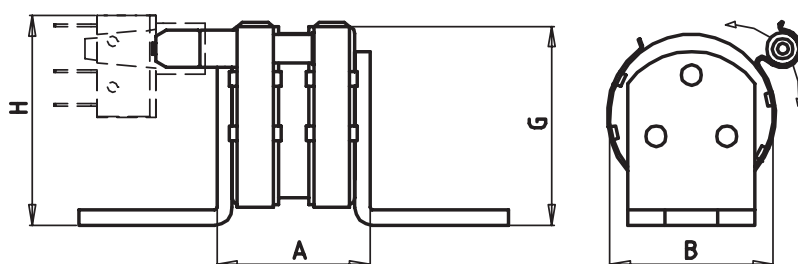


Time / Current Characteristics



Sets for Indicator fuses with microswitch

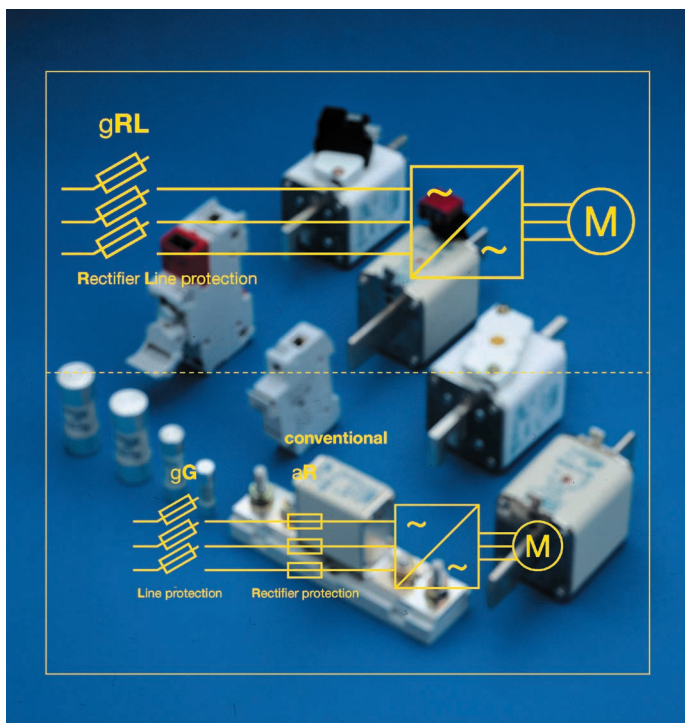
Part No. fuse links	I Set of clips for indicator fuse	II indicator fuse	III Microswitch	H	I	J
50 053 06	58 053 04	58 053 07	58 053 05.1	0.98" (25 mm)	0.87" (22 mm)	0.94" (24 mm)
50 054 06	58 054 04	58 053 07	58 053 05.1	1.60" (41 mm)	1.46" (37 mm)	1.54" (39 mm)
50 073 06	58 053 04	58 073 07	58 053 05.1	0.98" (25 mm)	0.87" (22 mm)	0.94" (24 mm)
50 074 06	58 054 04	58 073 07	58 053 05.1	1.60" (41 mm)	1.46" (37 mm)	1.54" (39 mm)
50 071 06	58 053 07	58 053 07	58 053 05.1	0.98" (25 mm)	0.87" (22 mm)	0.94" (24 mm)
50 075 06	58 073 07	58 073 07	58 053 05.1	1.60" (41 mm)	1.46" (37 mm)	1.54" (39 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

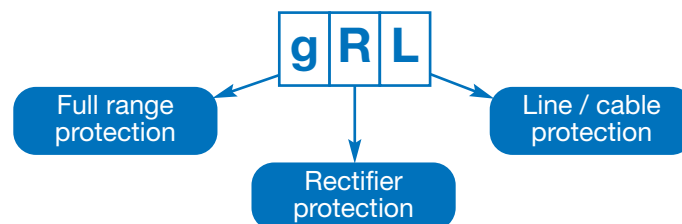
EUROPEAN STANDARD

CLASS gRL



Fuse type gRL offers:

- Semiconductor protection against short circuit faults via their Ultra Rapid “gR” characteristic.
- Cable protection against overload via their “gG” characteristic.



This line of gRL class fuses offers superior combination of **two fuses into one**.

Type gRL fuses provide protection to power electronic equipment and cables with low power losses and low I^2t -values simultaneously.

- Knife blade contact fuses
 Voltage rating: AC 690 V
 Current rating: 16-800 A
 Standard: DIN 43620
- Fuses with bolted contacts
 Voltage rating: AC 690 V
 Current rating: 16-800 A
 Standard: DIN 43653
- Cylindrical fuses
 Voltage rating: AC 500-690 V
 Current rating: 6-100 A

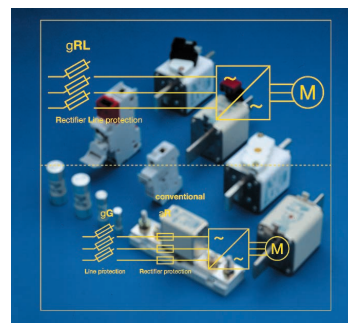
Features / Benefits

- ▶ High current limitation
- ▶ Low power losses
- ▶ Semiconductor protection against short circuit faults
- ▶ Cable protection against overload current
- ▶ Low I^2t -values
- ▶ High interrupting rating up to 200 kA
- ▶ Compliance with the following standards: IEC 60269-1 / -2-1 and -4 · DIN 43620-1 · DIN 43653
- ▶ Class gRL follows the requirements of the new standardized class gS
- ▶  Recognition

FUSES FOR SEMICONDUCTOR PROTECTION

EUROPEAN STANDARD

TYPE gRL



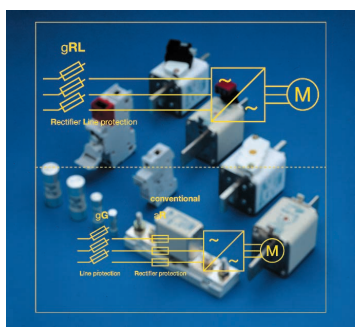
Selection Guide

Size	Rated Voltage AC	Contact Type	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
NH 000	690 V	knife contacts	combi indicator	20 477 34	URL 4	URL 22
NH 00	690 V	knife contacts	combi indicator	20 209 34	URL 5	URL 22
NH 1	690 V	knife contacts	combi indicator	20 211 34	URL 6	URL 23
NH 2	690 V	knife contacts	combi indicator	20 212 34	URL 7	URL 24
NH 3	690 V	knife contacts	combi indicator	20 213 34	URL 8	URL 25
NH 000	690 V	DIN 80	top indicator	20 282 34	URL 9	URL 22
NH 000	690 V	DIN 80	with microswitch fitting	20 558 34	URL 11	URL 22
NH 00	690 V	DIN 80	top indicator	20 189 34	URL 10	URL 22
NH 00	690 V	DIN 80	with microswitch fitting	20 412 34	URL 12	URL 22
SQB 1	690 V	DIN 110	without microswitch fitting	20 252 34	URL 13	URL 23
SQB 2	690 V	DIN 110	without microswitch fitting	20 253 34	URL 14	URL 24
SQB 3	690 V	DIN 110	without microswitch fitting	20 254 34	URL 15	URL 25
SQB 1	690 V	DIN 110	with microswitch fitting	20 271 34	URL 16	URL 23
SQB 2	690 V	DIN 110	with microswitch fitting	20 274 34	URL 17	URL 24
SQB 3	690 V	DIN 110	with microswitch fitting	20 277 34	URL 18	URL 25
10 x 38	690 V	cyl. contactcaps	without microswitch fitting	60 034 34	URL 19	URL 26
14 x 51	690 V	cyl. contactcaps	without microswitch fitting	50 124 34	URL 20	URL 27
22 x 58	690 V	cyl. contactcaps	without microswitch fitting	50 140 34	URL 21	URL 28

Selection Guide

Fuse Base for Fuses with knife contacts

Rated Voltage AC	Size	Part No.	Techn. Data Page
690 V	00	21 001 01	URL 33
690 V	00	21 001 10	URL 33
690 V	1	21 003 01	URL 34
690 V	2	21 004 01	URL 34
690 V	3	21 005 01	URL 34



FUSES FOR SEMICONDUCTOR PROTECTION EUROPEAN STANDARD

TYPE gRL

Selection Guide

Fuse Base for Fuses with screwcontacts

Rated Voltage AC	Fixing Center	Rated Current	Part No.	Techn. Data Page	
900 V	80 mm	630 A	21 313 01	URL 29	
1400 V	110 mm	630 A	21 323 01	URL 29	
900 V	80 mm	1250 A	21 313 02	URL 30	
1400 V	110 mm	1250 A	21 323 02	URL 30	
1000 V	80 mm	400 A	21 189 01	URL 31	

Selection Guide

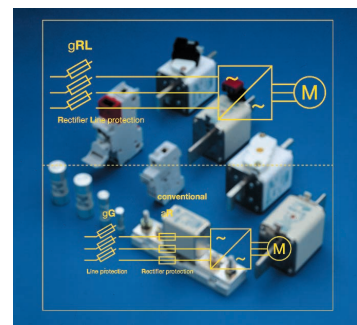
Microswitch

Type	Rated Current AC	Rated Voltage	Contact	Part No.	Techn. Data Page	
GL-Microswitch	5 A	250 V	1 change over	28 002 05	URL 32	
M-Microswitch	10 A	250 V	1 change over	28 001 04	URL 32	

Selection Guide

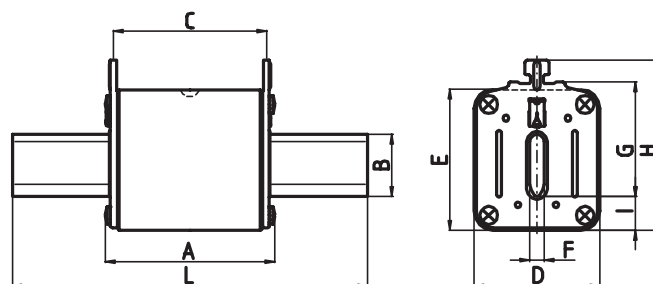
ZS-Modules for Fuses with cylindrical contact caps

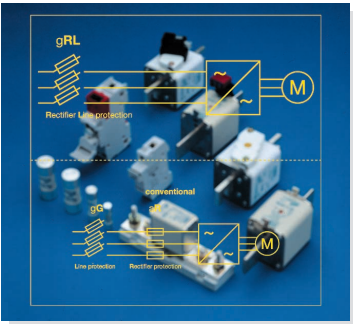
Size	Indicator Type	Part No.	Techn. Data Page	
10 x 38	1 pol	51 063 04	URL 35	
10 x 38	2 pol	51 063 04.2	URL 35	
10 x 38	3 pol	51 063 04.3	URL 35	
10 x 38	1 pol diode indicator	51 063 04.L	URL 35	
10 x 38	2 pol diode indicator	51 063 04.2L	URL 35	
10 x 38	3 pol diode indicator	51 063 04.3L	URL 35	
14 x 51	1 pol	51 058 04	URL 35	
14 x 51	2 pol	51 058 04.2	URL 35	
14 x 51	3 pol	51 058 04.3	URL 35	
14 x 51	1 pol microswitch	51 058 04.S	URL 35	
14 x 51	3 pol microswitch	51 058 04.3S	URL 35	
22 x 58	1 pol	51 060 04	URL 35	
22 x 58	2 pol	51 060 04.2	URL 35	
22 x 58	3 pol	51 060 04.3	URL 35	
22 x 58	1 pol microswitch	51 060 04.S	URL 35	
22 x 58	3 pol microswitch	51 060 04.3S	URL 35	

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
000
Rated voltage
AC 690/700 V
Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
16 A	20 477 34	✓	11.0	3
20 A	20 477 34	✓	11.0	3
25 A	20 477 34	✓	11.0	3
32 A	20 477 34	✓	11.0	3
40 A	20 477 34	✓	11.0	3
50 A	20 477 34	✓	11.0	3
80 A	20 477 34	✓	11.0	3

A_{max}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

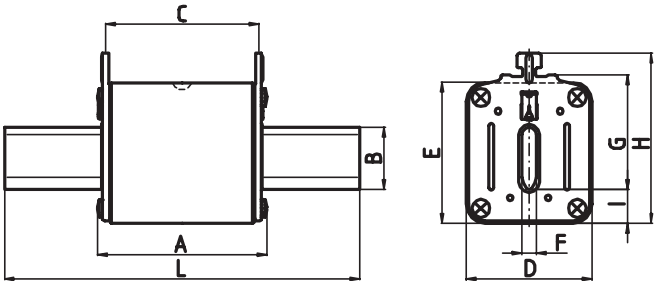




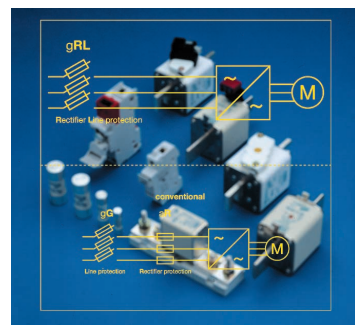
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size	Rated voltage	Standard
00	AC 690/700 V	DIN 43620/1

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
100 A	20 209 34	✓	15.4	3
125 A	20 209 34	✓	15.4	3

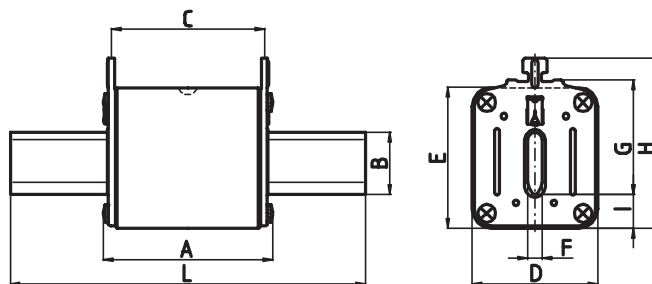


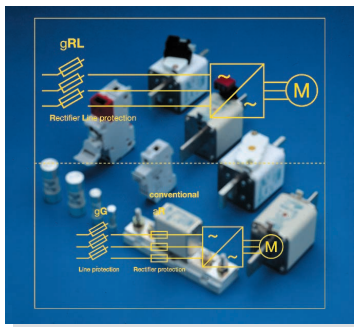
A _{max}	2.13" (54 mm)
B	0.59" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
1
Rated voltage
AC 690/700 V
Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
63 A	20 211 34	✓	37	3
80 A	20 211 34	✓	37	3
100 A	20 211 34	✓	37	3
125 A	20 211 34	✓	37	3
160 A	20 211 34	✓	37	3
200 A	20 211 34	✓	37	3
250 A	20 211 34	✓	37	3
315 A	20 211 34	✓	37	3

A _{max}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)





FUSES FOR SEMICONDUCTOR PROTECTION EUROPEAN STANDARD

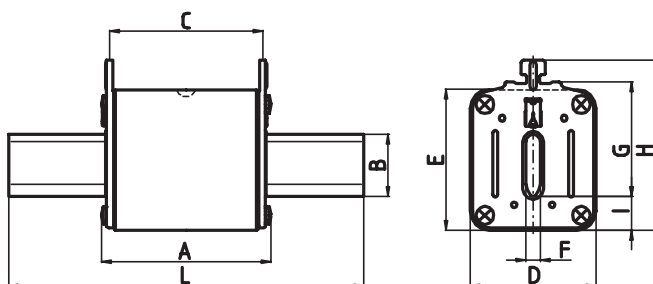
gRL

Size
2

Rated voltage
AC 690/700 V

Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
160 A	20 212 34	✓	37	3
200 A	20 212 34	✓	37	3
250 A	20 212 34	✓	37	3
315 A	20 212 34	✓	65	3
400 A	20 212 34	✓	65	3
450 A	20 212 34	✓	65	3
500 A	20 212 34	✓	65	3

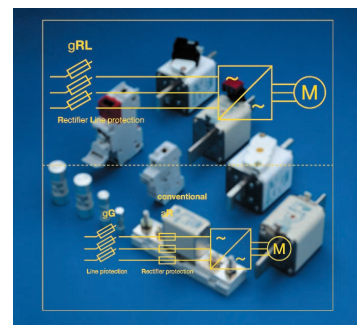


20 212 34
≤ 250 A

A _{max}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 212 34
≥ 315 A

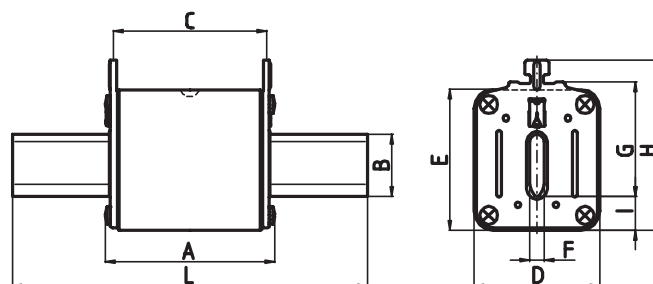
A _{max}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

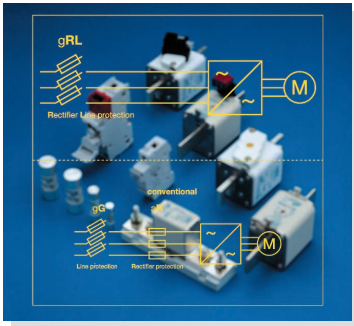

Size
3
Rated voltage
AC 690/700 V
Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
315 A	20 213 34		65	3	
400 A	20 213 34		88	3	
500 A	20 213 34		88	3	
630 A	20 213 34		88	3	
710 A	20 213 34		88	3	
800 A	20 213 34		88	3	

20 213 34
≤ 315 A
20 213 34
≥ 400 A

A_{max}	2.95" (75 mm)	A_{max}	2.95" (75 mm)
B	1.02" (26 mm)	B	1.26" (32 mm)
C	2.56" (65 mm)	C	2.56" (65 mm)
D	2.10" (53 mm)	D	2.56" (65 mm)
E	2.32" (59 mm)	E	2.90" (73.5 mm)
F	0.24" (6 mm)	F	0.24" (6 mm)
G	2.36" (60 mm)	G	2.36" (60 mm)
H	3.27" (83 mm)	H	3.40" (86 mm)
I	0.55" (14 mm)	I	0.67" (17 mm)
L	5.90" (150 mm)	L	5.90" (150 mm)

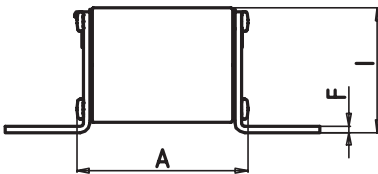
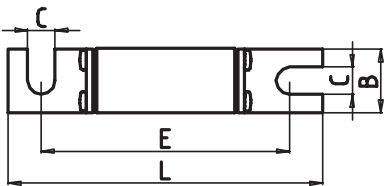




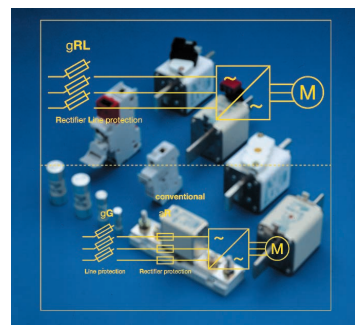
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size	Rated voltage	Standard
000	AC 690 V	DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
16 A	20 282 34		17	6	
20 A	20 282 34		17	6	
25 A	20 282 34		17	6	
32 A	20 282 34		17	6	
40 A	20 282 34		17	6	
50 A	20 282 34		17	6	
63 A	20 282 34		17	6	
80 A	20 282 34		17	6	

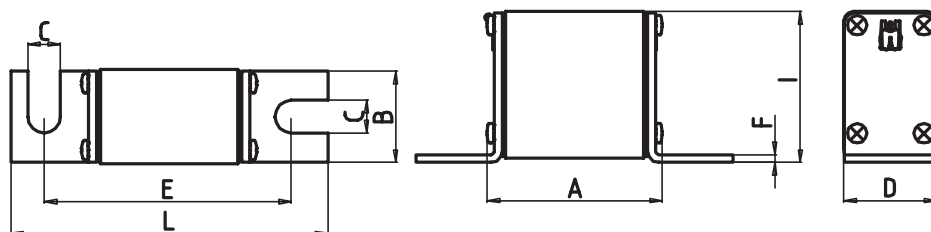


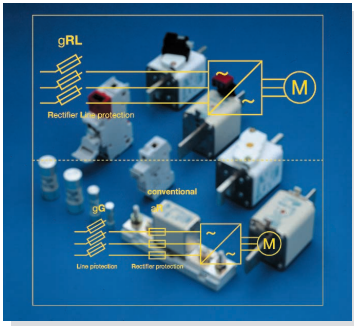
A	2.17" (55 mm)
B	0.80" (20 mm)
C	0.33" (8.5 mm)
D	0.80" (20.4 mm)
E	3.07" (78 mm)
F	0.08" (2 mm)
I	1.54" (39 mm)
L _(max)	3.94" (100 mm)

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
00
Rated voltage
AC 690 V
Standard
DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
100 A	20 189 34		19	3
125 A	20 189 34		19	3

A	2.17" (55 mm)
B	1.13" (28,8 mm)
C	0.40" (10,3 mm)
D	1.16" (29,5 mm)
E	3.07" (78 mm)
F	0.10" (2,5 mm)
I	1.54" (39 mm)
L_(max)	4.13" (105 mm)

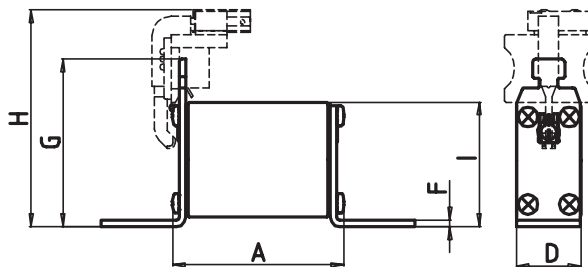
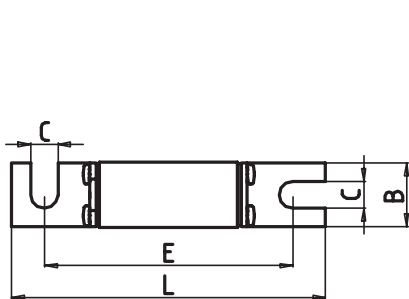




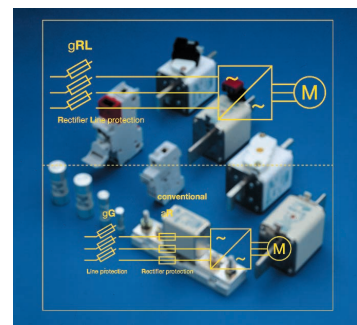
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size 000	Rated voltage AC 690 V	Standard DIN 43653
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Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
16 A	20 558 34		18	6	
20 A	20 558 34		18	6	
25 A	20 558 34		18	6	
32 A	20 558 34		18	6	
40 A	20 558 34		18	6	
50 A	20 558 34		18	6	
63 A	20 558 34		18	6	
80 A	20 558 34		18	6	

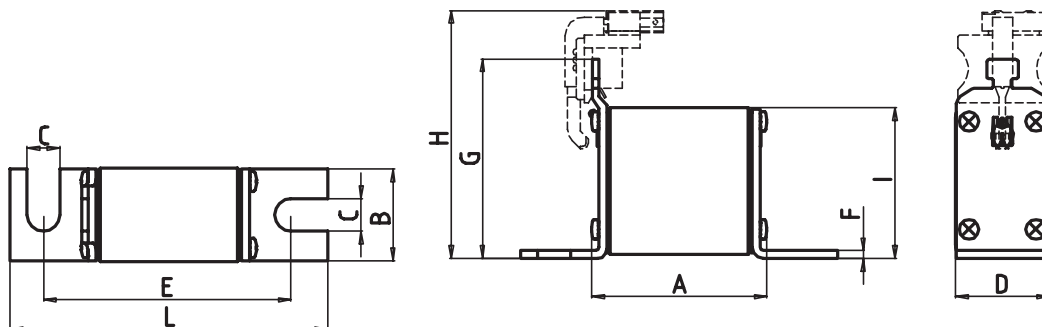


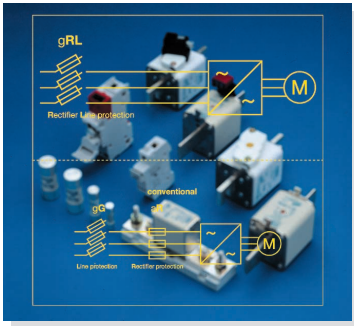
A	2.17" (55 mm)
B	0.80" (20 mm)
C	0.33" (8,5 mm)
D	0.80" (20,4 mm)
E	3.07" (78 mm)
F	0.08" (2 mm)
G	2.10" (53 mm)
H	2.76" (70 mm)
I	1.54" (39 mm)
L_(max)	3.94" (100 mm)

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
00
Rated voltage
AC 690 V
Standard
DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
100 A	20 412 34		21	3
125 A	20 412 34		21	3

A	2.17" (55 mm)
B	1.13" (28.8 mm)
C	0.40" (10.3 mm)
D	1.16" (29.5 mm)
E	3.07" (78 mm)
F	0.10" (2.5 mm)
G	2.48" (63 mm)
H	3.15" (80 mm)
I	1.54" (39 mm)
L_(max)	4.13" (105 mm)

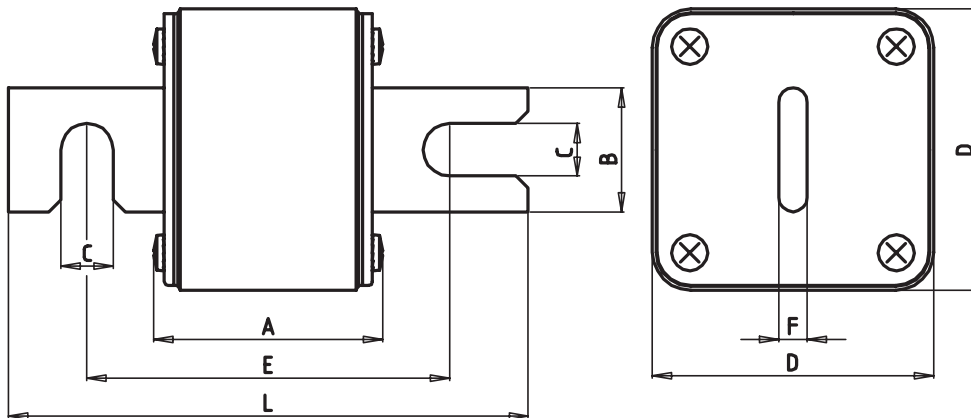




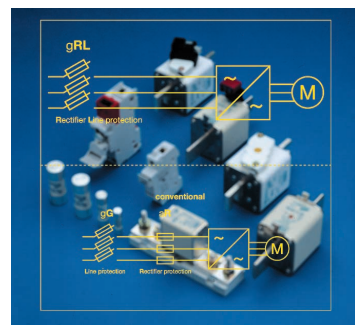
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size 1	Rated voltage AC 690 V	Standard DIN 43653
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Rated current	Part No. without indicator	UL Rec.	Weight (kg/100)	Pack	
63 A	20 252 34		24	3	
80 A	20 252 34		27	3	
100 A	20 252 34		27	3	
125 A	20 252 34		27	3	
160 A	20 252 34		27	3	
200 A	20 252 34		27	3	
250 A	20 252 34		37	3	
315 A	20 252 34		37	3	

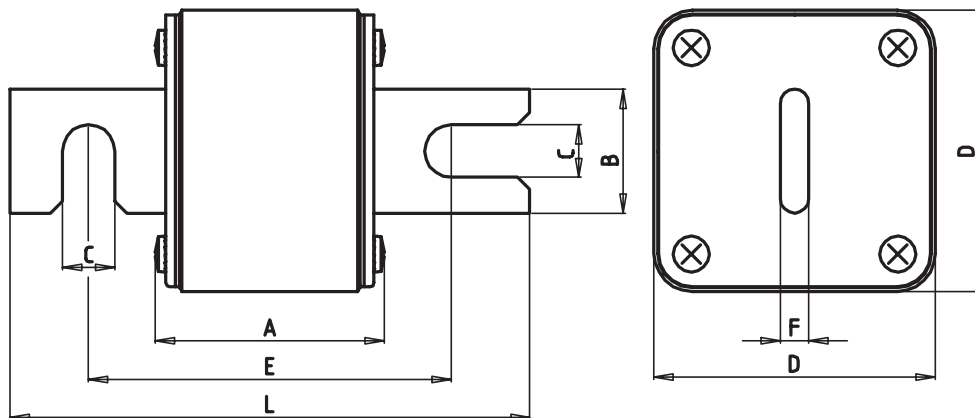


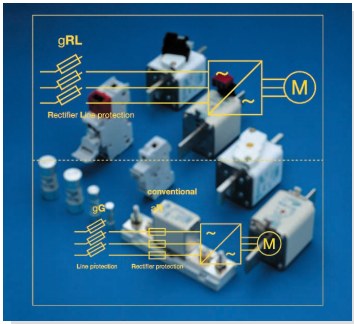
A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.01" (51 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
2
Rated voltage
AC 690 V
Standard
DIN 43653

Rated current	Part No. without indicator	UL Rec.	Weight (kg/100)	Pack
160 A	20 253 34		65	3
200 A	20 253 34		65	3
250 A	20 253 34		65	3
315 A	20 253 34		65	3
400 A	20 253 34		65	3
450 A	20 253 34		65	3
500 A	20 253 34		65	3

A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)

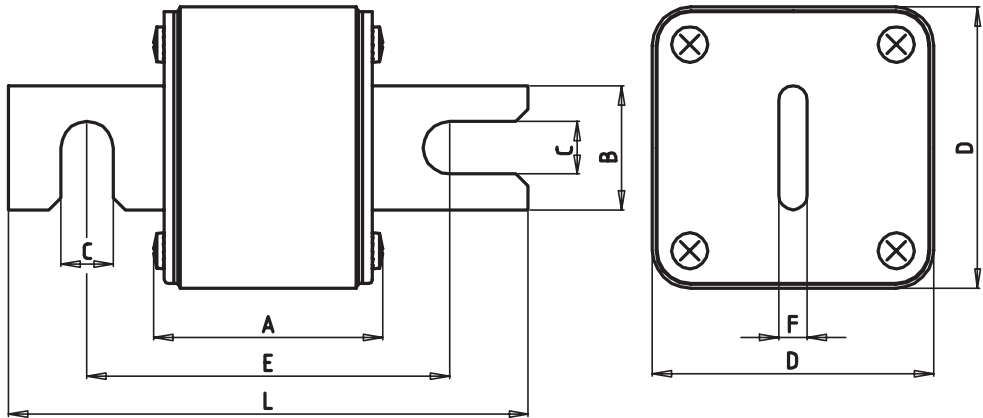




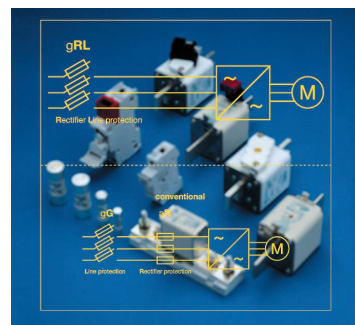
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size 3	Rated voltage AC 690 V	Standard DIN 43653
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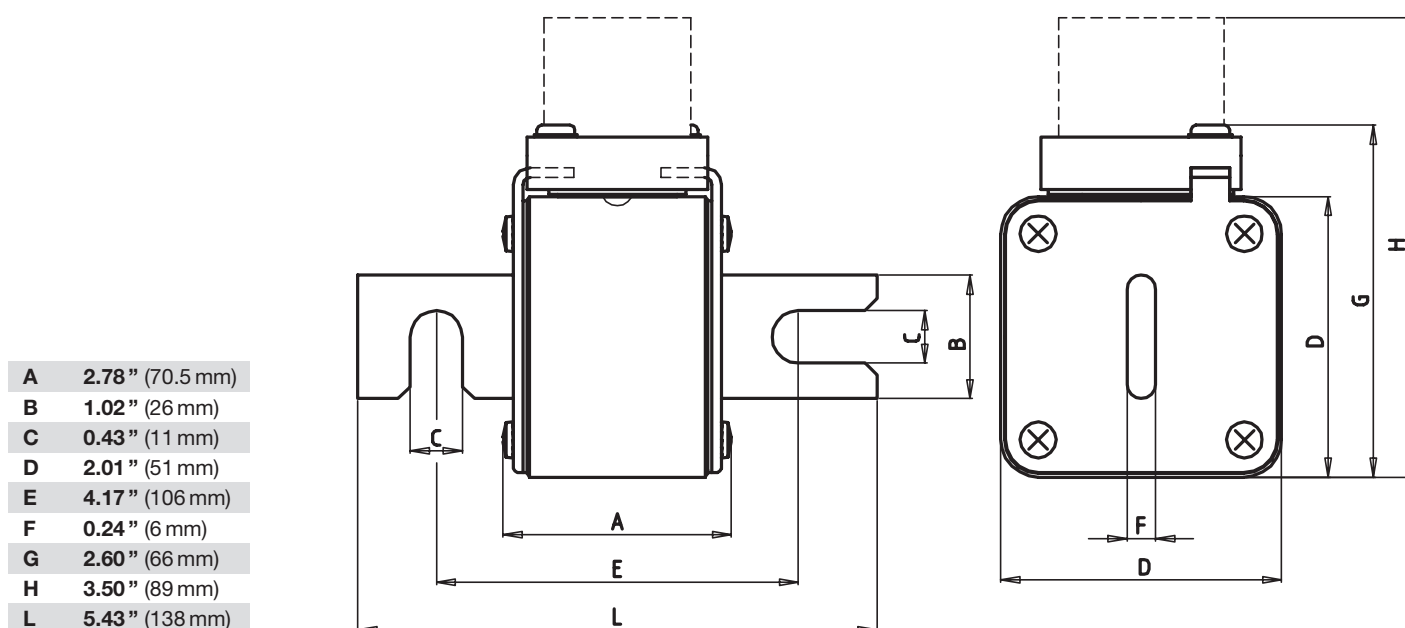
Rated current	Part No. without indicator	UL Rec.	Weight (kg/100)	Pack	
315 A	20 254 34		88	3	
400 A	20 254 34		88	3	
500 A	20 254 34		88	3	
630 A	20 254 34		88	3	
710 A	20 254 34		88	3	
800 A	20 254 34		88	3	

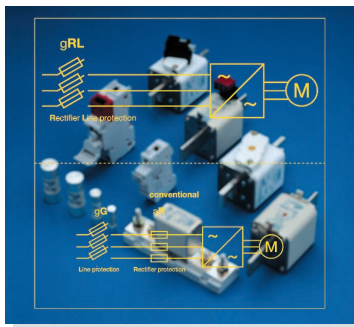


A	2.83" (72 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)

FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD
gRL

Size
1
Rated voltage
AC 690 V
Standard
DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
63 A	20 271 34		24	3
80 A	20 271 34		27	3
100 A	20 271 34		27	3
125 A	20 271 34		27	3
160 A	20 271 34		27	3
200 A	20 271 34		37	3
250 A	20 271 34		37	3
315 A	20 271 34		37	3





FUSES FOR SEMICONDUCTOR PROTECTION EUROPEAN STANDARD

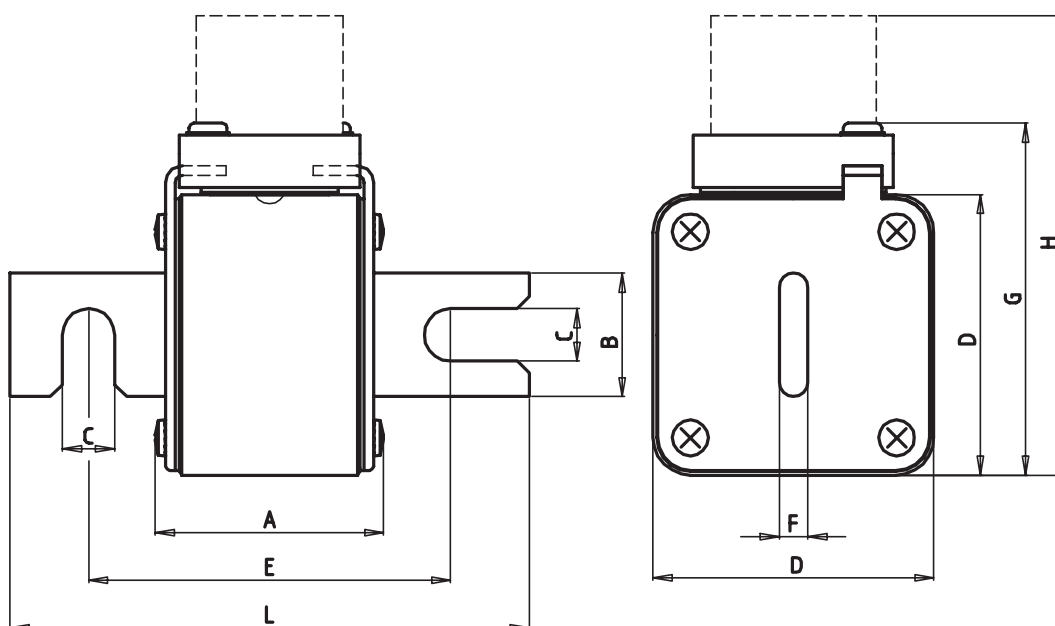
gRL

Size
2

Rated voltage
AC 690 V

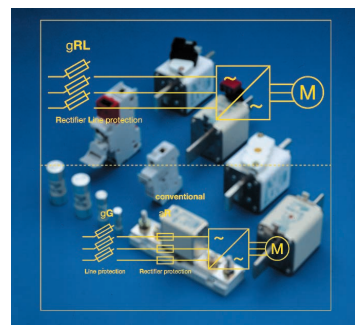
Standard
DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
160 A	20 274 34		65	3	
200 A	20 274 34		65	3	
250 A	20 274 34		65	3	
315 A	20 274 34		65	3	
400 A	20 274 34		65	3	
450 A	20 274 34		65	3	
500 A	20 274 34		65	3	



A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	5.43" (138 mm)

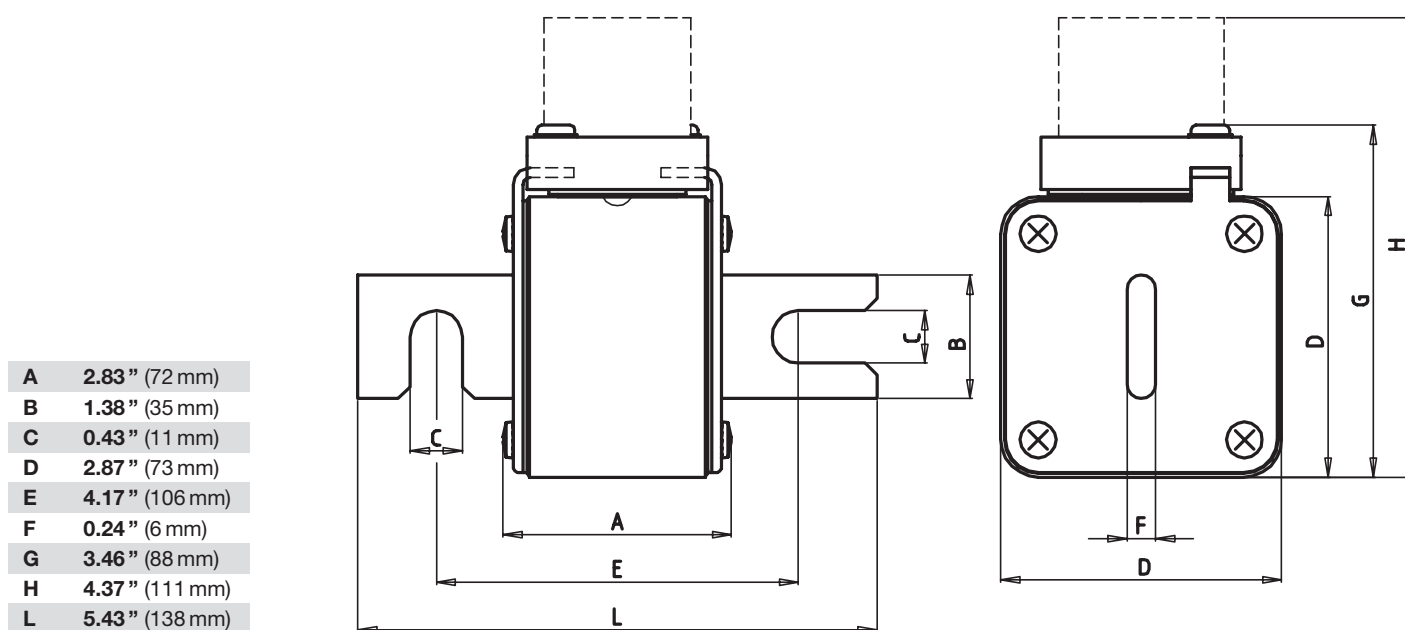
FUSES FOR SEMICONDUCTOR PROTECTION
 EUROPEAN STANDARD

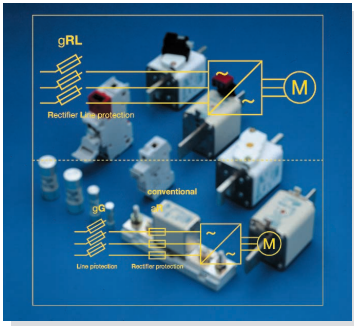
gRL

 Size
3

 Rated voltage
AC 690 V

 Standard
DIN 43653

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
315 A	20 277 34		88	3
400 A	20 277 34		88	3
500 A	20 277 34		88	3
630 A	20 277 34		88	3
710 A	20 277 34		88	3
800 A	20 277 34		88	3

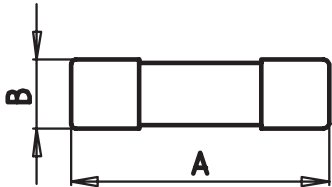




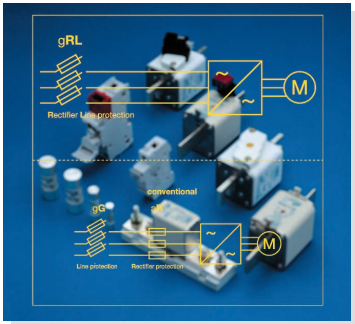
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size **10 x 38 mm** Rated voltage **AC 500 V**

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	60 034 34	✓	0.9	10	
8 A	60 034 34	✓	0.9	10	
10 A	60 034 34	✓	0.9	10	
12 A	60 034 34	✓	0.9	10	
16 A	60 034 34	✓	0.9	10	
20 A	60 034 34	✓	0.9	10	
25 A	60 034 34	✓	0.9	10	
30 A	60 034 34	✓	0.9	10	



A	1.50" (38 mm)
B	0.40" (10 mm)



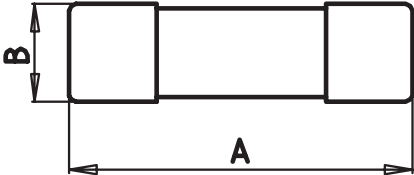
FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

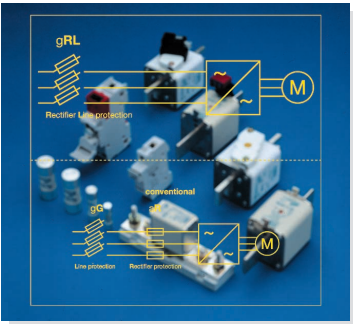
Size
14 x 51 mm

Rated voltage
AC 690 V

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
10 A	50 124 34		2.2	10
12 A	50 124 34		2.2	10
16 A	50 124 34		2.2	10
20 A	50 124 34		2.2	10
25 A	50 124 34		2.2	10
30 A	50 124 34		2.2	10
32 A	50 124 34		2.2	10
35 A	50 124 34		2.2	10
40 A	50 124 34		2.2	10

A 2.00" (51 mm)
B 0.55" (14 mm)

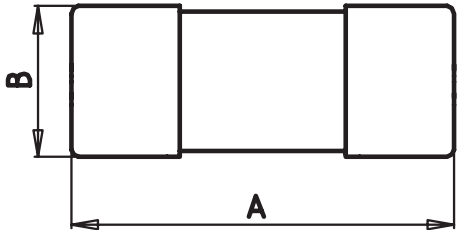




FUSES FOR SEMICONDUCTOR PROTECTION
EUROPEAN STANDARD **gRL**

Size **22 x 58 mm** Rated voltage **AC 690 V**

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
25 A	50 140 34		5.5	10	
30 A	50 140 34		5.5	10	
32 A	50 140 34		5.5	10	
35 A	50 140 34		5.5	10	
50 A	50 140 34		5.5	10	
63 A	50 140 34		5.5	10	
80 A	50 140 34		5.5	10	
100 A	50 140 34		5.5	10	



A 2.28" (58 mm)
B 0.87" (22 mm)

Size
000/00

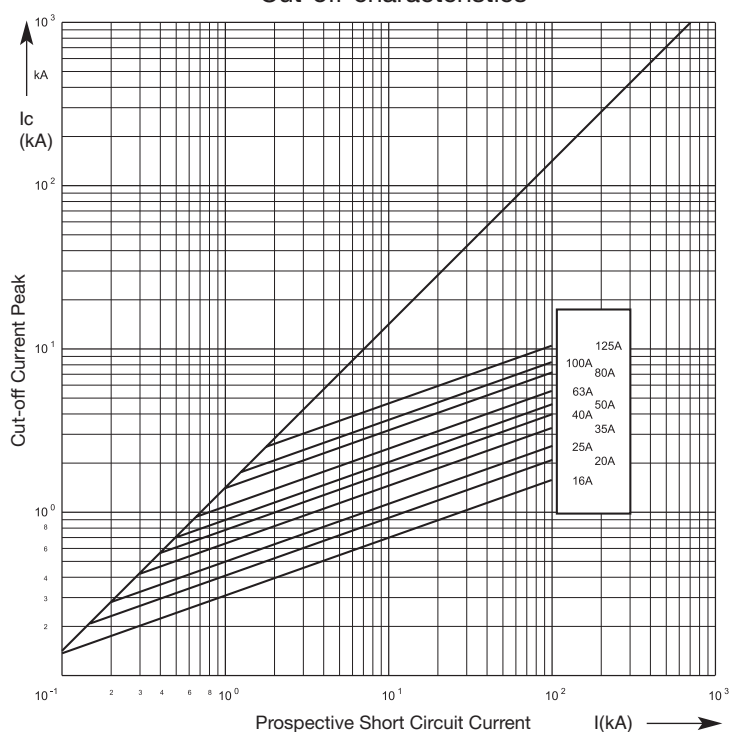
 Rated voltage
AC 690 / 700 V

 Operating class
gRL

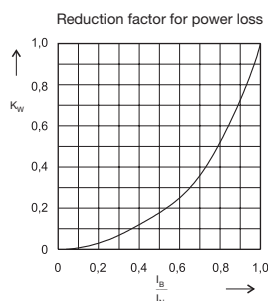
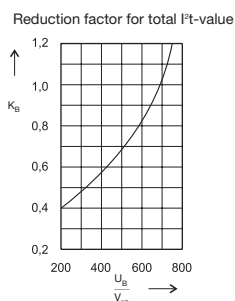
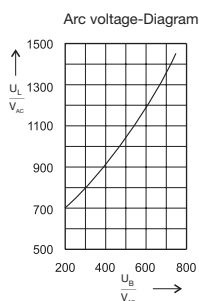
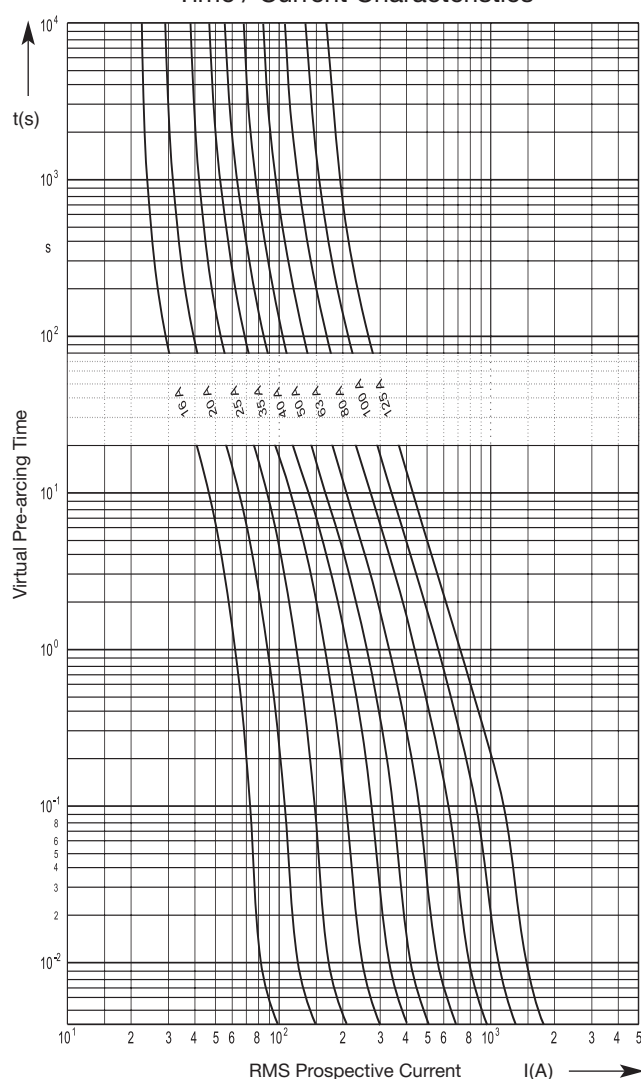
 Rated breaking capacity
200 kA

Rated current	Part No. knife contacts fitting for GL microswitch	Part No. screwcontacts fitting for GL microswitch	Part No. screwcontacts without fitting	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 690 V A ² s
16 A	20 477 34	20 558 34	20 282 34	3.2	18	180
20 A	20 477 34	20 558 34	20 282 34	3.6	41	410
25 A	20 477 34	20 558 34	20 282 34	4.2	74	740
35 A	20 477 34	20 558 34	20 282 34	5.2	170	1,700
40 A	20 477 34	20 558 34	20 282 34	5.6	300	3,000
50 A	20 477 34	20 558 34	20 282 34	6.5	460	4,600
63 A	20 477 34	20 558 34	20 282 34	7.6	840	8,400
80 A	20 477 34	20 558 34	20 282 34	8.8	1,800	18,000
100 A	20 209 34	20 412 34	20 189 34	10.5	3,000	30,000
125 A	20 209 34	20 412 34	20 189 34	12.0	6,000	60,000

Cut-off-characteristics



Time / Current Characteristics



Size
1

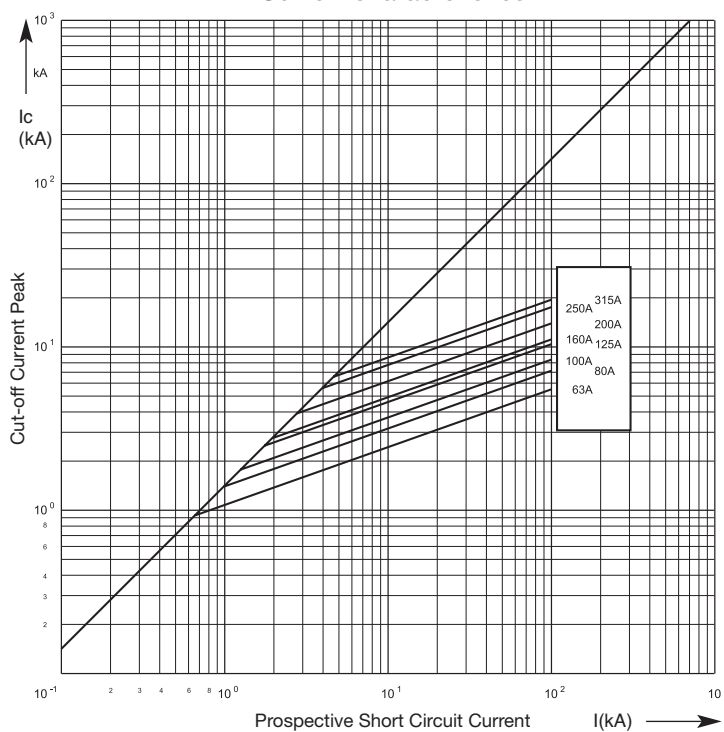
Rated voltage
AC 690 / 700 V

Operating class
gRL

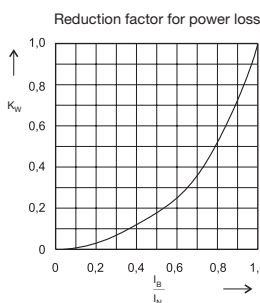
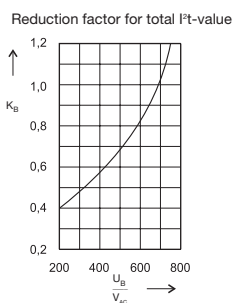
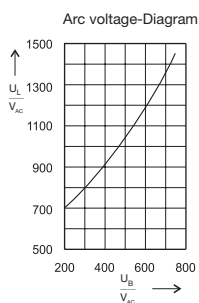
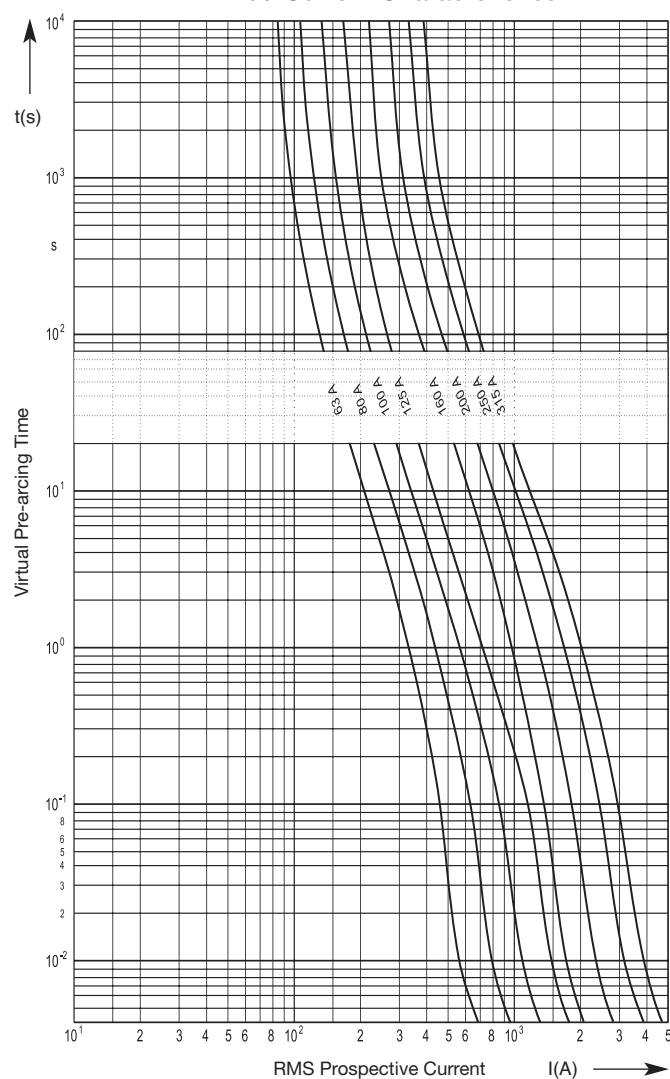
Rated breaking capacity
200 kA

Rated current	Part No. knife contacts	Part No. screwcontacts without indicator	Part No. screwcontacts fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
63 A	20 211 34	20 252 34	20 271 34	8.0	840	5,300	
80 A	20 211 34	20 252 34	20 271 34	9.5	1,800	11,300	
100 A	20 211 34	20 252 34	20 271 34	12.0	3,000	19,000	
125 A	20 211 34	20 252 34	20 271 34	12.6	6,000	38,000	
160 A	20 211 34	20 252 34	20 271 34	23.0	7,400	47,000	
200 A	20 211 34	20 252 34	20 271 34	27.0	15,000	95,000	
250 A	20 211 34	20 252 34	20 271 34	33.0	30,000	190,000	
315 A	20 211 34	20 252 34	20 271 34	44.0	43,000	271,000	

Cut-off-characteristics



Time / Current Characteristics



Size
2

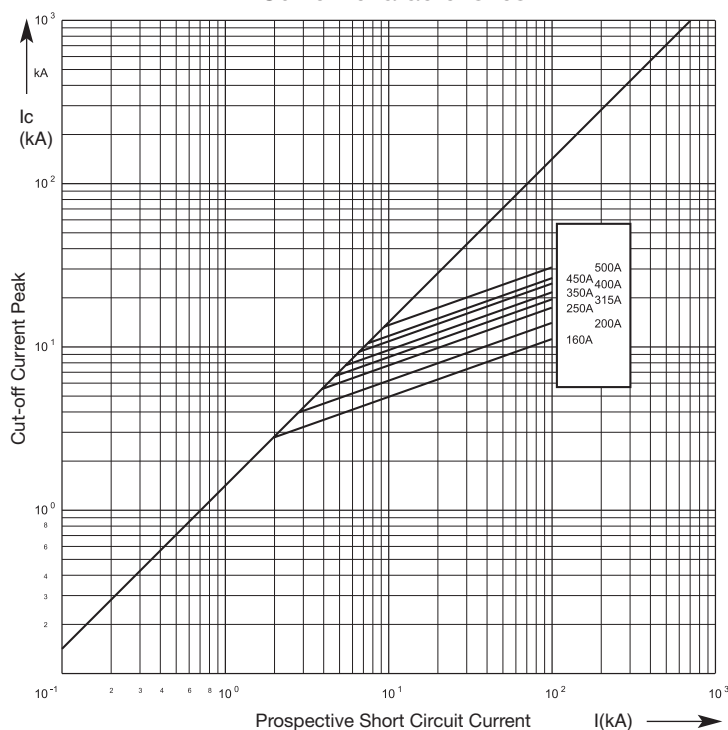
Rated voltage
AC 690 / 700 V

Operating class
gRL

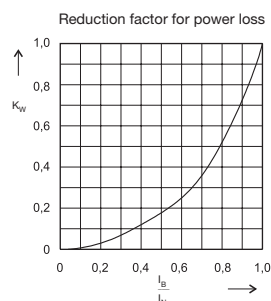
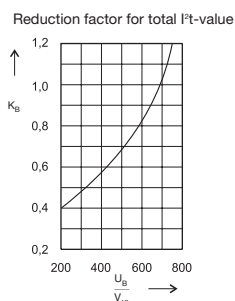
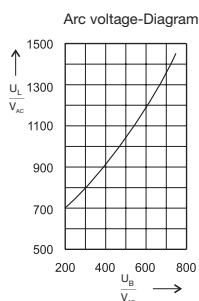
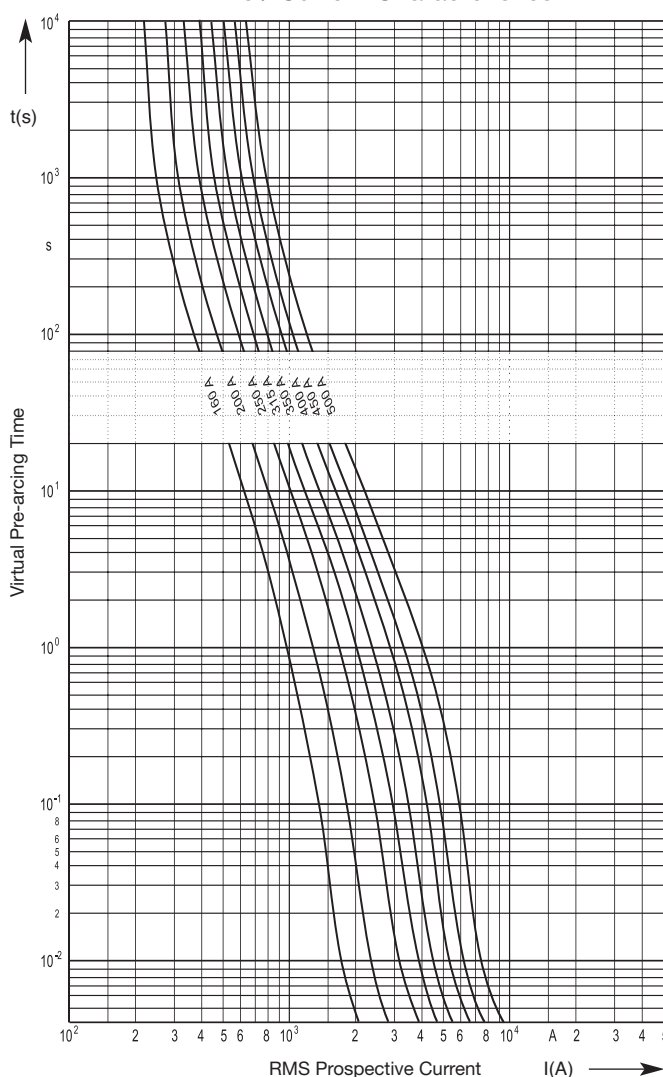
Rated breaking capacity
200 kA

Rated current	Part No. knife contacts	Part No. screwcontacts without indicator	Part No. screwcontacts fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
160 A	20 212 34	20 253 34	20 274 34	23	7,400	47,000	
200 A	20 212 34	20 253 34	20 274 34	27	15,000	95,000	
250 A	20 212 34	20 253 34	20 274 34	30	30,000	190,000	
315 A	20 212 34	20 253 34	20 274 34	40	43,000	271,000	
350 A	20 212 34	20 253 34	20 274 34	43	58,000	310,000	
400 A	20 212 34	20 253 34	20 274 34	48	85,000	442,000	
450 A	20 212 34	20 253 34	20 274 34	50	107,000	560,000	
500 A	20 212 34	20 253 34	20 274 34	63	170,000	880,000	

Cut-off-characteristics



Time / Current Characteristics



Size
3

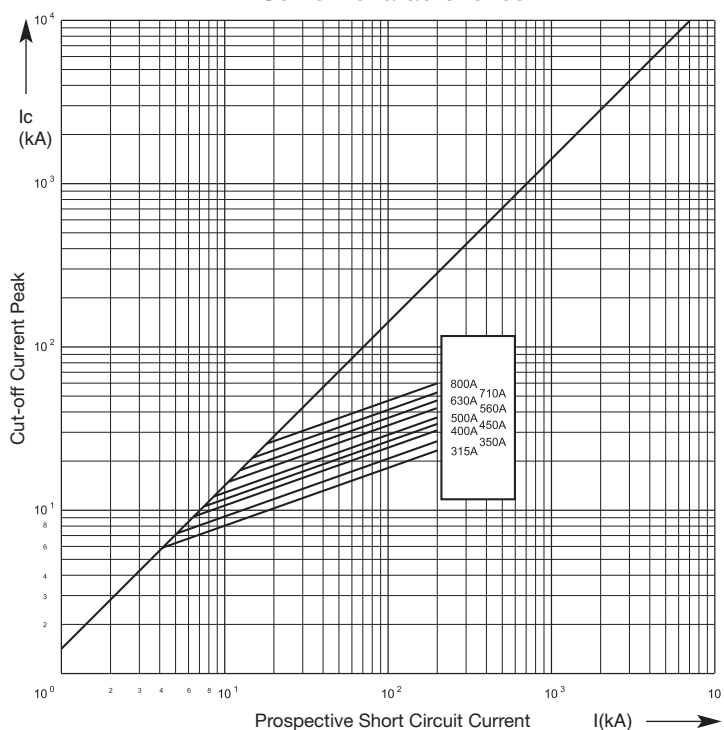
Rated voltage
AC 690 / 700 V

Operating class
gRL

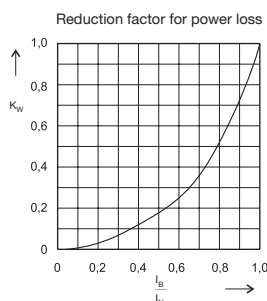
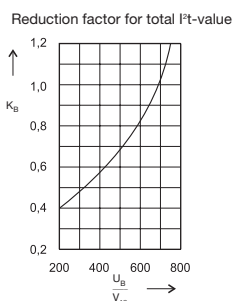
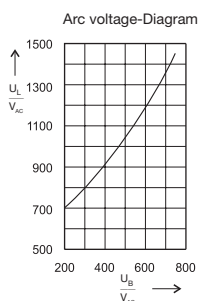
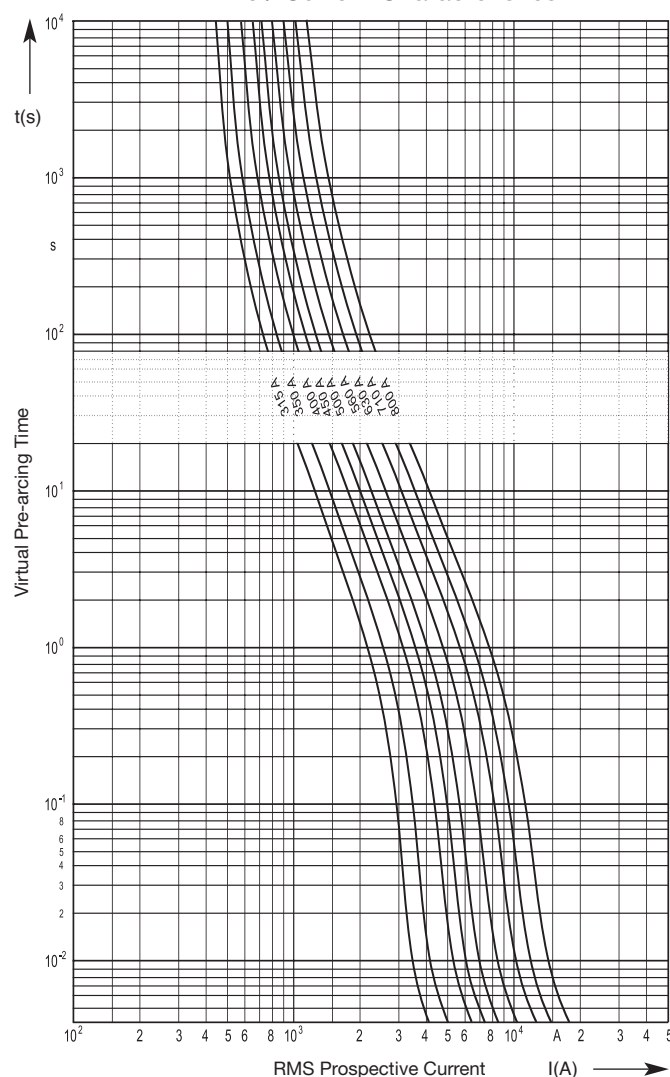
Rated breaking capacity
100 kA

Rated current	Part No. knife contacts	Part No. screwcontacts without indicator	Part No. screwcontacts fitting for microswitch	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s
315 A	20 213 34	20 254 34	20 277 34	38	43,000	271,000
350 A	20 213 34	20 254 34	20 277 34	42	58,000	310,000
400 A	20 213 34	20 254 34	20 277 34	46	85,000	442,000
450 A	20 213 34	20 254 34	20 277 34	48	107,000	560,000
500 A	20 213 34	20 254 34	20 277 34	55	170,000	880,000
560 A	20 213 34	20 254 34	20 277 34	58	190,000	1,100,000
630 A	20 213 34	20 254 34	20 277 34	64	280,000	1,400,000
710 A	20 213 34	20 254 34	20 277 34	69	420,000	1,900,000
800 A	20 213 34	20 254 34	20 277 34	74	620,000	2,500,000

Cut-off-characteristics



Time / Current Characteristics



Size
10 x 38 mm

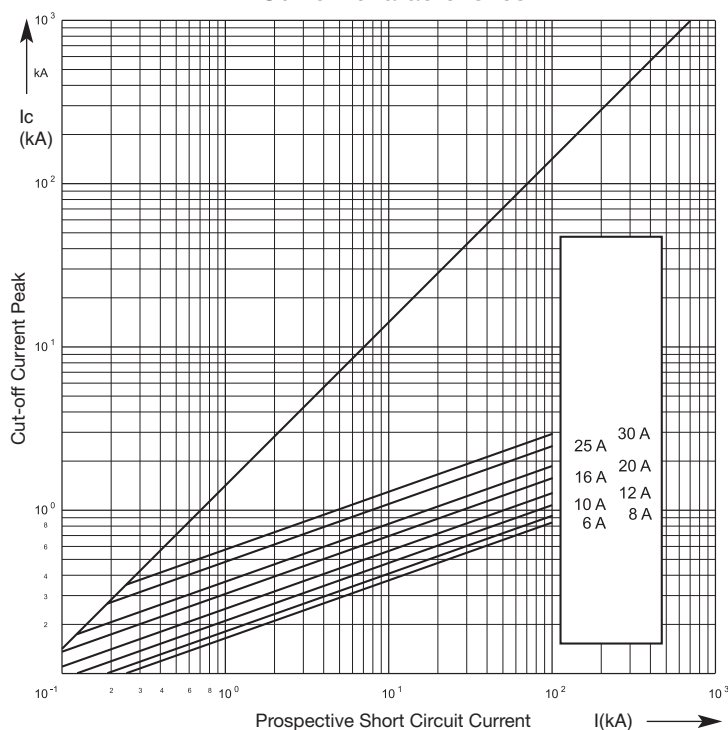
Rated voltage
AC 500 V

Operating class
gRL

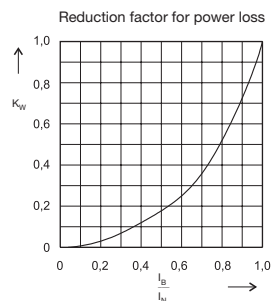
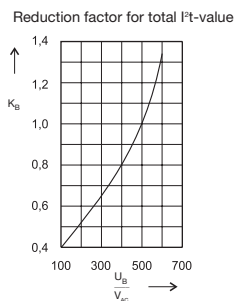
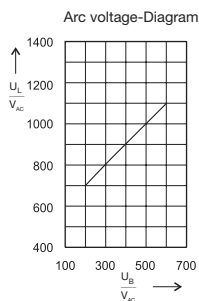
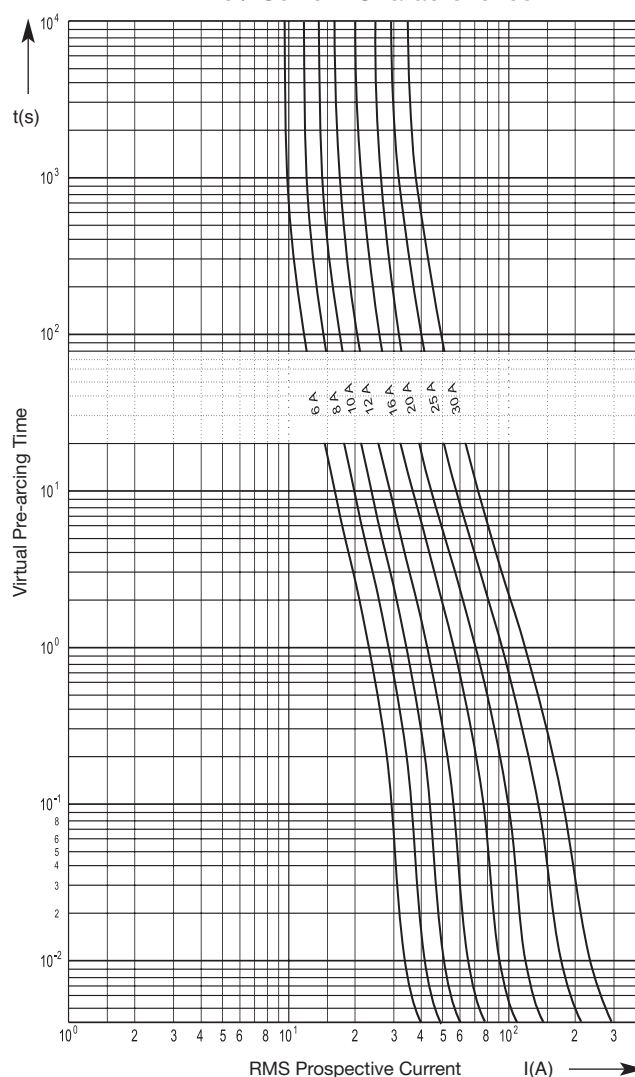
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 500 V A ² s	
6 A	60 034 34	1.0	2.5	20	
8 A	60 034 34	1.3	3.3	36	
10 A	60 034 34	1.6	5.1	41	
12 A	60 034 34	1.9	8.7	69	
16 A	60 034 34	2.4	17.0	130	
20 A	60 034 34	3.5	29.0	240	
25 A	60 034 34	3.8	66.0	530	
30 A	60 034 34	4.3	120.0	950	

Cut-off-characteristics



Time / Current Characteristics



Size
14 x 51 mm

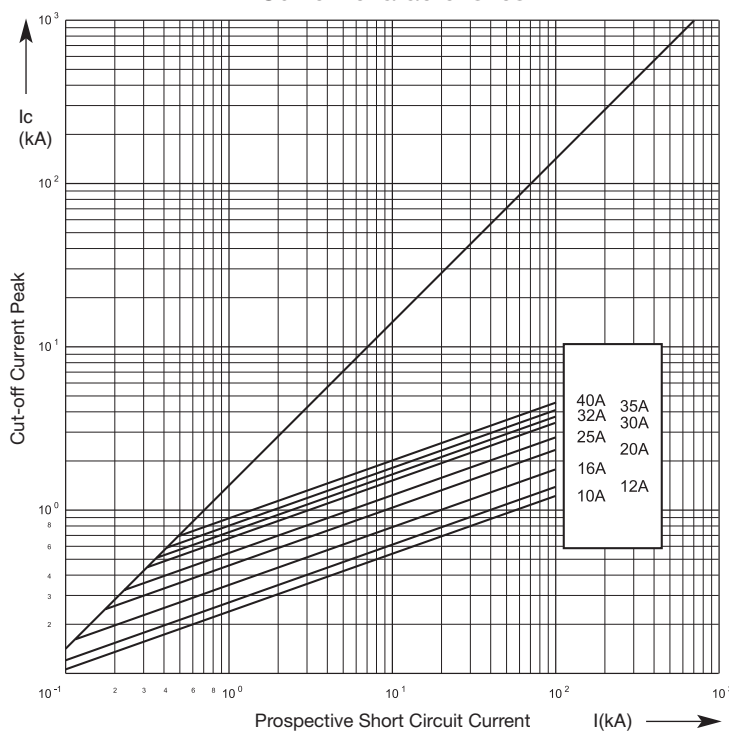
Rated voltage
AC 690 V

Operating class
gRL

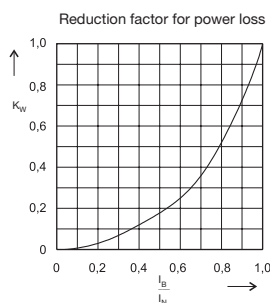
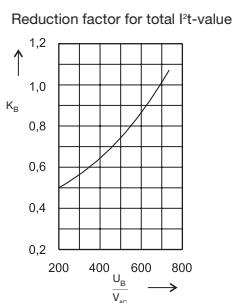
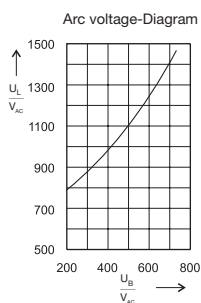
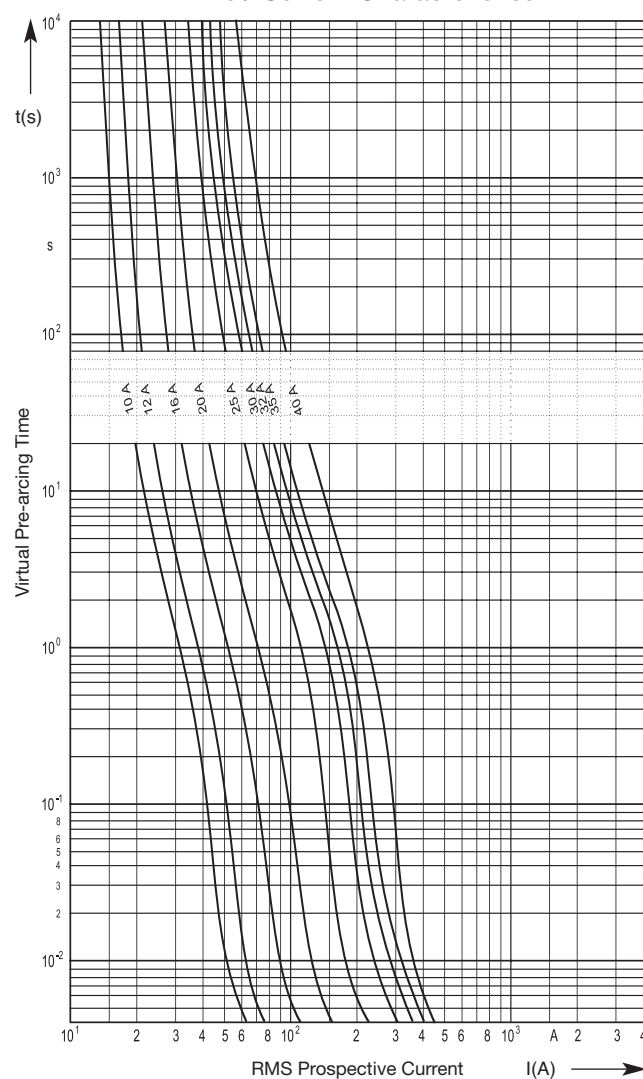
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s
10 A	50 124 34	1.9	8	60
12 A	50 124 34	2.3	12	90
16 A	50 124 34	2.8	25	190
20 A	50 124 34	3.0	46	340
25 A	50 124 34	3.2	100	740
30 A	50 124 34	3.8	190	1,400
32 A	50 124 34	4.0	250	1,900
35 A	50 124 34	4.2	370	2,800
40 A	50 124 34	4.4	420	3,100

Cut-off-characteristics



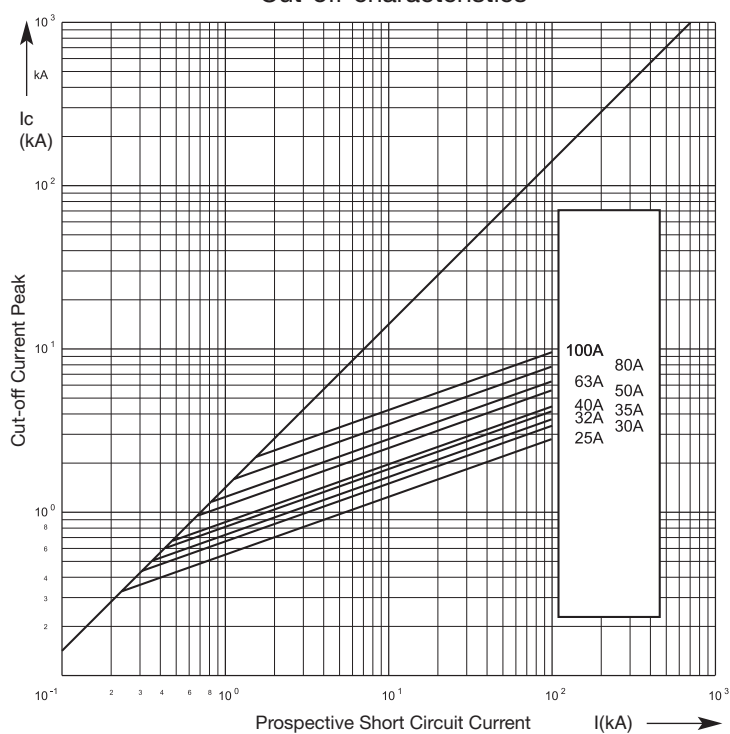
Time / Current Characteristics



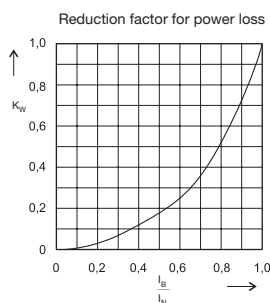
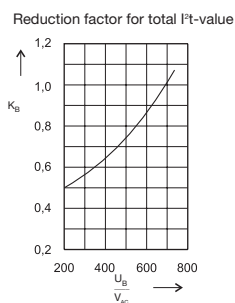
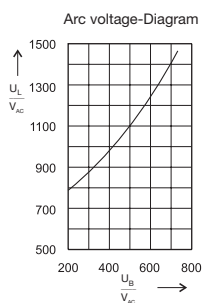
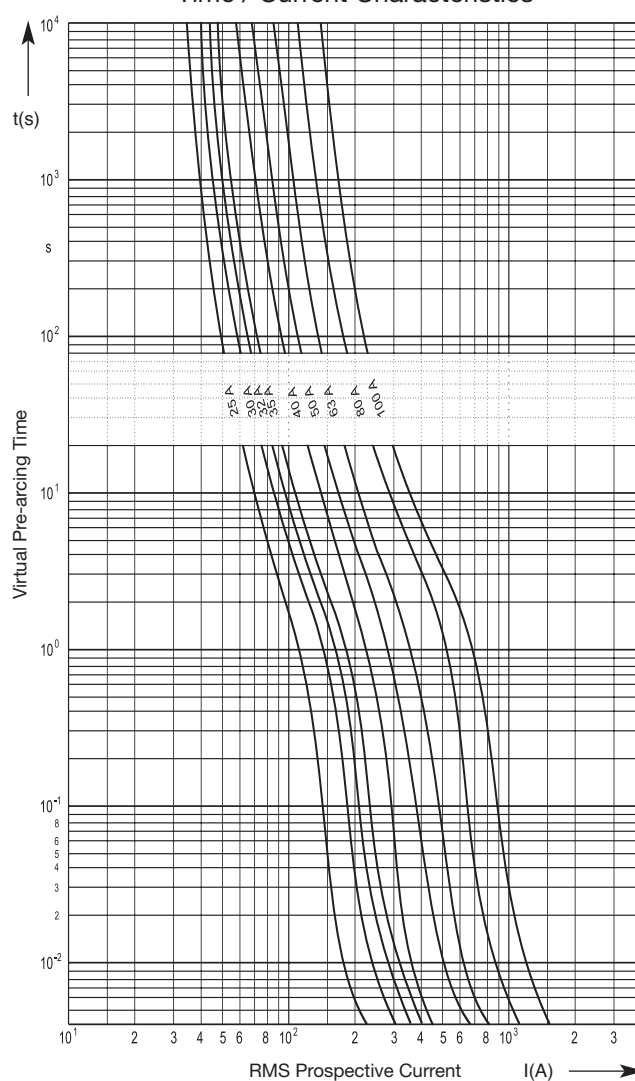
Size
22 x 58 mm
Rated voltage
AC 690 V
Operating class
gRL
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s	
25 A	50 140 34	3.6	100	800	
30 A	50 140 34	4.6	190	1,500	
32 A	50 140 34	4.8	250	2,000	
35 A	50 140 34	5.0	370	3,000	
40 A	50 140 34	5.2	420	3,400	
50 A	50 140 34	5.4	870	7,000	
63 A	50 140 34	6.8	1,300	10,500	
80 A	50 140 34	7.5	2,500	20,000	
100 A	50 140 34	7.7	4,600	37,000	

Cut-off-characteristics



Time / Current Characteristics



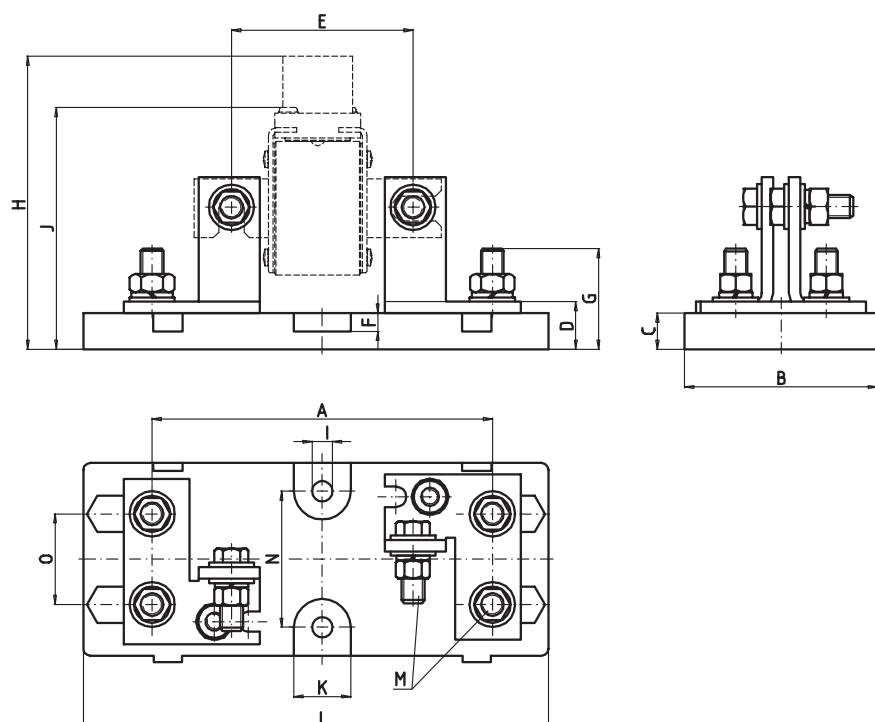
Fuse Base
 for Fuses with screwcontacts

 Size
1, 2 and 3

 Rated current
630 A

 Standard
DIN 43653

Rated Voltage AC	Part No.	Fixing Center	Dimensions	max. Nut Torque	Rated Power Acceptance
900 V	21 313 01	80 mm	150 mm	48 Nm	60 W
1400 V	21 323 01	110 mm	180 mm	48 Nm	60 W


Fixing Center
 80 mm

A	5.90" (150 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	3.15" (80 mm)
F	0.30" (8 mm)
G	1.80" (46 mm)
H _(Size 1)	5.00" (127 mm)
H _(Size 2)	5.12" (130 mm)
H _(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
J _(Size 1)	4.10" (104 mm)
J _(Size 2)	4.25" (108 mm)
J _(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L _(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)

Fixing Center
 110 mm

A	7.10" (180 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	4.33" (110 mm)
F	0.30" (8 mm)
G	1.80" (46 mm)
H _(Size 1)	5.00" (127 mm)
H _(Size 2)	5.12" (130 mm)
H _(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
J _(Size 1)	4.10" (104 mm)
J _(Size 2)	4.25" (108 mm)
J _(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L _(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)

Fuse Base
for Fuses with screwcontacts

Size
1, 2 and 3

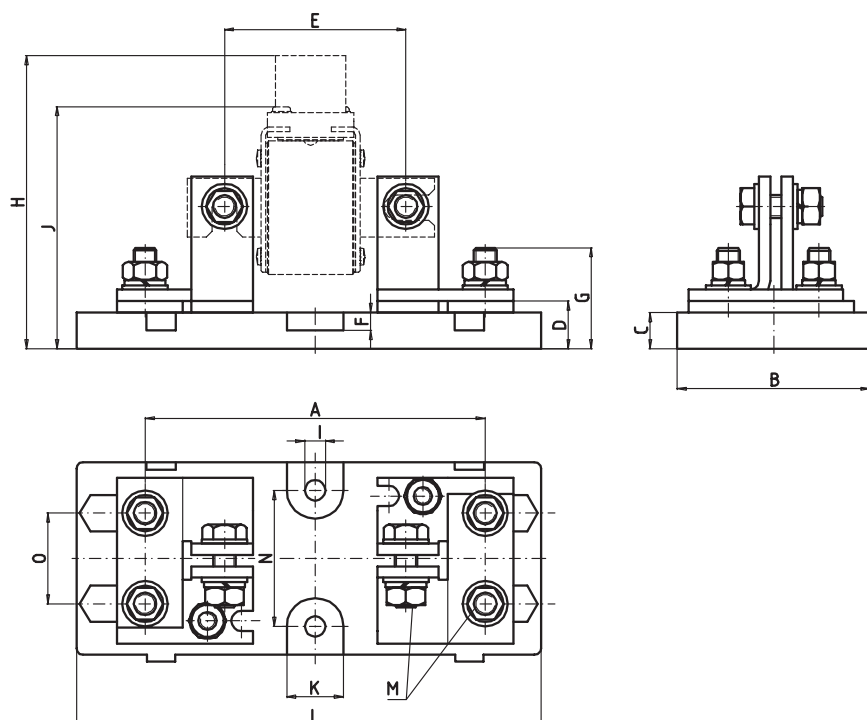
Rated current
1250 A

Standard
DIN 43653

Rated Voltage AC	Part No.	Fixing Center	Dimensions	max. Nut Torque	Rated Power Acceptance
900 V	21 313 02	80 mm	150 mm	48 Nm	110 W
1400 V	21 323 02	110 mm	180 mm	48 Nm	110 W

Fixing Center
110 mm

A	7.10" (180 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	4.33" (110 mm)
F	0.30" (8 mm)
G	1.81" (46 mm)
H_(Size 1)	5.00" (127 mm)
H_(Size 2)	5.12" (130 mm)
H_(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
J_(Size 1)	4.10" (104 mm)
J_(Size 2)	4.25" (108 mm)
J_(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L_(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)


Fixing Center
80 mm

A	5.90" (150 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	3.15" (80 mm)
F	0.30" (8 mm)
G	1.81" (46 mm)
H_(Size 1)	5.00" (127 mm)
H_(Size 2)	5.12" (130 mm)
H_(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
J_(Size 1)	4.10" (104 mm)
J_(Size 2)	4.25" (108 mm)
J_(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L_(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)

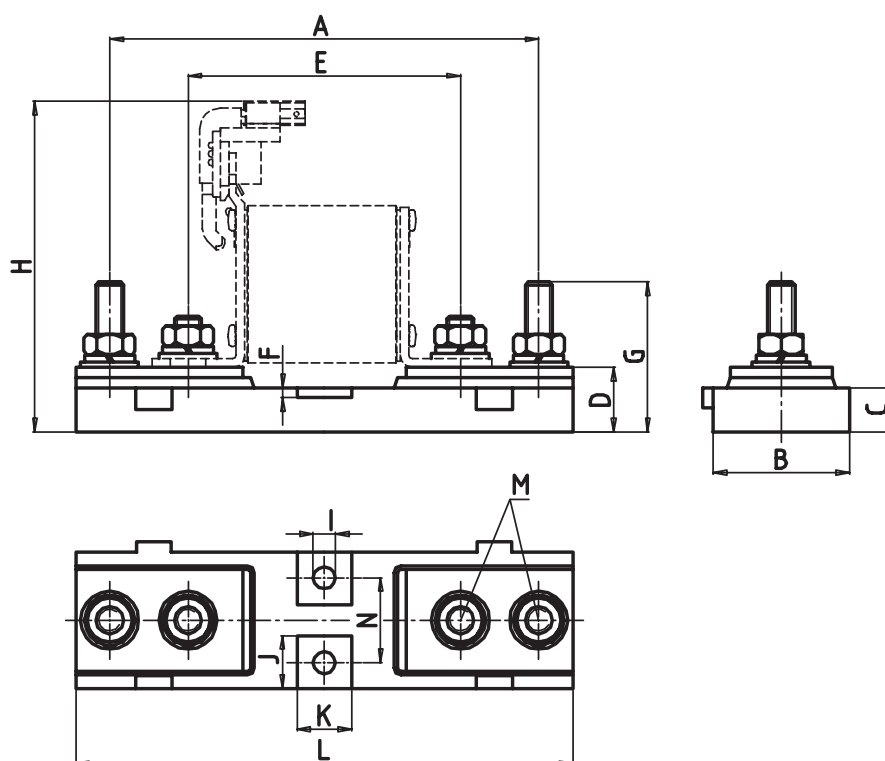
Fuse Base
for Fuses with screwcontacts

Size
000 and 00

Rated current
400 A

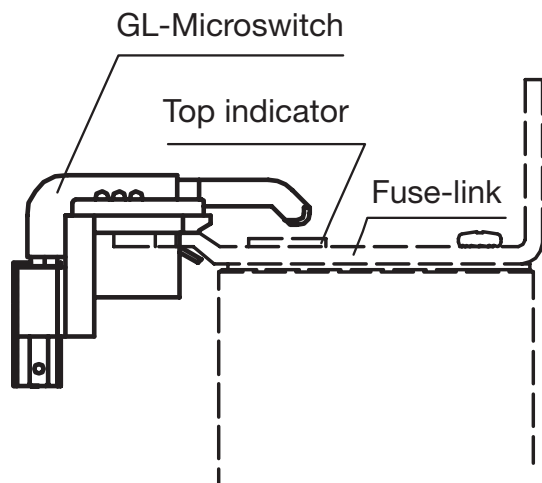
Standard
DIN 43653

Rated Voltage AC	Part No.	Rated Power Acceptance	Nut Torque
1000 V	21 189 01	34 W	20 Nm



600 V

A	4.96" (126 mm)
B	1.57" (40 mm)
C	0.50" (13 mm)
D	0.75" (19 mm)
E	3.15" (80 mm)
F	0.12" (3 mm)
G	1.73" (44 mm)
H	3.82" (97 mm)
I	0.26" (6.5 mm)
J	0.60" (15.5 mm)
K	0.63" (16 mm)
L_(max)	5.75" (146 mm)
M	M 8
N	0.98" (25 mm)

GL-Microswitch Rated Current
5 A
**for Fuses with Topindicator
 and fitting for microswitch**

Part No. 28 002 05
Rated voltage

AC 250 V

Breaking capacity

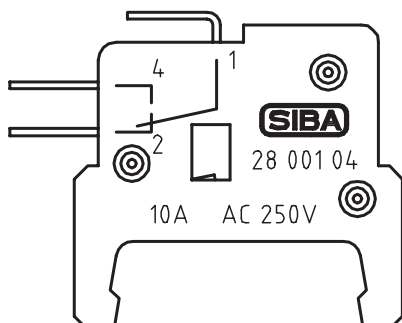
non inductive Load	inductive Load
5 A	5 A

Rated voltage

DC 60 V	500 mA	200 mA
DC 24 V	2 A	2 A

Breaking capacity

non inductive Load	inductive Load (L/R = 25 ms)
500 mA	200 mA
2 A	2 A

M-Microswitch Rated Current
10 A
**for Fuses with adapter
 for microswitch fitting**

Part No. 28 001 04
Rated voltage

AC 250 V

Breaking capacity

non inductive Load	inductive Load
10 A	10 A

Rated voltage

DC 250 V	200 mA	100 mA
DC 60 V	1 A	500 mA
DC 24 V	6 A	3 A

Breaking capacity

non inductive Load	inductive Load (L/R = 25 ms)
200 mA	100 mA
1 A	500 mA
6 A	3 A

Fuse Base
for Fuses with knife contacts

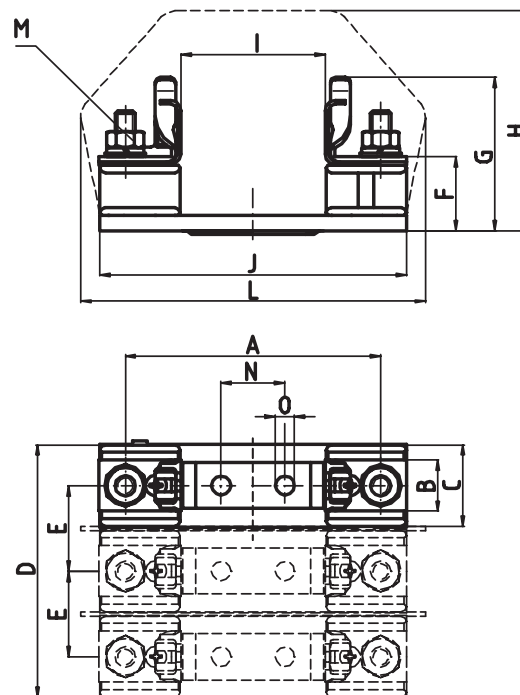
Size
00

Rated voltage
AC 500/690 V

Standard
DIN 43620

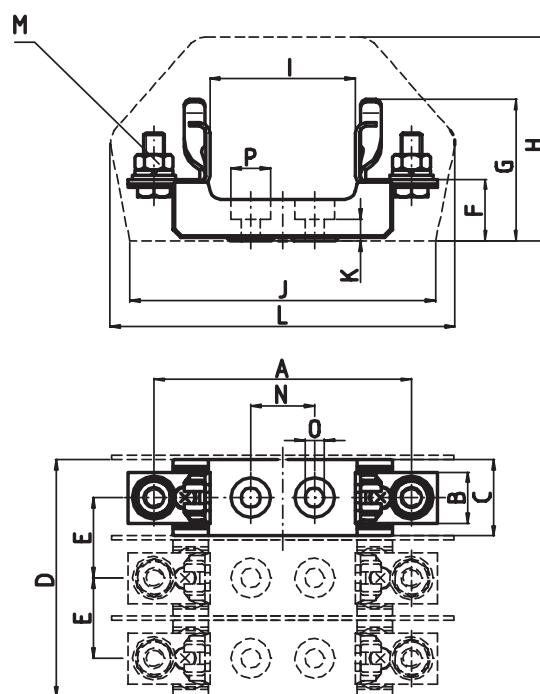
Part No.
21 001 01

A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
D	3.90" (99 mm)
E	1.32" (33.5 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
H	3.40" (86 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)



Part No.
21 001 10

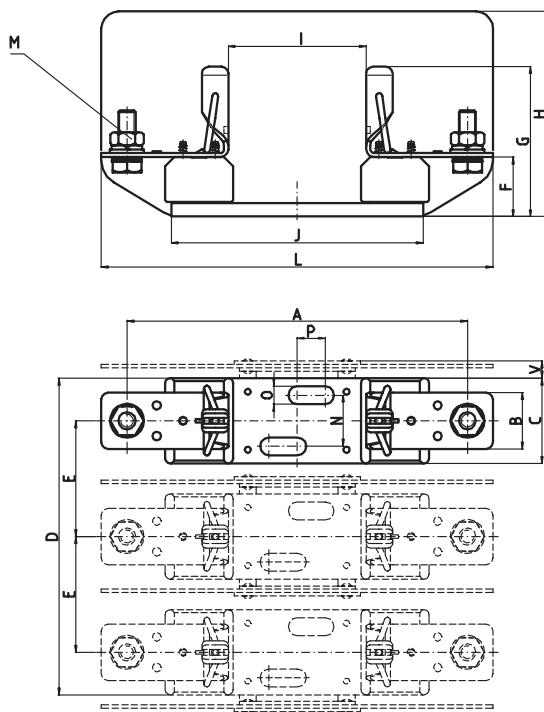
A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.18" (30 mm)
D	3.66" (93 mm)
E	1.24" (31.5 mm)
F	0.94" (24 mm)
G	2.20" (56 mm)
H	3.15" (80 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
K	0.34" (8.7 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)
P	0.60" (15.5 mm)



Fuse Base
for Fuses with knife contacts

Size
1 - 3

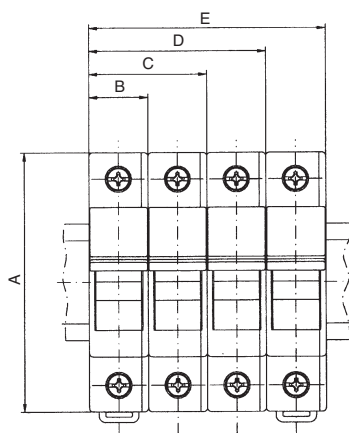
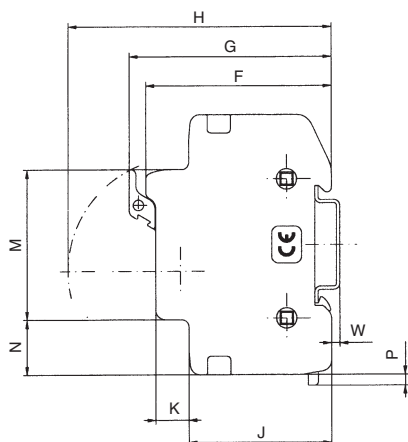
Rated voltage
AC 500/690 V

Standard
DIN 43620


Size 1 Power acceptance 32 W Part No. 21 003 01		Size 2 Power acceptance 45 W Part No. 21 004 01		Size 3 Power acceptance 60 W Part No. 21 005 01	
A	6.90" (175 mm)	A	7.87" (200 mm)	A	8.27" (210 mm)
B	1.30" (33 mm)	B	1.30" (33 mm)	B	1.30" (33 mm)
C	1.97" (50 mm)	C	1.97" (50 mm)	C	2.17" (55 mm)
D	7.00" (178 mm)	D	7.32" (186 mm)	D	8.86" (225 mm)
E	2.52" (64 mm)	E	2.68" (68 mm)	E	3.35" (85 mm)
F	1.38" (35 mm)	F	1.38" (35 mm)	F	1.38" (35 mm)
G	3.30" (84 mm)	G	3.58" (91 mm)	G	3.78" (96 mm)
H	4.20" (107 mm)	H	4.72" (120 mm)	H	5.00" (127 mm)
I	3.15" (80 mm)	I	3.15" (80 mm)	I	3.15" (80 mm)
J	5.83" (148 mm)	J	5.83" (148 mm)	J	5.83" (148 mm)
L	7.78" (200 mm)	L	9.06" (230 mm)	L	9.84" (250 mm)
M	M 10	M	M 10	M	M 10
N	1.18" (30 mm)	N	1.18" (30 mm)	N	1.18" (30 mm)
O	0.40" (10 mm)	O	0.40" (10 mm)	O	0.40" (10 mm)
P	0.65" (16.5 mm)	P	0.65" (16.5 mm)	P	0.65" (16.5 mm)
V	0.40" (10 mm)	V	0.40" (10 mm)	V	0.40" (10 mm)

ZS-Module

for Fuses with cylindrical contact caps



Size 10 x 38

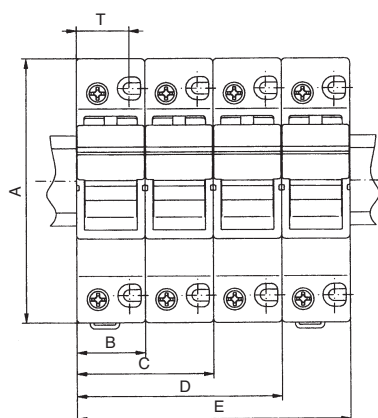
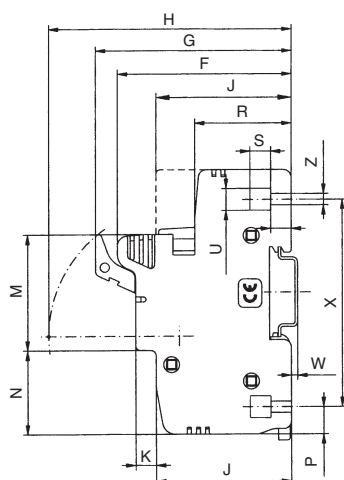
Part No.	51 063 04	51 063 04.L	1 pol.
	51 063 04.2	51 063 04.2L	2 pol.
	51 063 04.3	51 063 04.3L	3 pol.



L= Diode indicator

Power acceptance: **4 W**

A	3.07" (78 mm)	H	3.13" (79.5 mm)
B	0.70" (17.8 mm)	J	1.70" (43 mm)
C	1.40" (35.6 mm)	K	0.40" (10 mm)
D	2.10" (53.4 mm)	M	1.77" (45 mm)
E	2.80" (71.2 mm)	N	0.65" (16.5 mm)
F	2.20" (56 mm)	P	0.13" (3.2 mm)
G	2.40" (61 mm)	W	0.10" (2.5 mm)



Size 14 x 51

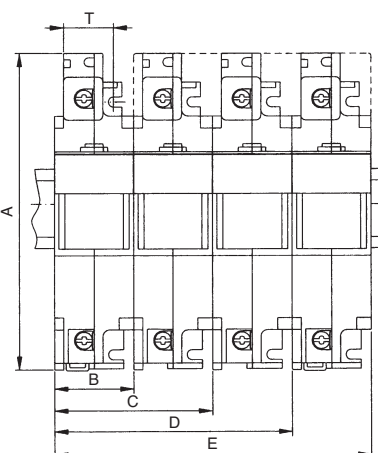
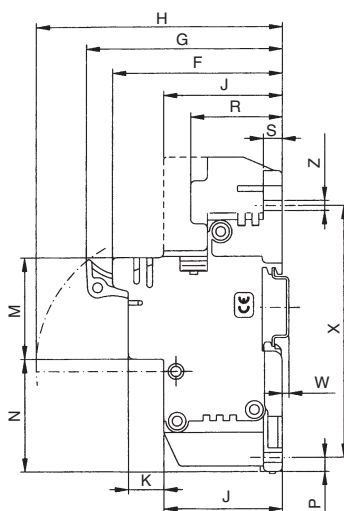
Part No.	51 058 04	51 058 04.S	1 pol.
	51 058 04.2		2 pol.
	51 058 04.3	51 058 04.3S	3 pol.



S= Microswitch

Power acceptance: **6 W**

A	4.04" (102.5 mm)	M	1.77" (45 mm)
B	1.04" (26.5 mm)	N	1.28" (32.5 mm)
C	2.10" (53 mm)	P	0.40" (10.5 mm)
D	3.13" (79.5 mm)	R	1.48" (37.5 mm)
E	4.17" (106 mm)	S	0.30" (8 mm)
F	2.66" (67.5 mm)	T	0.80" (20.5 mm)
G	3.00" (76 mm)	U Ø	0.33" (8.5 mm)
H	3.70" (94.2 mm)	W	0.10" (2.5 mm)
J	2.07" (52.5 mm)	X	3.17" (80.5 mm)
K	0.30" (8 mm)	Z Ø	0.17" (4.4 mm)



Size 22 x 58

Part No.	51 060 04	51 063 04.S	1 pol.
	51 060 04.2		2 pol.
	51 060 04.3	51 063 04.3S	3 pol.



S= Microswitch

Power acceptance: **12 W**

A	5.50" (140 mm)	M	1.77" (45 mm)
B	1.40" (35.6 mm)	N	2.00" (50.5 mm)
C	2.80" (71.2 mm)	P	0.30" (7.5 mm)
D	4.20" (106.8 mm)	R	1.57" (40 mm)
E	5.60" (142.4 mm)	S	0.30" (8 mm)
F	2.97" (75.5 mm)	T	1.06" (27 mm)
G	3.44" (87.5 mm)	W	0.10" (2.5 mm)
H	4.35" (110.5 mm)	X	4.30" (109.5 mm)
J	2.10" (53 mm)	Z Ø	0.17" (4.4 mm)
K	0.63" (16 mm)		

FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD



SIBA ultra-rapid knife blade contact fuses type NH are available in many different sizes and four voltage ratings. They follow DIN/VDE - IEC standard and can be fitted in open fuse bases. Usage in fuse bases or switches requires the comparison of the power loss of the fuse with the power acceptance of the base or switch.

All SIBA type NH-fuses are available with either integral blown fuse indicator or a separately fitted trip indicator fuse for microswitch operation.

Class: aR/gR

Sizes: 000 / 00 / 0 / 1 / 2 and 3

Voltage ratings: AC 500 V - 2000 V

Current ratings: 16 A up to 800 A

Features / Benefits

- ▶ High interrupting rating up to 120 kA
- ▶ Voltage rating AC 500 V - AC 2000 V
- ▶ Compliance with DIN 43620 and DIN 43653 standard
- ▶ Fuses with blown fuse combination indicator
- ▶ Class aR according to IEC 60269-4 and DIN VDE 0636-40 and Class gR according to DIN VDE 0636-40
- ▶ Fuse bases / Switches and Accessories are available



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Selection Guide

Size	Rated Voltage AC	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
000	500 V	combi indicator	20 000 04	URM 4	URM 23
00	500 V	combi indicator	20 001 04	URM 5	URM 23
0	500 V	combi indicator	20 002 04	URM 6	URM 24
1	500 V	combi indicator	20 003 04	URM 7	URM 25
2	500 V	combi indicator	20 004 04	URM 8	URM 26
3	500 V	combi indicator	20 005 04	URM 9	URM 27
000	690 V	combi indicator	20 477 20	URM 10	URM 28
00	690 V	combi indicator	20 209 20	URM 11	URM 28
1	690 V	combi indicator	20 211 20	URM 12	URM 29
2	690 V	combi indicator	20 212 20	URM 13	URM 30
3	690 V	combi indicator	20 213 20	URM 14	URM 31
00	500 V	signal indicator	20 007 04	URM 15	URM 23
1	500 V	signal indicator	20 009 04	URM 16	URM 25
2	500 V	signal indicator	20 010 04	URM 17	URM 26
3	500 V	signal indicator	20 011 04	URM 18	URM 27
0	1000 V	combi indicator	20 384 04	URM 19	URM 32
3	660 V	combi indicator	20 373 04	URM 20	URM 33
3	1000 V	topindicator	20 407 04	URM 21	URM 34
3	2000 V	topindicator	20 404 04	URM 22	URM 35



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Fuse base

Size	Rated Voltage AC	with external microswitch	Part No.	Techn. Data Page		
00	500/690 V	–	21 001 01	URM 36		
00	500/690 V	–	21 001 10	URM 36		
1	500/690 V	–	21 003 01	URM 37		
2	500/690 V	–	21 004 01	URM 37		
3	500/690 V	–	21 005 01	URM 37		
00	500 V	yes	21 007 01	URM 38		
1	500 V	yes	21 009 01	URM 38		
2	500 V	yes	21 010 01	URM 38		
3	500 V	yes	21 011 01	URM 38		
0	1000 V		21 384 01	URM 39		



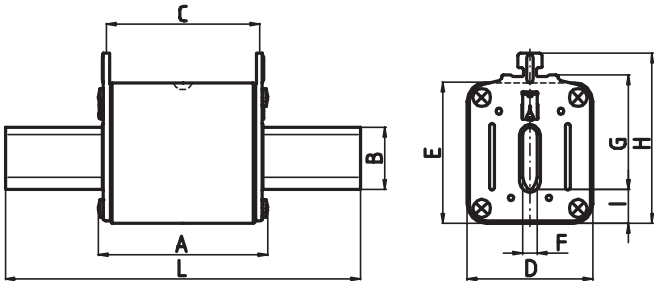
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage		Standard
000	AC 500 V	combi indicator	DIN 43620

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
6 A	20 000 04		gR	11.0	3	
10 A	20 000 04		gR	11.0	3	
16 A	20 000 04		gR	11.0	3	
20 A	20 000 04		gR	11.0	3	
25 A	20 000 04		gR	11.0	3	
32 A	20 000 04		gR	11.0	3	
40 A	20 000 04		gR	11.0	3	
50 A	20 000 04		gR	11.0	3	
63 A	20 000 04		gR	11.0	3	
80 A	20 000 04		gR	11.0	3	

A _{max}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

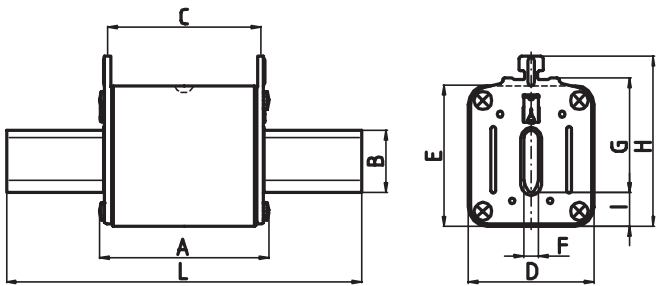




FUSES FOR SEMICONDUCTOR PROTECTION
KNIFE BLADE CONTACT – GERMAN STANDARD

Size 00	Rated voltage AC 500 V	combi indicator		Standard DIN 43620
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
100 A	20 001 04		gR	15.4	3	
125 A	20 001 04		aR	15.4	3	
160 A	20 001 04		aR	15.4	3	



A_{max}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size
0

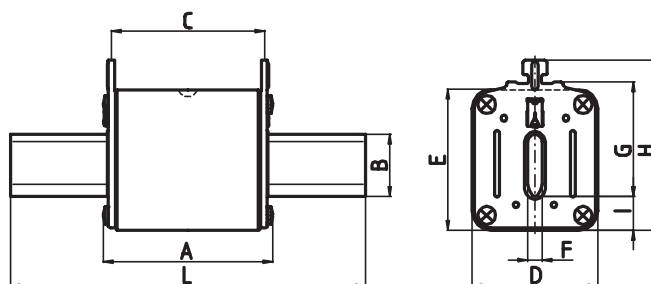
Rated voltage
AC 500 V

combi indicator

Standard
DIN 43620

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack
16 A	20 002 04		gR	24	3
20 A	20 002 04		gR	24	3
25 A	20 002 04		gR	24	3
32 A	20 002 04		gR	24	3
40 A	20 002 04		gR	24	3
50 A	20 002 04		gR	24	3
63 A	20 002 04		gR	24	3
80 A	20 002 04		gR	24	3
100 A	20 002 04		gR	24	3
125 A	20 002 04		aR	24	3
160 A	20 002 04		aR	24	3

A_{max}	2.80" (71.5 mm)
B	0.60" (15 mm)
C	2.56" (65 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	4.92" (125 mm)



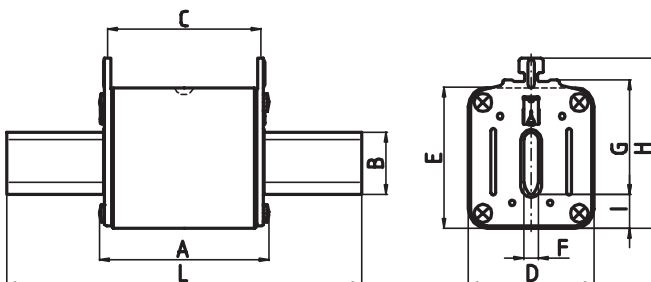


FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size 1	Rated voltage AC 500 V	combi indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
63 A	20 003 04		gR	27	3	
80 A	20 003 04		gR	27	3	
100 A	20 003 04		gR	27	3	
125 A	20 003 04		aR	27	3	
160 A	20 003 04		aR	27	3	
200 A	20 003 04		aR	37	3	
250 A	20 003 04		aR	37	3	
315 A	20 003 04		aR	37	3	



	20 003 04 ≤ 160 A	20 003 04 ≥ 200 A
A _{max}	2.95" (75 mm)	2.95" (75 mm)
B	0.80" (20 mm)	0.80" (20 mm)
C	2.56" (65 mm)	2.56" (65 mm)
D	1.16" (29.5 mm)	1.65" (42 mm)
E	1.80" (46 mm)	2.03" (51.5 mm)
F	0.24" (6 mm)	0.24" (6 mm)
G	1.57" (40 mm)	1.57" (40 mm)
H	2.28" (58 mm)	2.52" (64 mm)
I	0.30" (8 mm)	0.55" (14 mm)
L	5.30" (135 mm)	5.30" (135 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size
2

Rated voltage
AC 500 V

combi indicator

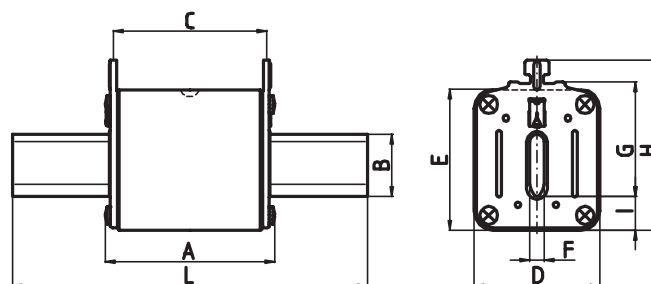
Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack
32 A	20 004 04		gR	37	3
40 A	20 004 04		gR	37	3
50 A	20 004 04		gR	37	3
63 A	20 004 04		gR	37	3
80 A	20 004 04		gR	37	3
100 A	20 004 04		gR	37	3
125 A	20 004 04		aR	37	3
160 A	20 004 04		aR	37	3
200 A	20 004 04		aR	37	3
250 A	20 004 04		aR	37	3
315 A	20 004 04		aR	65	3
355 A	20 004 04		aR	65	3
400 A	20 004 04		aR	65	3

20 004 04
≤ 250 A

20 004 04
≥ 315 A

A_{max}	2.95" (75 mm)	A_{max}	2.95" (75 mm)
B	0.80" (20 mm)	B	1.02" (26 mm)
C	2.56" (65 mm)	C	2.56" (65 mm)
D	1.65" (42 mm)	D	2.10" (53 mm)
E	2.03" (51.5 mm)	E	2.32" (59 mm)
F	0.24" (6 mm)	F	0.24" (6 mm)
G	1.90" (48 mm)	G	1.90" (48 mm)
H	2.83" (72 mm)	H	2.83" (72 mm)
I	0.55" (14 mm)	I	0.55" (14 mm)
L	5.90" (150 mm)	L	5.90" (150 mm)



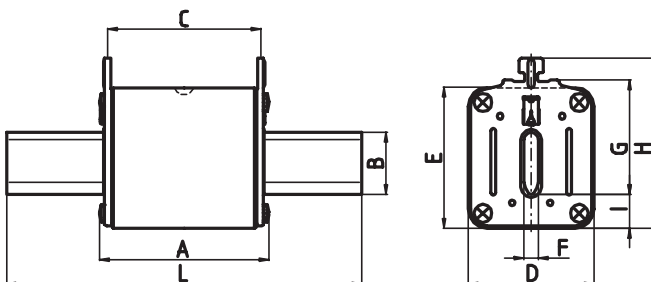


FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size 3	Rated voltage AC 500 V	combi indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
160 A	20 005 04		aR	65	3	
200 A	20 005 04		aR	65	3	
224 A	20 005 04		aR	65	3	
250 A	20 005 04		aR	65	3	
315 A	20 005 04		aR	65	3	
400 A	20 005 04		aR	65	3	
500 A	20 005 04		aR	88	3	
630 A	20 005 04		aR	88	3	



	20 005 04 ≤ 400 A	20 005 04 ≥ 425 A
A _{max}	2.95" (75 mm)	2.95" (75 mm)
B	1.02" (26 mm)	1.26" (32 mm)
C	2.56" (65 mm)	2.56" (65 mm)
D	2.10" (53 mm)	2.56" (65 mm)
E	2.32" (59 mm)	2.90" (73.5 mm)
F	0.24" (6 mm)	0.24" (6 mm)
G	2.36" (60 mm)	2.36" (60 mm)
H	3.27" (83 mm)	3.40" (86 mm)
I	0.55" (14 mm)	0.67" (17 mm)
L	5.90" (150 mm)	5.90" (150 mm)



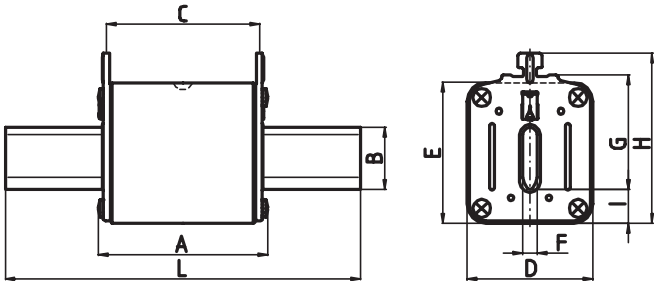
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage				Standard
000	AC 690 V		combi indicator		DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
10 A	20 477 20		gR	11	3	
16 A	20 477 20		gR	11	3	
20 A	20 477 20		gR	11	3	
25 A	20 477 20		gR	11	3	
32 A	20 477 20		gR	11	3	
40 A	20 477 20		gR	11	3	
50 A	20 477 20		gR	11	3	

A _{max}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

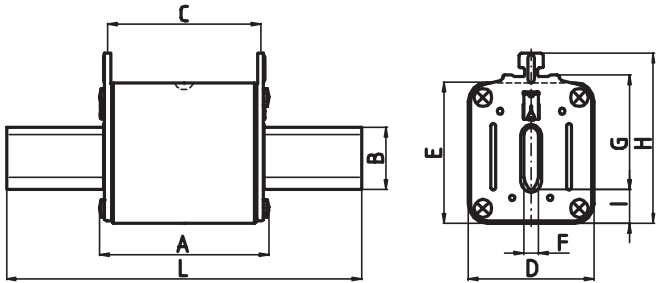




FUSES FOR SEMICONDUCTOR PROTECTION
KNIFE BLADE CONTACT – GERMAN STANDARD

Size 00	Rated voltage AC 690 V	combi indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack
63 A	20 209 20		gR	15.4	3
80 A	20 209 20		gR	15.4	3
100 A	20 209 20		gR	15.4	3
125 A	20 209 20		aR	15.4	3
160 A	20 209 20		aR	15.4	3



A_{max}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)



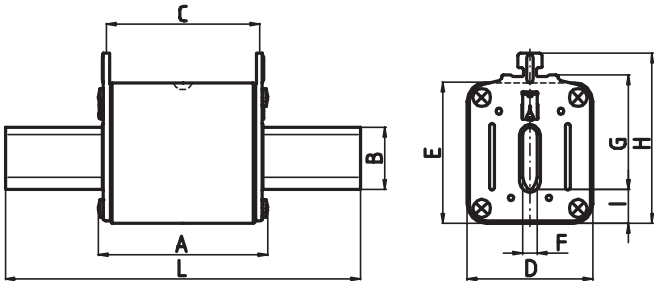
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage		Standard
1	AC 690 V	combi indicator	DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
16 A	20 211 20		gR	37	3	
20 A	20 211 20		gR	37	3	
25 A	20 211 20		gR	37	3	
32 A	20 211 20		gR	37	3	
40 A	20 211 20		gR	37	3	
50 A	20 211 20		gR	37	3	
63 A	20 211 20		gR	37	3	
80 A	20 211 20		gR	37	3	
100 A	20 211 20		gR	37	3	
125 A	20 211 20		aR	37	3	
160 A	20 211 20		aR	37	3	
200 A	20 211 20		aR	37	3	
250 A	20 211 20		aR	37	3	
315 A	20 211 20		aR	37	3	

A _{max}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)



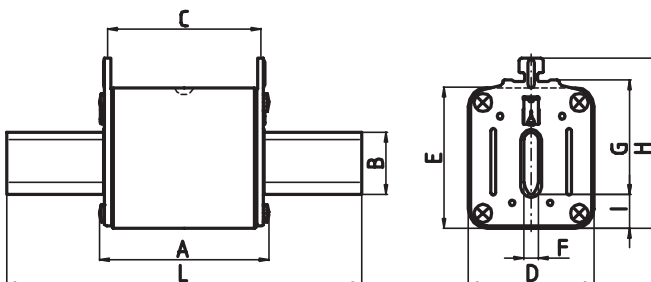


FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size 2	Rated voltage AC 690 V	combi indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack
160 A	20 212 20		aR	37	3
200 A	20 212 20		aR	37	3
250 A	20 212 20		aR	37	3
315 A	20 212 20		aR	65	3
350 A	20 212 20		aR	65	3
400 A	20 212 20		aR	65	3
450 A	20 212 20		aR	65	3



20 212 20 ≤ 250 A	20 212 20 ≥ 315 A
A _{max} 2.95" (75 mm)	A _{max} 2.95" (75 mm)
B 0.80" (20 mm)	B 1.02" (26 mm)
C 2.56" (65 mm)	C 2.56" (65 mm)
D 1.65" (42 mm)	D 2.10" (53 mm)
E 2.03" (51.5 mm)	E 2.32" (59 mm)
F 0.24" (6 mm)	F 0.24" (6 mm)
G 1.90" (48 mm)	G 1.90" (48 mm)
H 2.83" (72 mm)	H 2.83" (72 mm)
I 0.55" (14 mm)	I 0.55" (14 mm)
L 5.90" (150 mm)	L 5.90" (150 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size
3

Rated voltage
AC 690 V

combi indicator

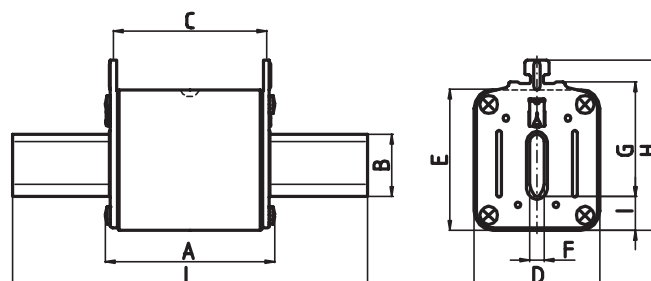
Standard
DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
315 A	20 213 20		aR	65	3	
355 A	20 213 20		aR	65	3	
400 A	20 213 20		aR	65	3	
450 A	20 213 20		aR	88	3	
500 A	20 213 20		aR	88	3	
550 A	20 213 20		aR	88	3	
630 A	20 213 20		aR	88	3	
710 A	20 213 20		aR	88	3	

20 213 20
≤ 400 A

20 213 20
≥ 450 A

A_{max}	2.95" (75 mm)	A_{max}	2.95" (75 mm)
B	1.02" (26 mm)	B	1.26" (32 mm)
C	2.56" (65 mm)	C	2.56" (65 mm)
D	2.10" (53 mm)	D	2.56" (65 mm)
E	2.32" (59 mm)	E	2.90" (73.5 mm)
F	0.24" (6 mm)	F	0.24" (6 mm)
G	2.36" (60 mm)	G	2.36" (60 mm)
H	3.27" (83 mm)	H	3.40" (86 mm)
I	0.55" (14 mm)	I	0.67" (17 mm)
L	5.90" (150 mm)	L	5.90" (150 mm)

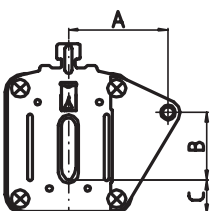




FUSES FOR SEMICONDUCTOR PROTECTION
KNIFE BLADE CONTACT – GERMAN STANDARD

Size 00	Rated voltage AC 500 V	signal indicator	Standard DIN 43620
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
16 A	20 007 04		gR	19	3	
20 A	20 007 04		gR	19	3	
25 A	20 007 04		gR	19	3	
32 A	20 007 04		gR	19	3	
40 A	20 007 04		gR	19	3	
50 A	20 007 04		gR	19	3	
63 A	20 007 04		gR	19	3	
80 A	20 007 04		gR	19	3	
100 A	20 007 04		gR	19	3	
125 A	20 007 04		aR	19	3	
160 A	20 007 04		aR	19	3	



A	0.90" (23 mm)
B	0.67" (17 mm)
C	0.50" (13 mm)



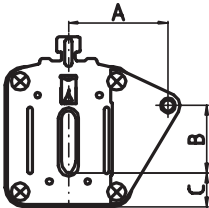
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage		Standard
1	AC 500 V	signal indicator	DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
63 A	20 009 04		gR	40	3	
80 A	20 009 04		gR	40	3	
100 A	20 009 04		gR	40	3	
125 A	20 009 04		aR	40	3	
160 A	20 009 04		aR	40	3	
200 A	20 009 04		aR	40	3	
250 A	20 009 04		aR	40	3	
315 A	20 009 04		aR	40	3	

A	1.20" (30.5 mm)
B	0.94" (24 mm)
C	0.55" (14 mm)

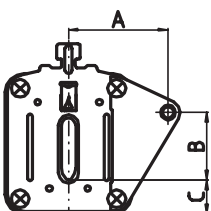




FUSES FOR SEMICONDUCTOR PROTECTION
KNIFE BLADE CONTACT – GERMAN STANDARD

Size 2	Rated voltage AC 500 V	signal indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
32 A	20 010 04	✓	gR	70	3	
40 A	20 010 04	✓	gR	70	3	
50 A	20 010 04	✓	gR	70	3	
63 A	20 010 04	✓	gR	70	3	
80 A	20 010 04	✓	gR	70	3	
100 A	20 010 04	✓	gR	70	3	
125 A	20 010 04	✓	aR	70	3	
160 A	20 010 04	✓	aR	70	3	
200 A	20 010 04	✓	aR	70	3	
250 A	20 010 04	✓	aR	70	3	
355 A	20 010 04	✓	aR	70	3	
315 A	20 010 04	✓	aR	70	3	
400 A	20 010 04	✓	aR	70	3	



A	1.65" (42 mm)
B	1.10" (28 mm)
C	0.55" (14 mm)



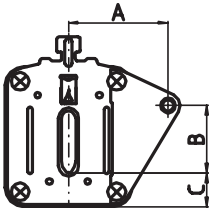
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage				Standard
3	AC 500 V		signal indicator		DIN 43620/1

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
160 A	20 011 04		aR	90	3	
200 A	20 011 04		aR	90	3	
224 A	20 011 04		aR	90	3	
250 A	20 011 04		aR	90	3	
400 A	20 011 04		aR	90	3	
500 A	20 011 04		aR	90	3	
630 A	20 011 04		aR	90	3	

A	1.73" (44 mm)
B	1.52" (38.5 mm)
C	0.67" (17 mm)



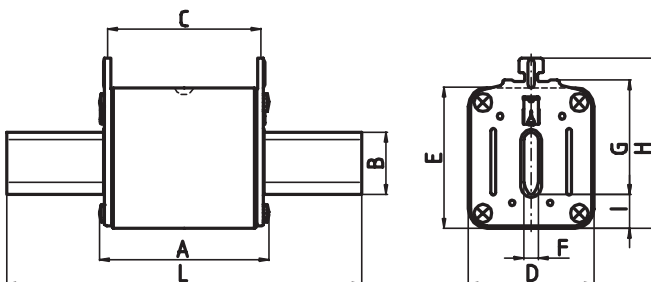


FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size 0	Rated voltage AC 1000 V	combi indicator	Standard DIN 43620/1
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
16 A	20 384 04	✓	gR	24	6	
20 A	20 384 04	✓	gR	24	6	
25 A	20 384 04	✓	gR	24	6	
32 A	20 384 04	✓	gR	24	6	
40 A	20 384 04	✓	gR	24	6	
50 A	20 384 04	✓	gR	24	6	
63 A	20 384 04	✓	aR	24	6	
80 A	20 384 04	✓	aR	24	6	
100 A	20 384 04	✓	aR	24	6	
125 A	20 384 04	✓	aR	24	6	
160 A	20 384 04	✓	aR	24	6	



A_{max}	2.80" (71.5 mm)
B	0.60" (15 mm)
C	2.56" (65 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	4.92" (125 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size

3

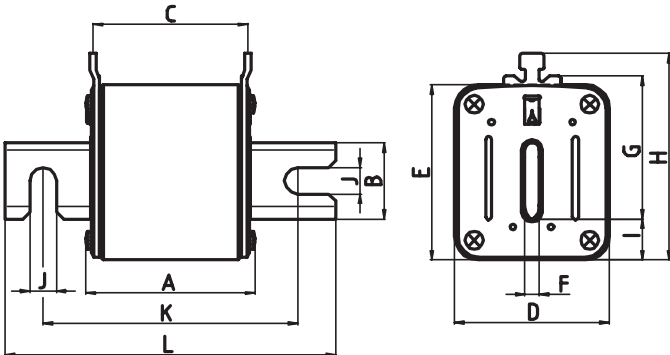
Rated voltage

AC 660 V

combi indicator

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
150 A	20 373 04		gR	83	6	
200 A	20 373 04		gR	83	6	
250 A	20 373 04		gR	83	6	
300 A	20 373 04		gR	83	6	
350 A	20 373 04		gR	83	6	
400 A	20 373 04		gR	83	6	
500 A	20 373 04		gR	83	6	

- A_{max} 2.95" (75 mm)
- B 1.26" (32 mm)
- C 2.56" (65 mm)
- D 2.56" (65 mm)
- E 2.90" (73.5 mm)
- F 0.24" (6 mm)
- G 2.36" (60 mm)
- H 3.40" (86 mm)
- I 0.67" (17 mm)
- J 0.43" (11 mm)
- K 4.20" (107 mm)
- L 5.47" (139 mm)

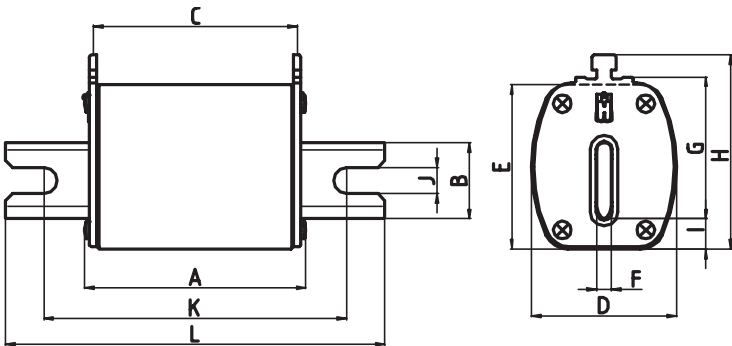




FUSES FOR SEMICONDUCTOR PROTECTION
KNIFE BLADE CONTACT – GERMAN STANDARD

Size 3	Rated voltage AC 1000 V	topindicator
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Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
100 A	20 407 04		aR	110	1	
125 A	20 407 04		aR	110	1	
160 A	20 407 04		aR	110	1	
200 A	20 407 04		aR	110	1	
250 A	20 407 04		aR	110	1	
315 A	20 407 04		aR	110	1	
355 A	20 407 04		aR	110	1	
400 A	20 407 04		aR	110	1	
450 A	20 407 04		aR	110	1	
500 A	20 407 04		aR	110	1	



A _{max}	3.74" (95 mm)
B	1.26" (32 mm)
C	3.35" (85 mm)
D	2.40" (61 mm)
E	2.72" (69 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.20" (81.5 mm)
I	0.50" (13 mm)
J	0.43" (11 mm)
K	5.00" (127 mm)
L	6.30" (160 mm)



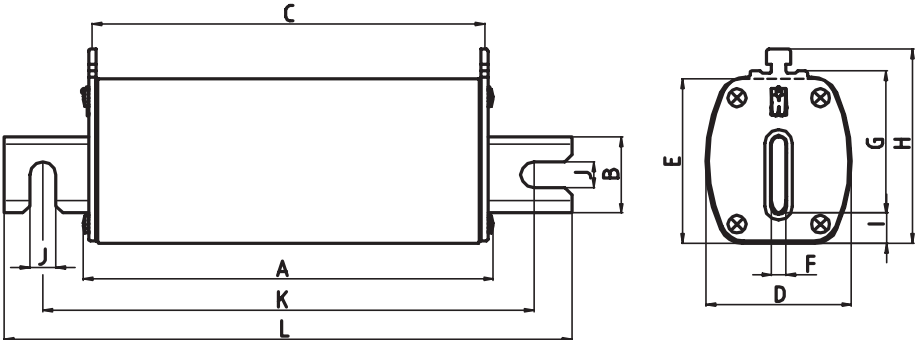
FUSES FOR SEMICONDUCTOR PROTECTION

KNIFE BLADE CONTACT – GERMAN STANDARD

Size	Rated voltage	
3	AC 2000 V	topindicator

Rated current	Part No.	UL Rec.	Class	Weight (kg/100)	Pack	
200 A	20 404 04		aR	170	1	
224 A	20 404 04		aR	170	1	
250 A	20 404 04		aR	170	1	
300 A	20 404 04		aR	170	1	
315 A	20 404 04		aR	170	1	
355 A	20 404 04		aR	170	1	
400 A	20 404 04		aR	170	1	
450 A	20 404 04		aR	170	1	

- A_{max} 7.10" (180 mm)
- B 1.26" (32 mm)
- C 6.50" (165 mm)
- D 2.40" (61 mm)
- E 2.72" (69 mm)
- F 0.24" (6 mm)
- G 2.36" (60 mm)
- H 3.20" (81.5 mm)
- I 0.50" (13 mm)
- J 0.43" (11 mm)
- K 8.20" (208 mm)
- L 9.45" (240 mm)



Size
000/00

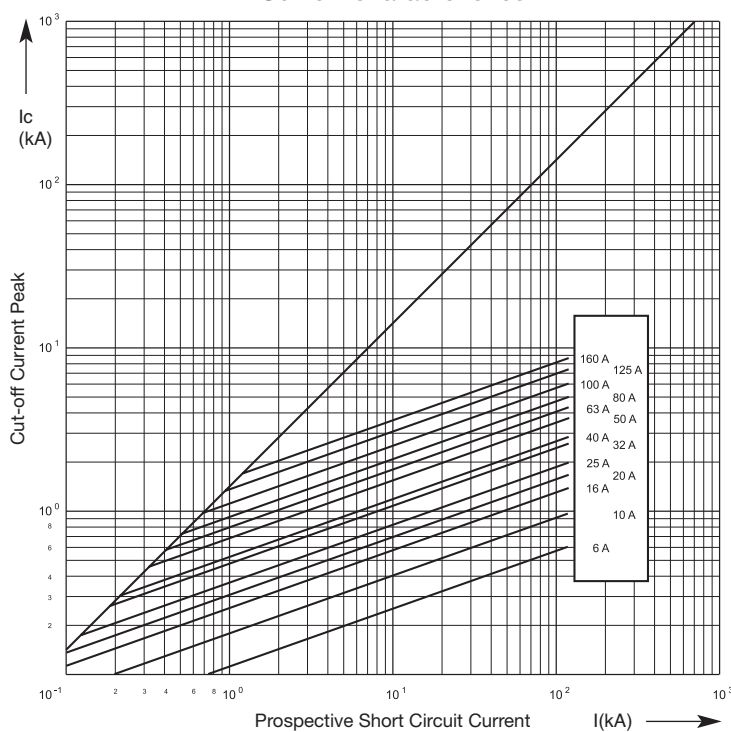
Rated voltage
AC 500 V

Operating class
≤ 100 A gR / > 100 A aR

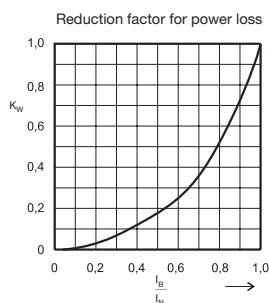
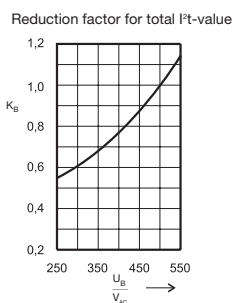
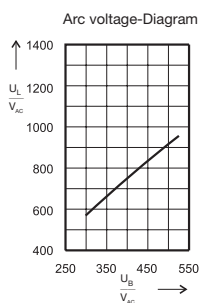
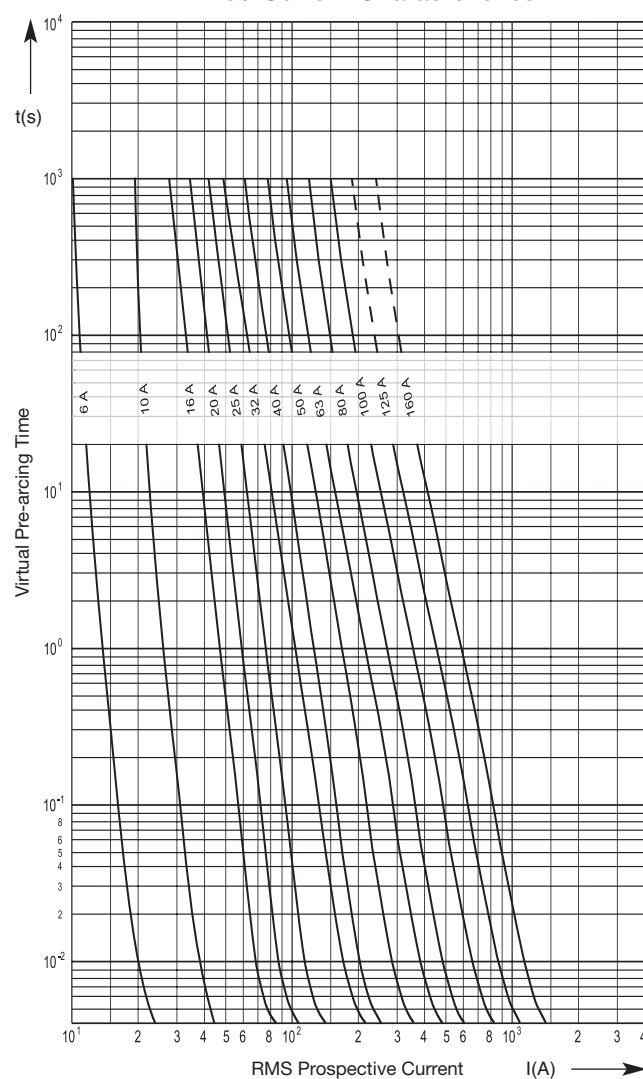
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Part No. with signal indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 500 V A ² t
16 A	20 000 04	20 007 04	4.8	10	140
20 A	20 000 04	20 007 04	5.7	17	185
25 A	20 000 04	20 007 04	6.7	20	305
32 A	20 000 04	20 007 04	8.1	67	460
35 A	20 000 04	20 007 04	9	82	650
40 A	20 000 04	20 007 04	10	90	800
50 A	20 000 04	20 007 04	12	190	1,400
63 A	20 000 04	20 007 04	14	330	2,600
80 A	20 000 04	20 007 04	19	510	4,200
100 A	20 001 04	20 007 04	21	920	7,600
125 A	20 001 04	20 007 04	25	1,660	12,300
160 A	20 001 04	20 007 04	30	2,800	19,500

Cut-off-characteristics



Time / Current Characteristics



Size
0

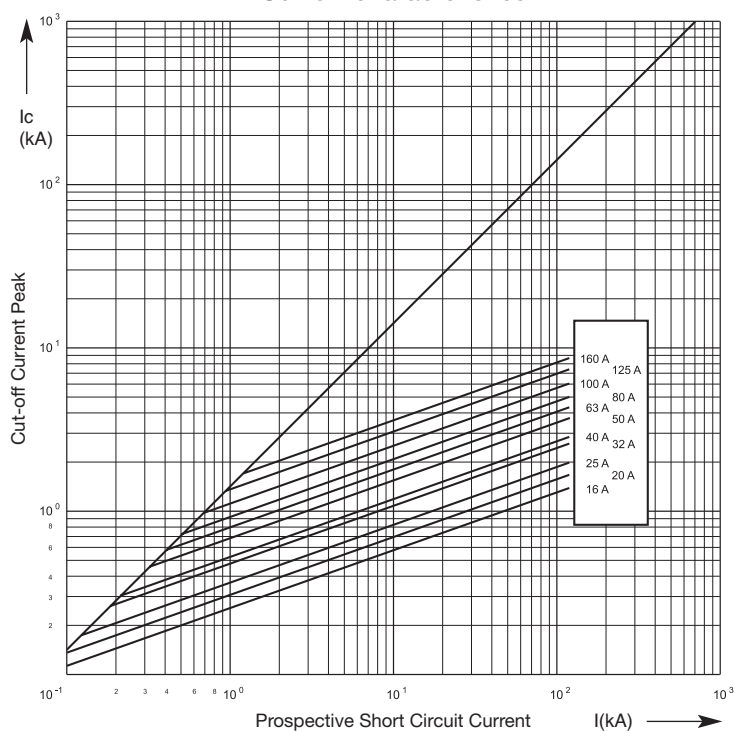
Rated voltage
AC 500 V

Operating class
≤ 100 A gR / > 100 A aR

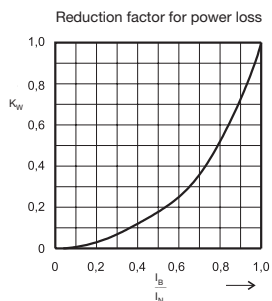
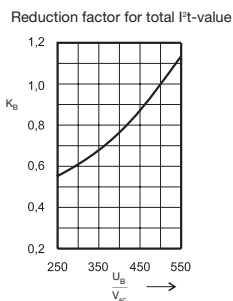
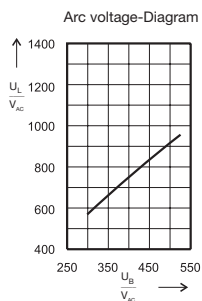
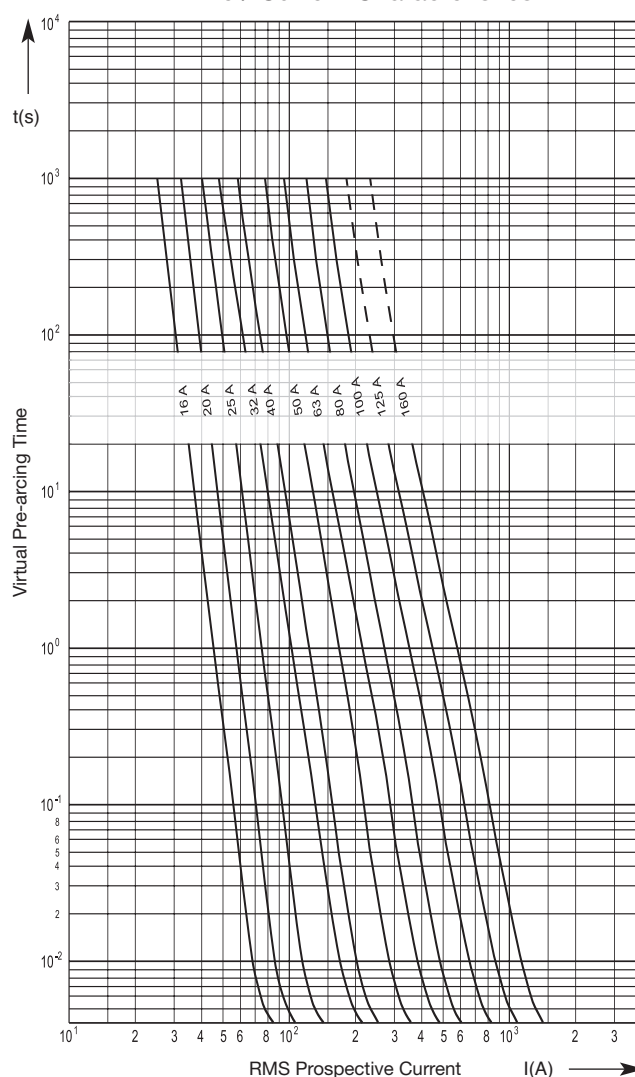
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 500 V A ² t	
16 A	20 002 04	6.1	10	140	
20 A	20 002 04	7.2	17	185	
25 A	20 002 04	8.6	20	305	
32 A	20 002 04	10	67	460	
35 A	20 002 04	11	82	650	
40 A	20 002 04	12	90	800	
50 A	20 002 04	15	190	1,400	
63 A	20 002 04	18	330	2,600	
80 A	20 002 04	21	510	4,200	
100 A	20 002 04	25	920	7,600	
125 A	20 002 04	30	1,660	12,300	
160 A	20 002 04	36	2,800	19,500	

Cut-off-characteristics



Time / Current Characteristics



Size
1

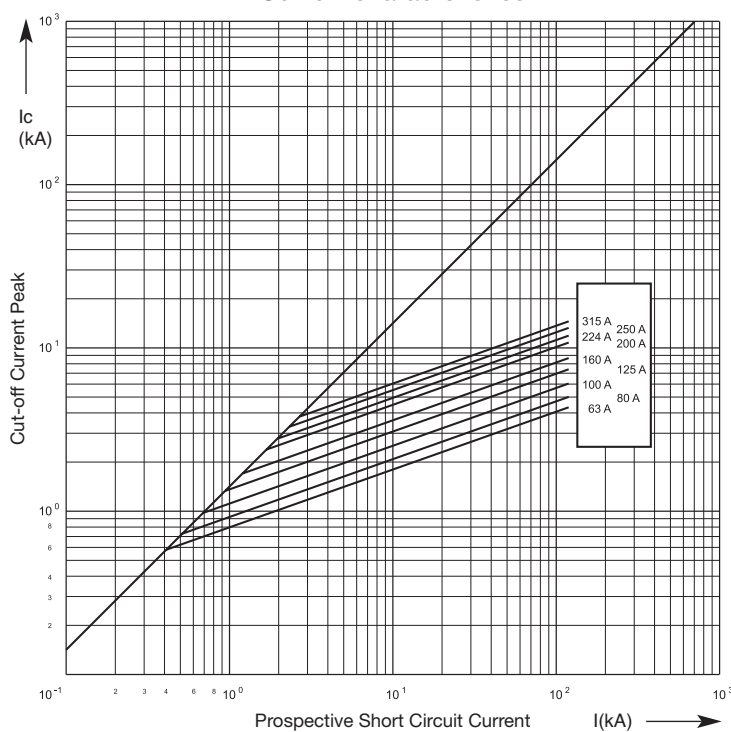
Rated voltage
AC 500 V

Operating class
gR

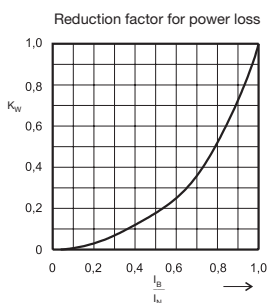
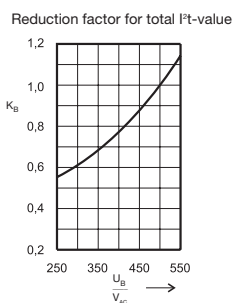
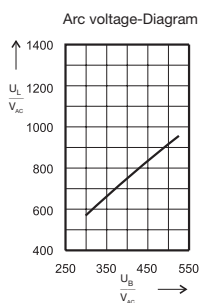
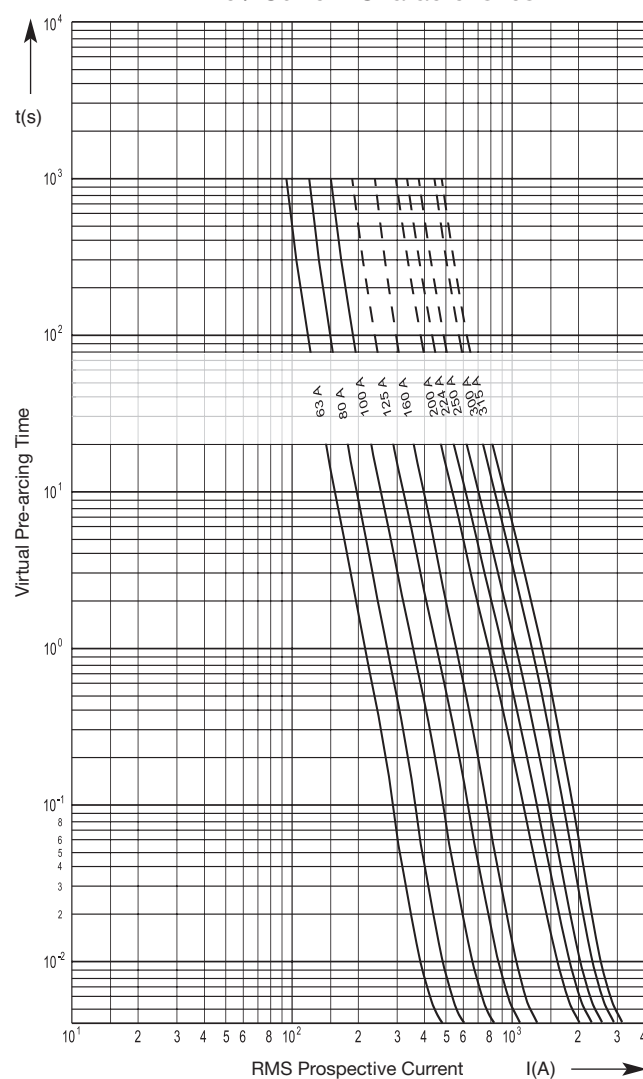
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Part No. with signal indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 500 V A ² t
63 A	20 003 04	20 009 04	18	330	2,600
80 A	20 003 04	20 009 04	22	510	4,200
100 A	20 003 04	20 009 04	27	920	7,600
125 A	20 003 04	20 009 04	33	4,100	12,300
160 A	20 003 04	20 009 04	40	1,660	19,500
200 A	20 003 04	20 009 04	40	2,400	37,000
224 A	20 003 04	20 009 04	53	5,800	42,000
250 A	20 003 04	20 009 04	62	9,600	55,000
315 A	20 003 04	20 009 04	79	14,000	90,000

Cut-off-characteristics



Time / Current Characteristics



Size
2

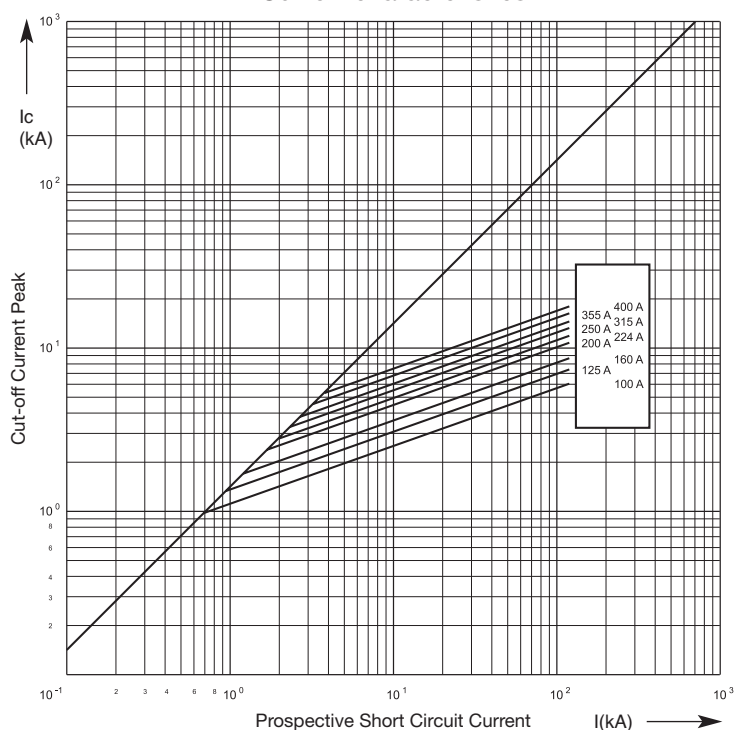
Rated voltage
AC 500 V

Operating class
≤ 100 A gR / > 100 A aR

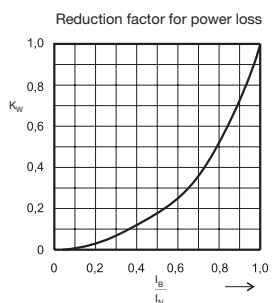
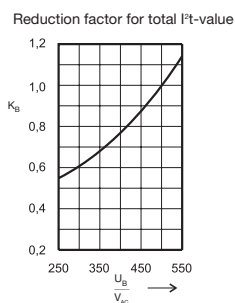
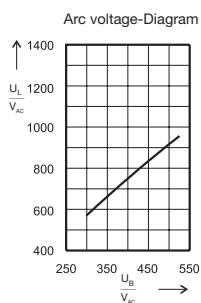
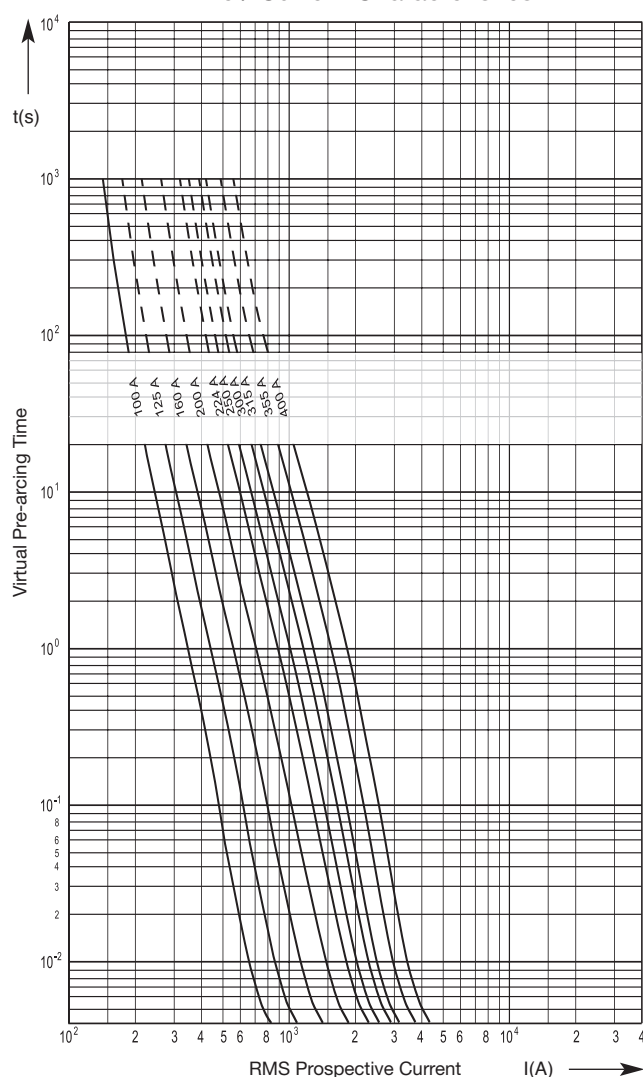
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Part No. with signal indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 500 V A ² t
100 A	20 004 04	20 010 04	23	920	7,600
125 A	20 004 04	20 010 04	29	1,660	12,300
160 A	20 004 04	20 010 04	40	2,400	19,500
200 A	20 004 04	20 010 04	40	5,800	37,000
224 A	20 004 04	20 010 04	44	7,600	39,000
250 A	20 004 04	20 010 04	51	9,600	51,000
315 A	20 004 04	20 010 04	69	14,000	84,000
355 A	20 004 04	20 010 04	81	20,000	125,000
400 A	20 004 04	20 010 04	94	27,000	155,000

Cut-off-characteristics



Time / Current Characteristics



Size
3

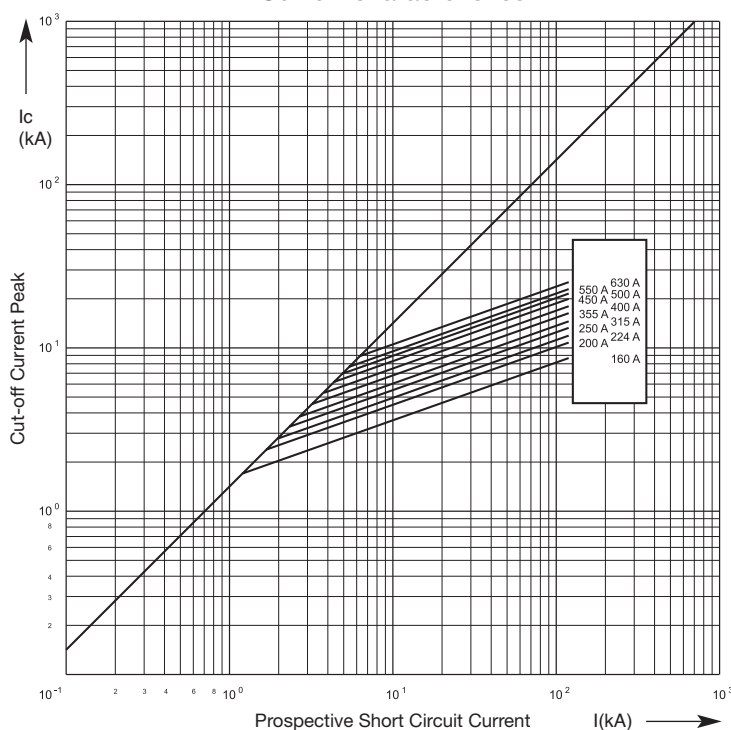
Rated voltage
AC 500 V

Operating class
aR

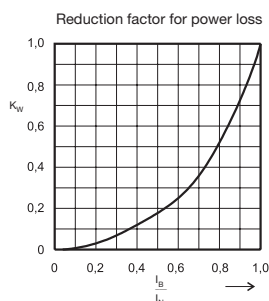
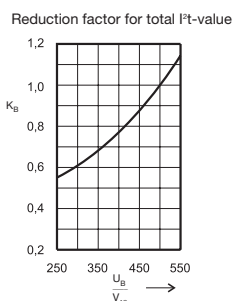
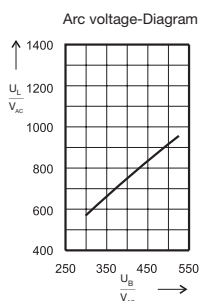
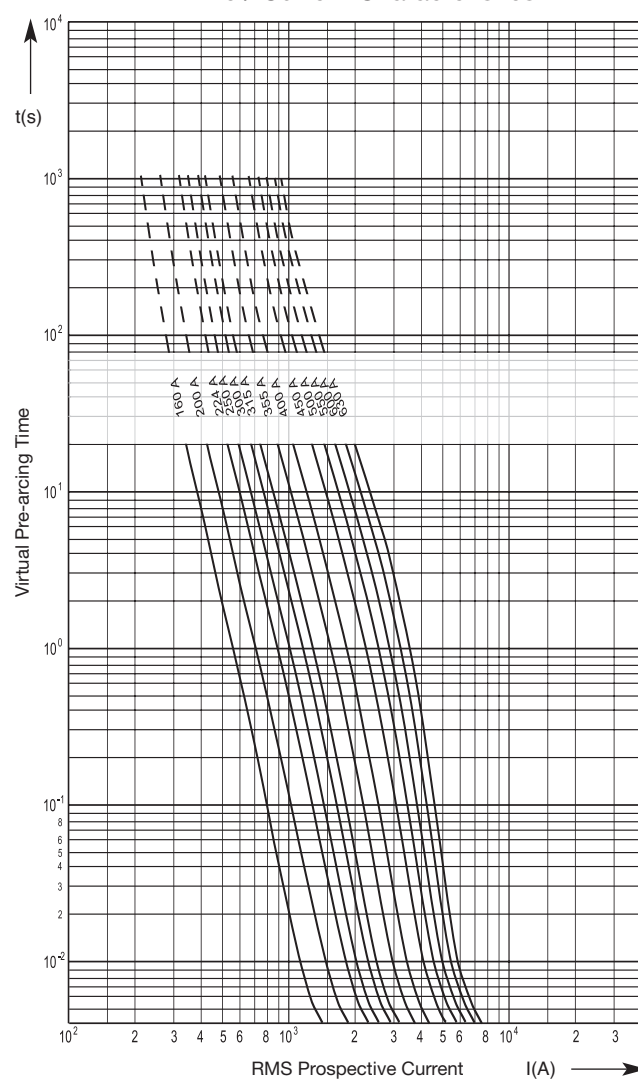
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Part No. with signal indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 500 V A ² t
160 A	20 005 04	20 011 04	48	2,400	19,500
200 A	20 005 04	20 011 04	56	5,800	37,000
224 A	20 005 04	20 011 04	61	7,600	39,000
250 A	20 005 04	20 011 04	65	9,600	51,000
315 A	20 005 04	20 011 04	76	14,000	84,000
355 A	20 005 04	20 011 04	83	20,000	125,000
400 A	20 005 04	20 011 04	85	27,000	155,000
450 A	20 005 04	20 011 04	90	38,000	190,000
500 A	20 005 04	20 011 04	98	47,000	240,000
550 A	20 005 04	20 011 04	110	57,000	300,000
630 A	20 005 04	20 011 04	122	80,000	420,000

Cut-off-characteristics



Time / Current Characteristics



Size
000/00

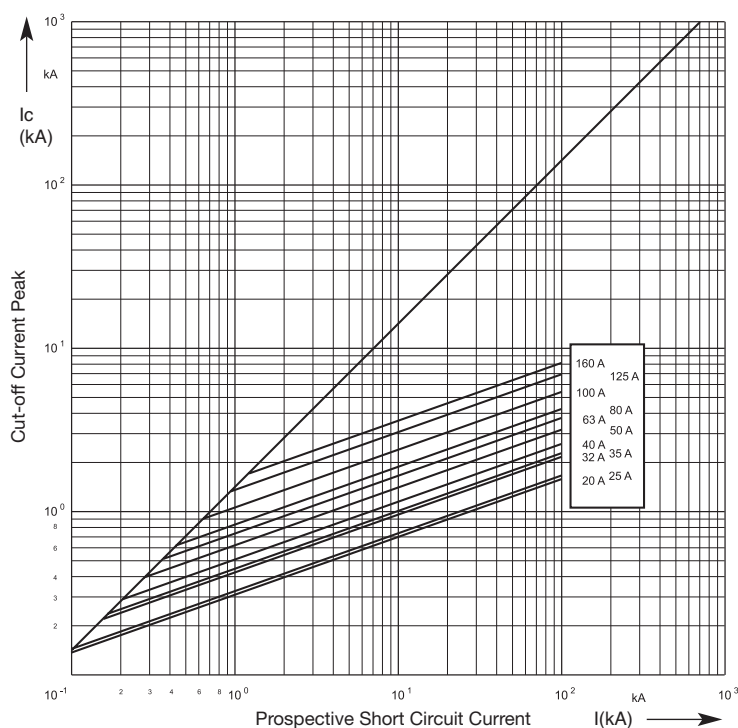
Rated voltage
AC 690 V

Operating class
≤ 100 A gR / > 100 A aR

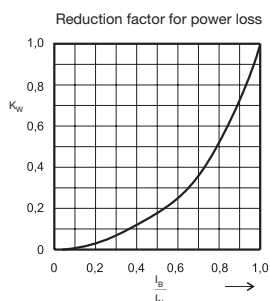
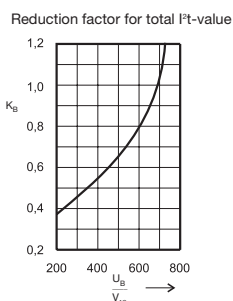
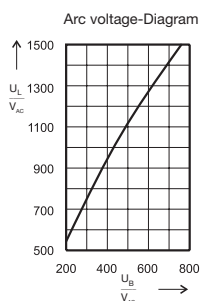
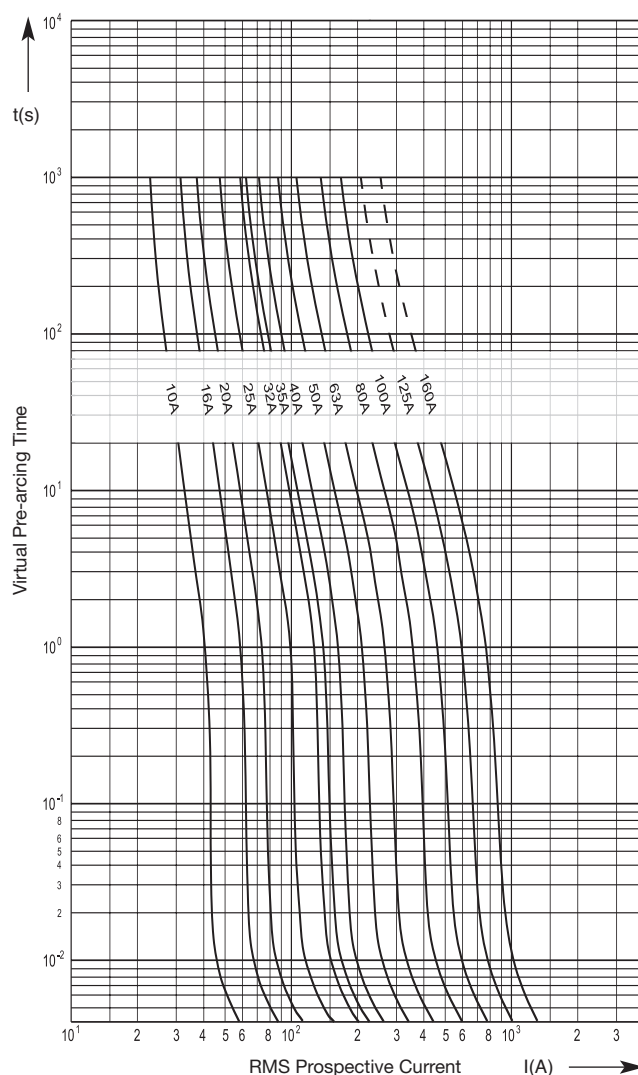
Rated breaking capacity
100 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 690 V A ² t
10 A	20 477 20	2.5	2.5	18
16 A	20 477 20	4.1	5.5	40
20 A	20 477 20	5.5	12	91
25 A	20 477 20	6	16	110
32 A	20 477 20	7.1	35	250
40 A	20 477 20	9.2	61	450
50 A	20 477 20	12	110	820
63 A	20 477 20	14	190	1,400
80 A	20 209 20	17	350	2,600
100 A	20 209 20	21	610	4,500
125 A	20 209 20	25	1,200	9,100
160 A	20 209 20	32	2,100	15,000

Cut-off-characteristics



Time / Current Characteristics



Size
1

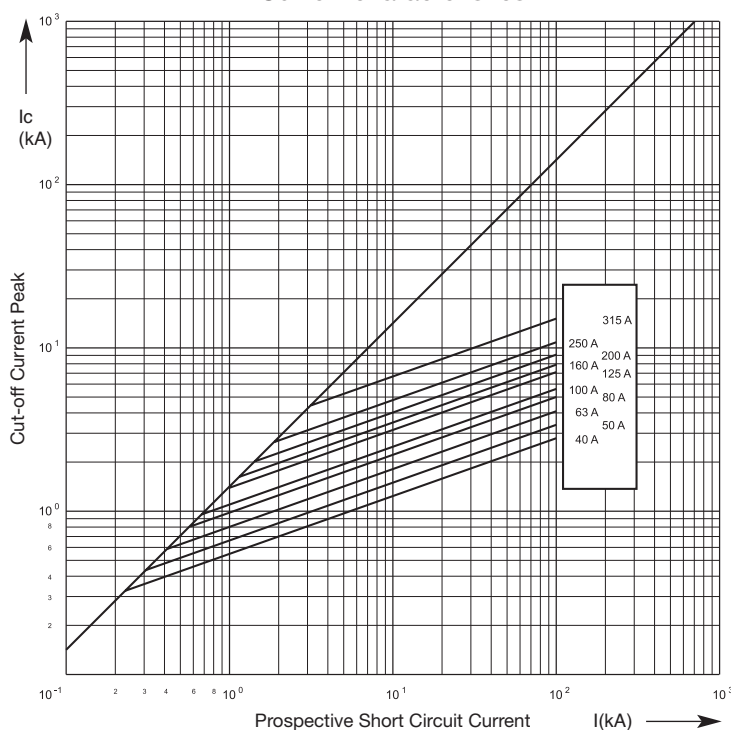
Rated voltage
AC 690 V

Operating class
≤ 100 A gR / > 100 A aR

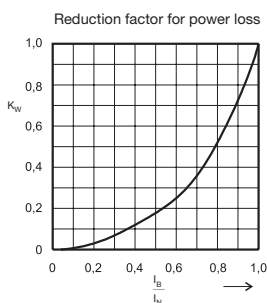
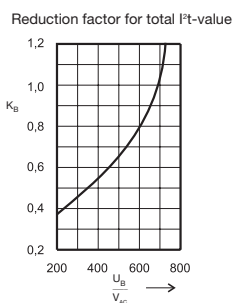
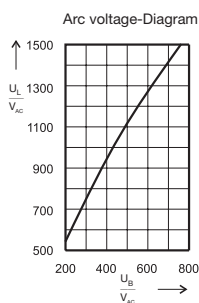
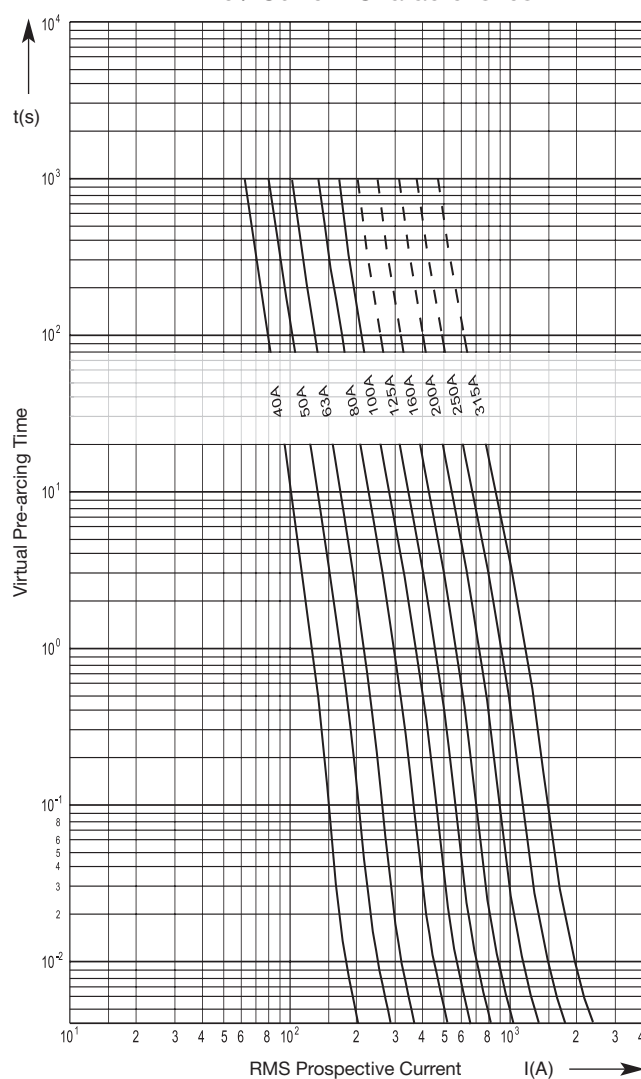
Rated breaking capacity
100 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 690 V A ² t
40 A	20 211 20	8	80	570
50 A	20 211 20	11	140	1,000
63 A	20 211 20	14	250	1,800
80 A	20 211 20	20	470	3,400
100 A	20 211 20	24	650	4,700
125 A	20 211 20	31	1,050	7,600
160 A	20 211 20	42	1,900	14,000
200 A	20 211 20	52	2,800	21,000
250 A	20 211 20	71	5,000	36,000
315 A	20 211 20	88	11,000	76,000

Cut-off-characteristics



Time / Current Characteristics



Size
2

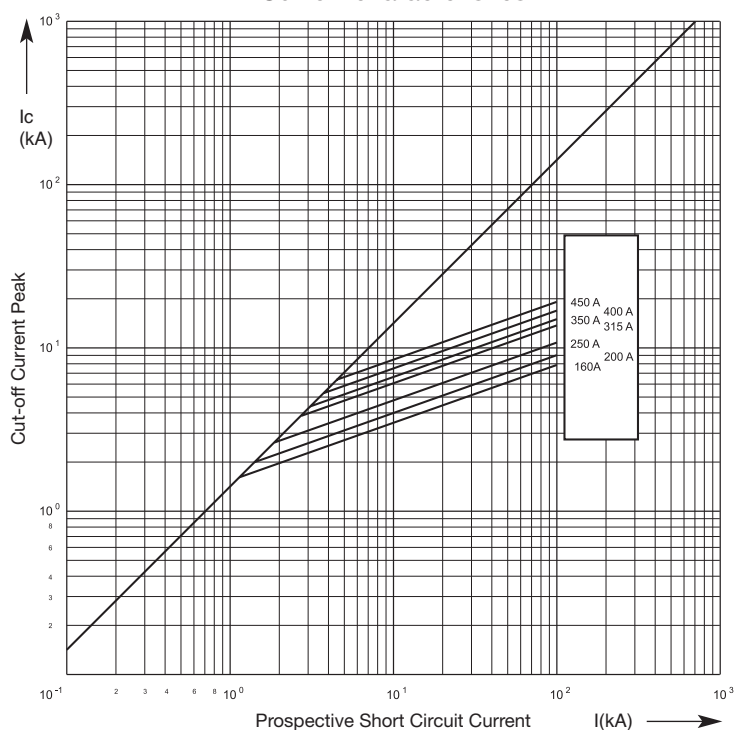
Rated voltage
AC 690 V

Operating class
aR

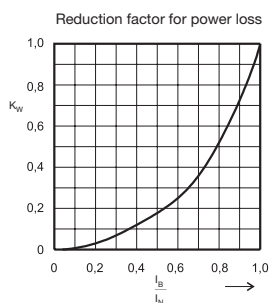
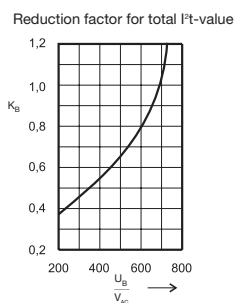
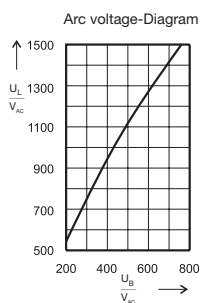
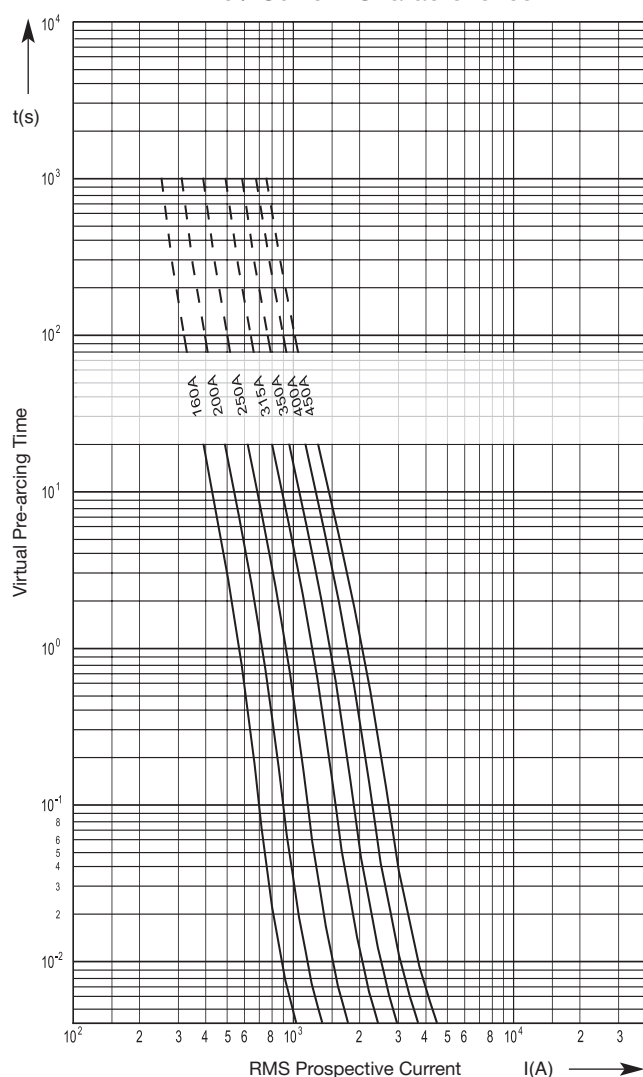
Rated breaking capacity
100 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 690 V A ² t	
160 A	20 212 20	42	1,900	14,000	
200 A	20 212 20	52	2,800	21,000	
250 A	20 212 20	71	5,000	36,000	
315 A	20 212 20	79	11,000	76,000	
350 A	20 212 20	85	14,000	100,000	
400 A	20 212 20	95	20,000	145,000	
450 A	20 212 20	100	30,000	220,000	

Cut-off-characteristics



Time / Current Characteristics



Size
3

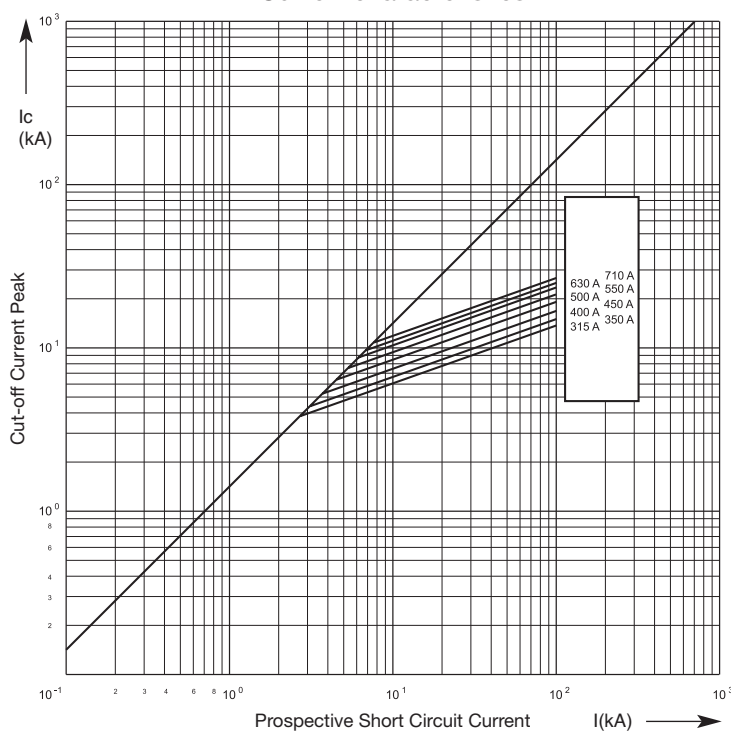
Rated voltage
AC 690 V

Operating class
aR

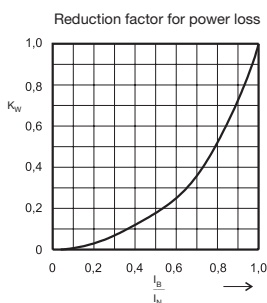
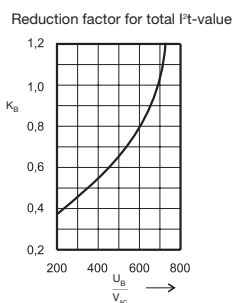
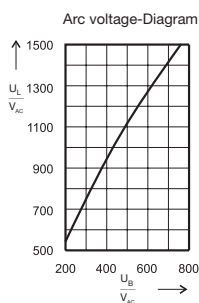
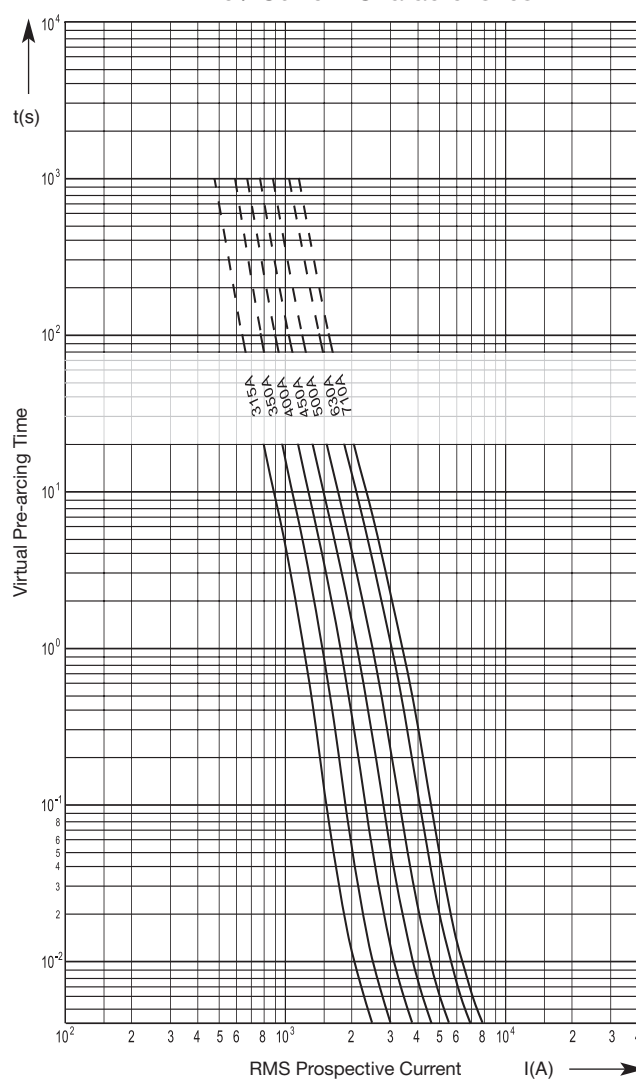
Rated breaking capacity
100 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 690 V A ² t
315 A	20 213 20	79.0	11,000	76,000
355 A	20 213 20	85.0	14,000	100,000
400 A	20 213 20	95.0	20,000	150,000
450 A	20 213 20	95.0	30,000	220,000
500 A	20 213 20	100.0	42,000	300,000
550 A	20 213 20	110.0	55,000	400,000
630 A	20 213 20	130.0	67,000	490,000
710 A	20 213 20	150.0	84,000	610,000

Cut-off-characteristics



Time / Current Characteristics



Size
0

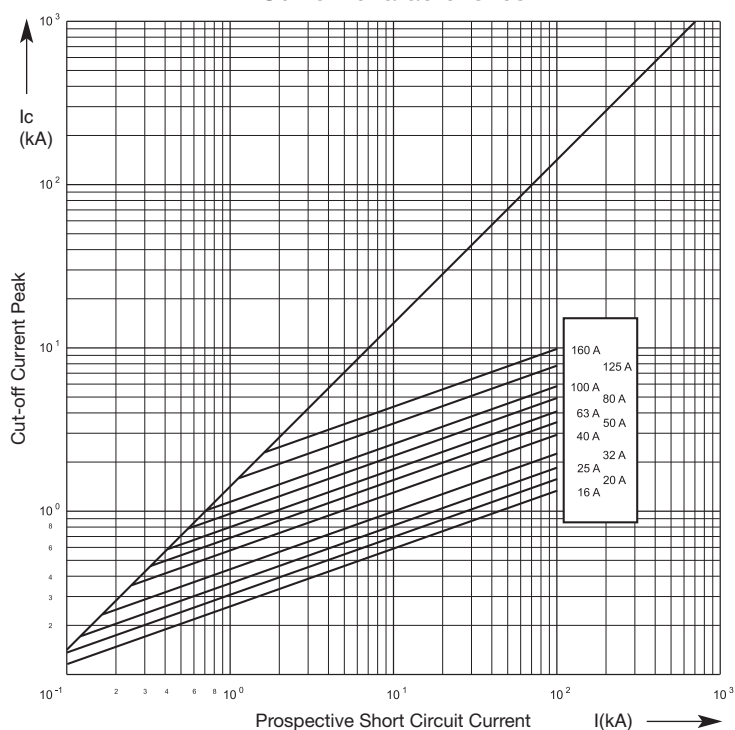
Rated voltage
AC 1000 V

Operating class
≤ 50 A gR / > 50 A aR

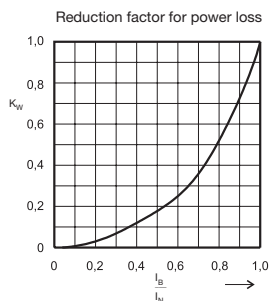
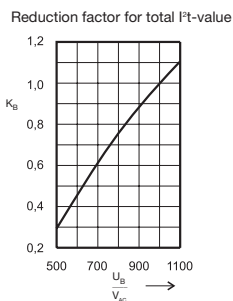
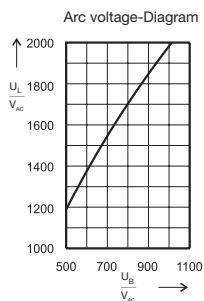
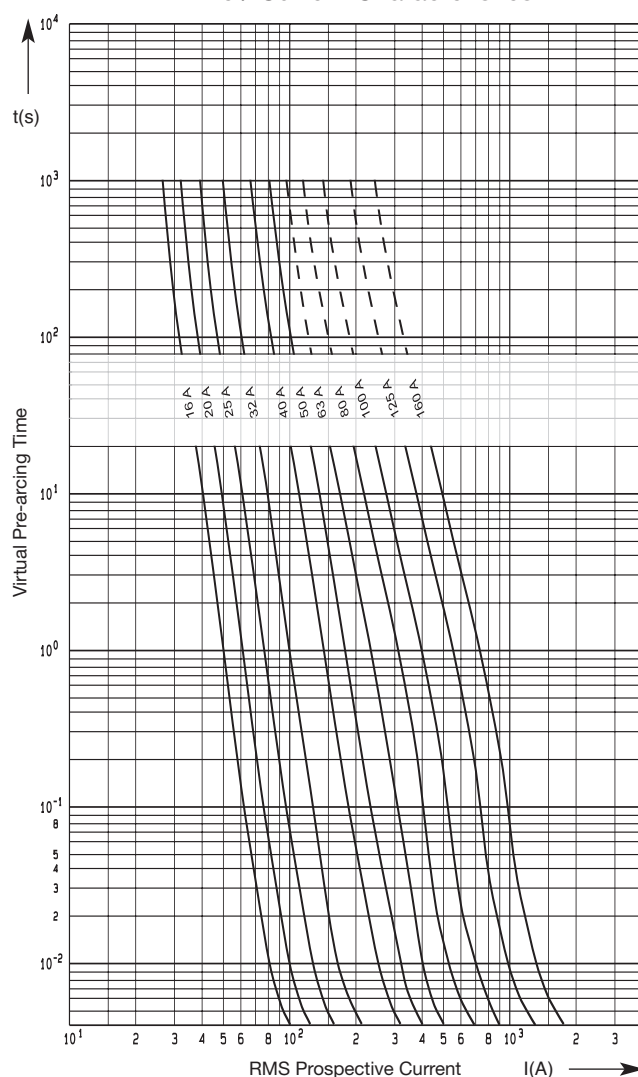
Rated breaking capacity
100 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 1000 V A ² t
16 A	20 384 04	6.8	10	50
20 A	20 384 04	8	17	100
25 A	20 384 04	9	29	180
32 A	20 384 04	12	52	340
40 A	20 384 04	14	120	600
50 A	20 384 04	19	210	1,100
63 A	20 384 04	21	320	1,700
80 A	20 384 04	23	700	3,300
100 A	20 384 04	27	1,100	6,500
125 A	20 384 04	32	2,300	14,000
160 A	20 384 04	42	4,500	20,000

Cut-off-characteristics



Time / Current Characteristics



Size
3

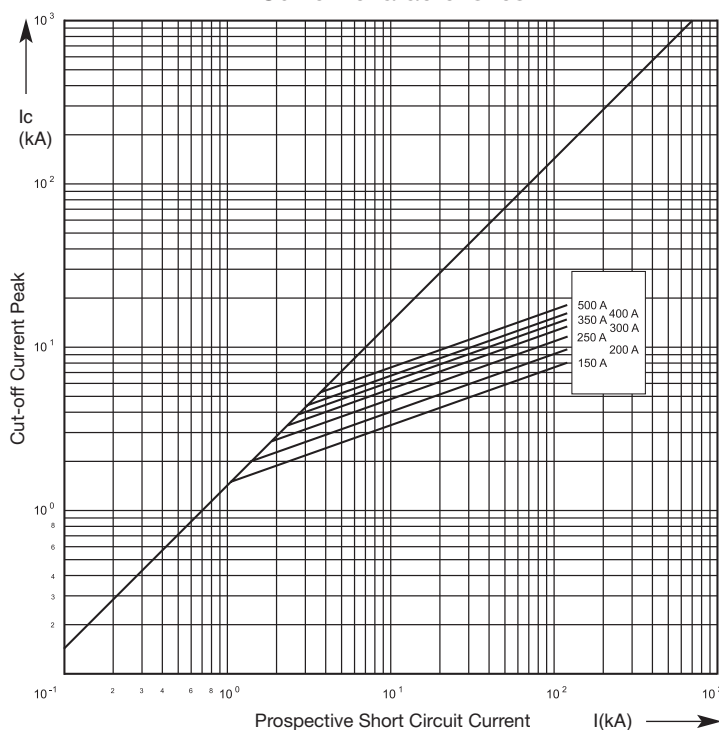
Rated voltage
AC 660 V

Operating class
gR

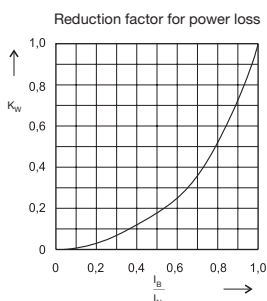
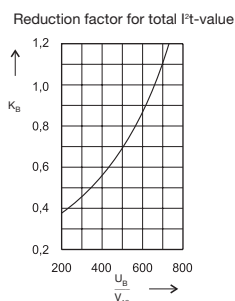
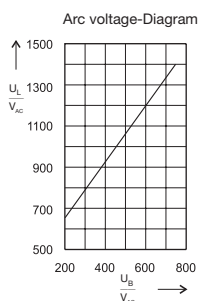
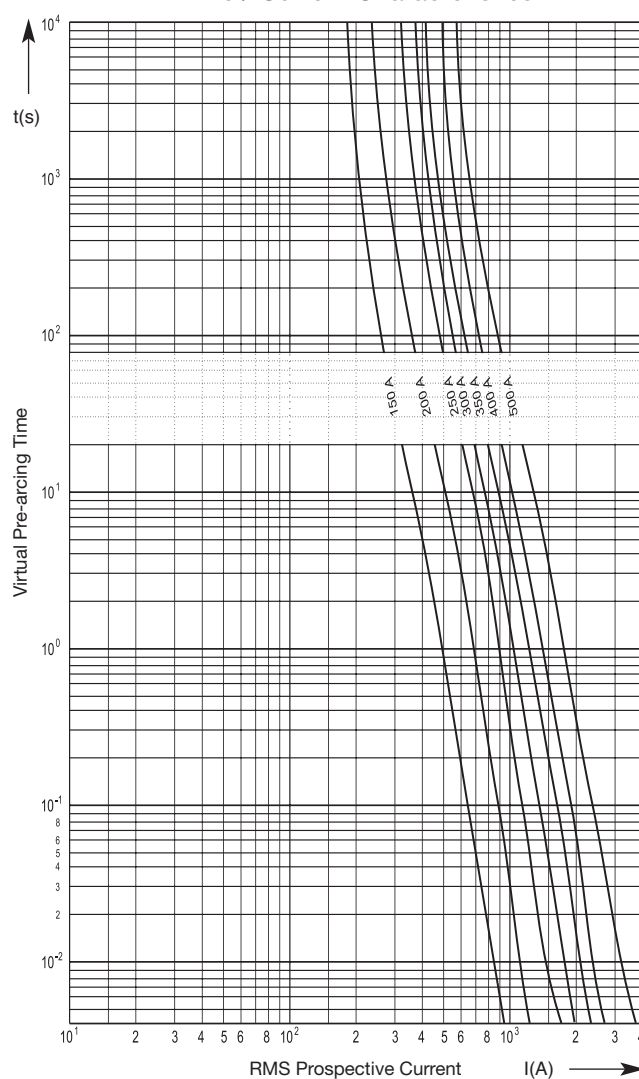
Rated breaking capacity
120 kA

Rated current	Part No. with combi indicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 660 V A ² t
150 A	20 373 04	35	2,100	20,000
200 A	20 373 04	56	3,800	36,000
250 A	20 373 04	69	6,700	65,000
300 A	20 373 04	78	10,000	102,000
350 A	20 373 04	84	14,000	145,000
400 A	20 373 04	97	19,000	185,000
500 A	20 373 04	114	27,000	280,000

Cut-off-characteristics



Time / Current Characteristics



Size
3

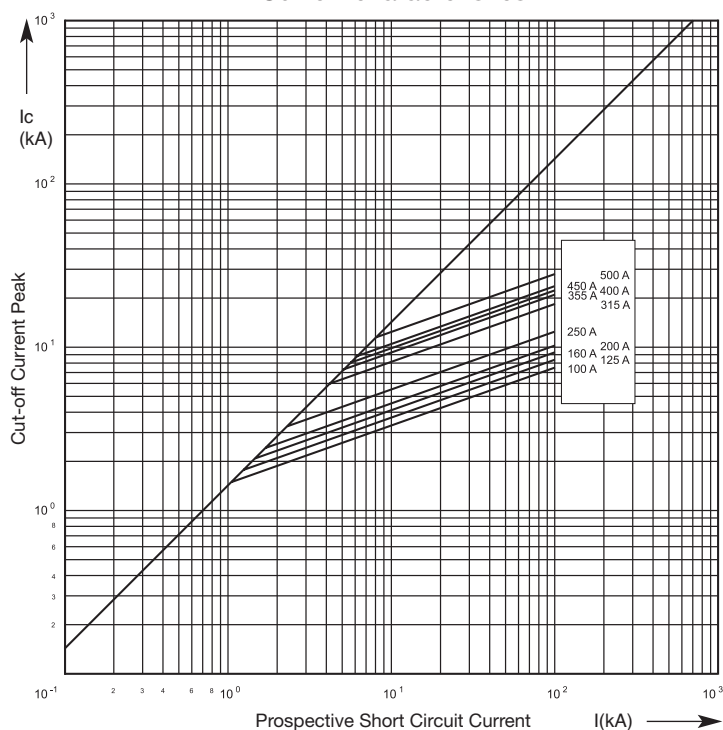
Rated voltage
AC 1000 V

Operating class
aR

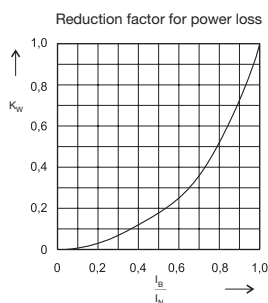
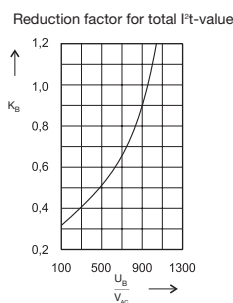
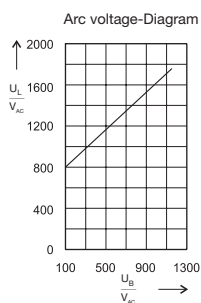
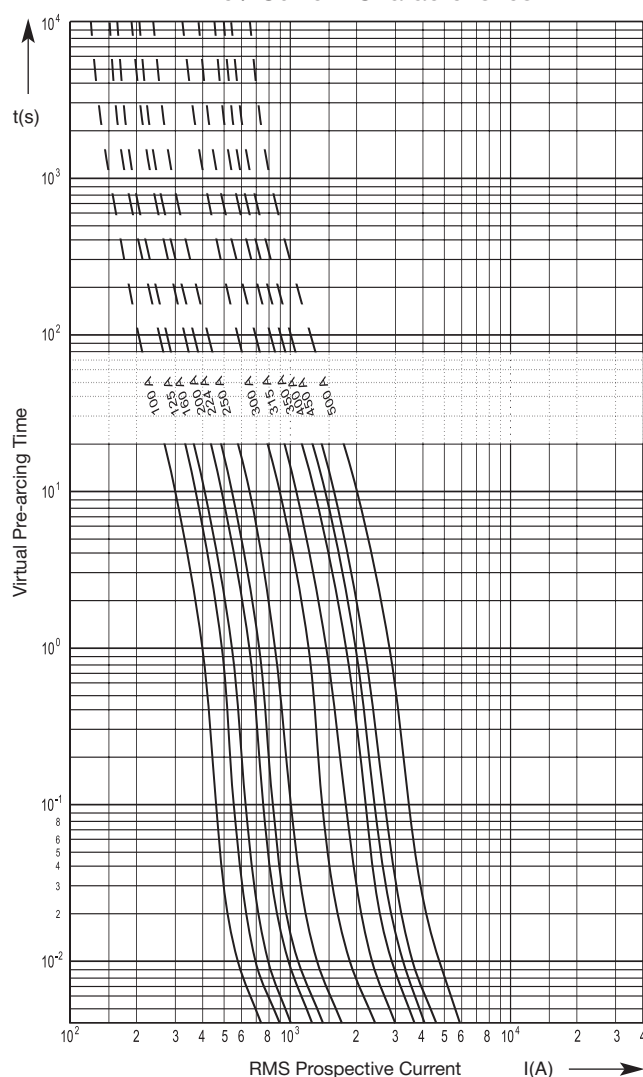
Rated breaking capacity
100 kA

Rated current	Part No. with Topindicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 1000 V A ² t
100 A	20 407 04	28	2,100	5,800
125 A	20 407 04	34	2,900	8,900
160 A	20 407 04	36	4,100	12,800
200 A	20 407 04	41	5,600	18,000
250 A	20 407 04	49	10,000	31,000
315 A	20 407 04	73	34,000	97,000
355 A	20 407 04	77	51,000	152,000
400 A	20 407 04	79	60,000	180,000
450 A	20 407 04	82	74,000	220,000
500 A	20 407 04	87	125,000	370,000

Cut-off-characteristics



Time / Current Characteristics



Size
3

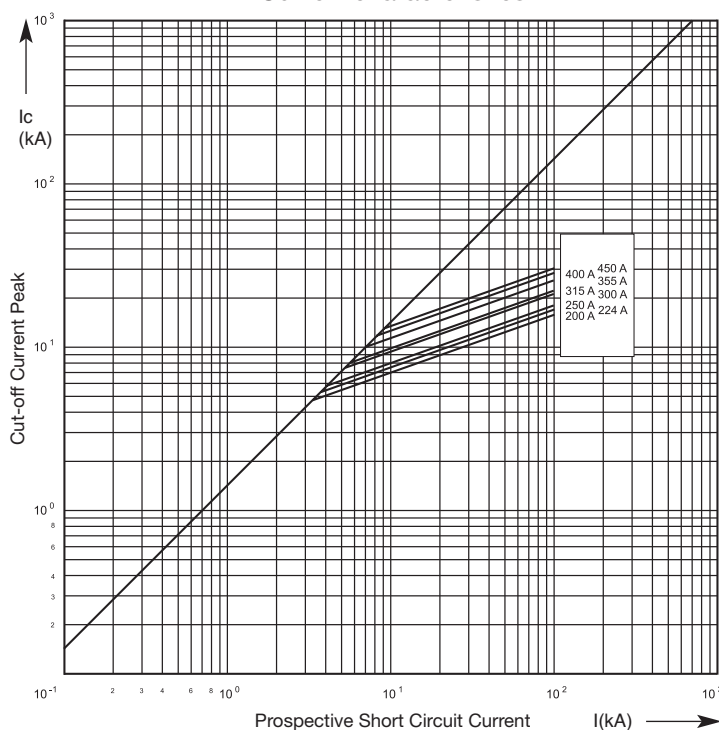
Rated voltage
AC 2000 V

Operating class
aR

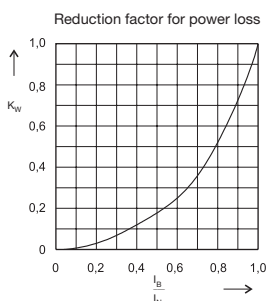
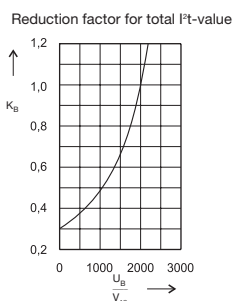
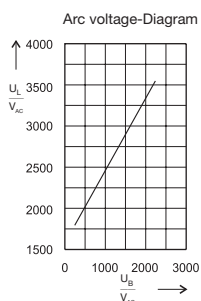
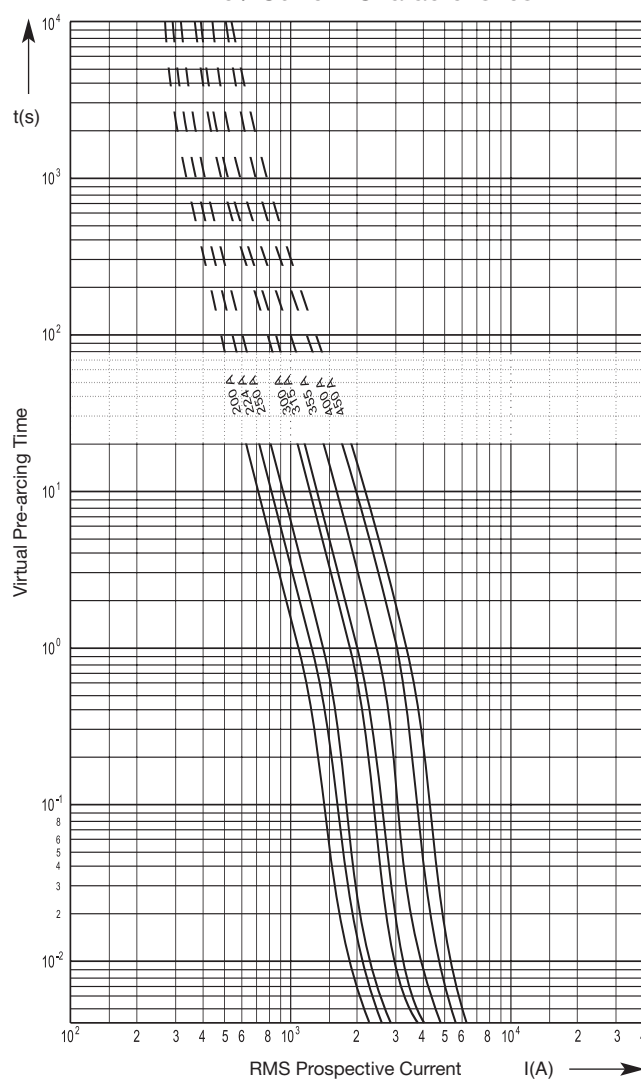
Rated breaking capacity
100 kA

Rated current	Part No. with Topindicator	Power loss W	Pre-arcing I ² t-value A ² t	Total I ² t-value @ 2000 V A ² t
200 A	20 404 04	78	21,000	60,000
224 A	20 404 04	85	27,000	77,000
250 A	20 404 04	103	33,000	95,000
300 A	20 404 04	115	53,000	151,000
315 A	20 404 04	121	62,000	172,000
355 A	20 404 04	135	97,000	280,000
400 A	20 404 04	145	130,000	410,000
450 A	20 404 04	153	159,000	520,000

Cut-off-characteristics



Time / Current Characteristics



Fuse Base

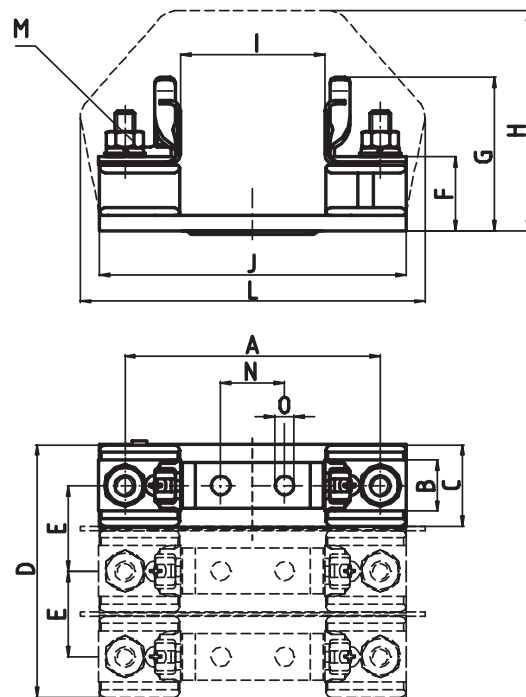
Size
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Rated voltage
AC 500/690 V

Standard
DIN 43620

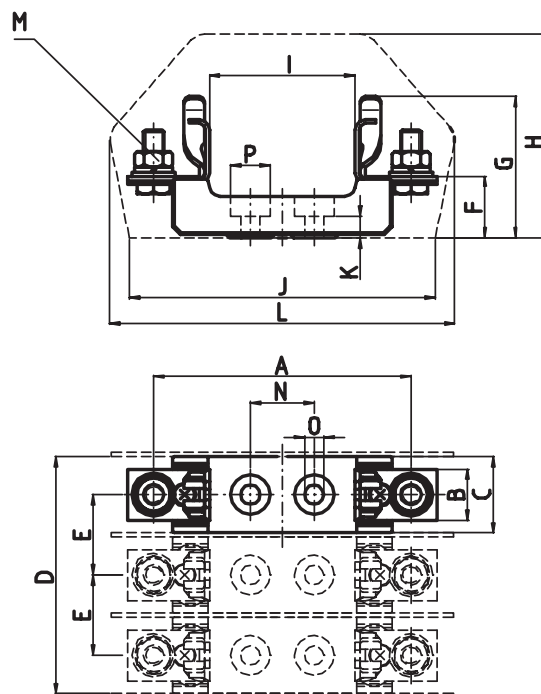
Part No.
21 001 01

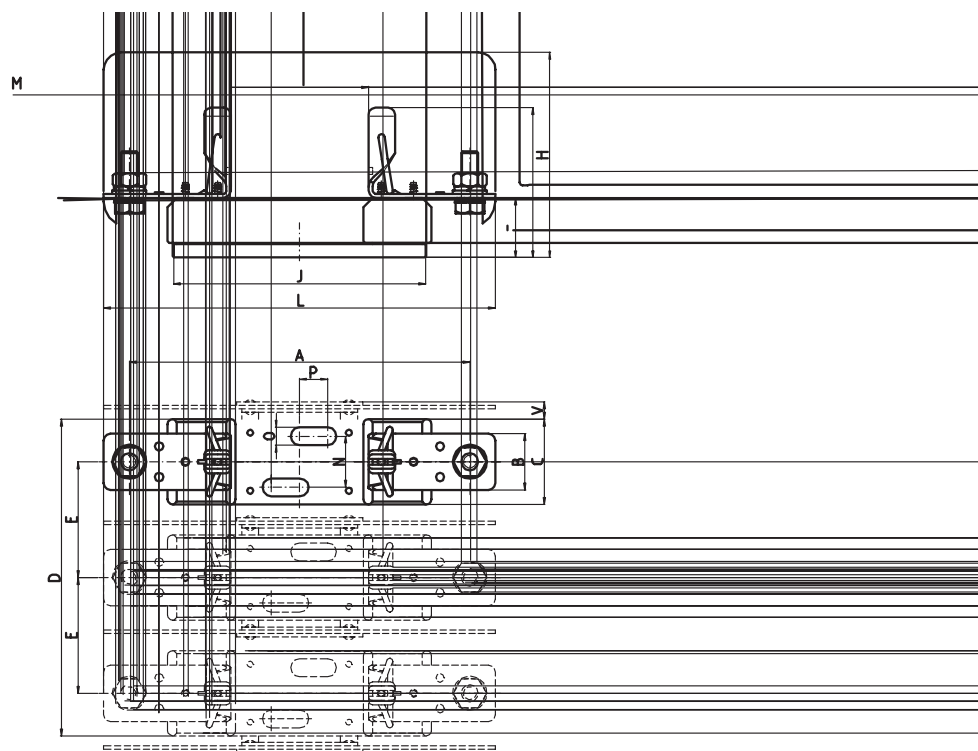
A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
D	3.90" (99 mm)
E	1.32" (33.5 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
H	3.40" (86 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)



Part No.
21 001 10

A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.18" (30 mm)
D	3.66" (93 mm)
E	1.24" (31.5 mm)
F	0.94" (24 mm)
G	2.20" (56 mm)
H	3.15" (80 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
K	0.34" (8.7 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)
P	0.60" (15.5 mm)



Fuse Base
Sizes
1,2 and 3
Rated voltage
AC 500/690 V
Standard
DIN 43620


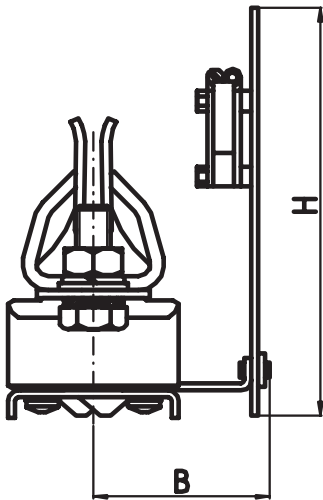
Size 1		Size 2		Size 3	
Power acceptance 32 W		Power acceptance 45 W		Power acceptance 60 W	
Part No. 21 003 01		Part No. 21 004 01		Part No. 21 005 01	
A	6.90" (175 mm)	A	7.87" (200 mm)	A	8.27" (210 mm)
B	1.30" (33 mm)	B	1.30" (33 mm)	B	1.30" (33 mm)
C	1.97" (50 mm)	C	1.97" (50 mm)	C	2.17" (55 mm)
D	7.00" (178 mm)	D	7.32" (186 mm)	D	8.86" (225 mm)
E	2.52" (64 mm)	E	2.68" (68 mm)	E	3.35" (85 mm)
F	1.38" (35 mm)	F	1.38" (35 mm)	F	1.38" (35 mm)
G	3.30" (84 mm)	G	3.58" (91 mm)	G	3.78" (96 mm)
H	4.20" (107 mm)	H	4.72" (120 mm)	H	5.00" (127 mm)
I	3.15" (80 mm)	I	3.15" (80 mm)	I	3.15" (80 mm)
J	5.83" (148 mm)	J	5.83" (148 mm)	J	5.83" (148 mm)
L	7.78" (200 mm)	L	9.06" (230 mm)	L	9.84" (250 mm)
M	M 10	M	M 10	M	M 10
N	1.18" (30 mm)	N	1.18" (30 mm)	N	1.18" (30 mm)
O	0.40" (10 mm)	O	0.40" (10 mm)	O	0.40" (10 mm)
P	0.65" (16.5 mm)	P	0.65" (16.5 mm)	P	0.65" (16.5 mm)
V	0.40" (10 mm)	V	0.40" (10 mm)	V	0.40" (10 mm)

Fuse Base

Sizes
00,1,2 and 3

Rated voltage
AC 500 V

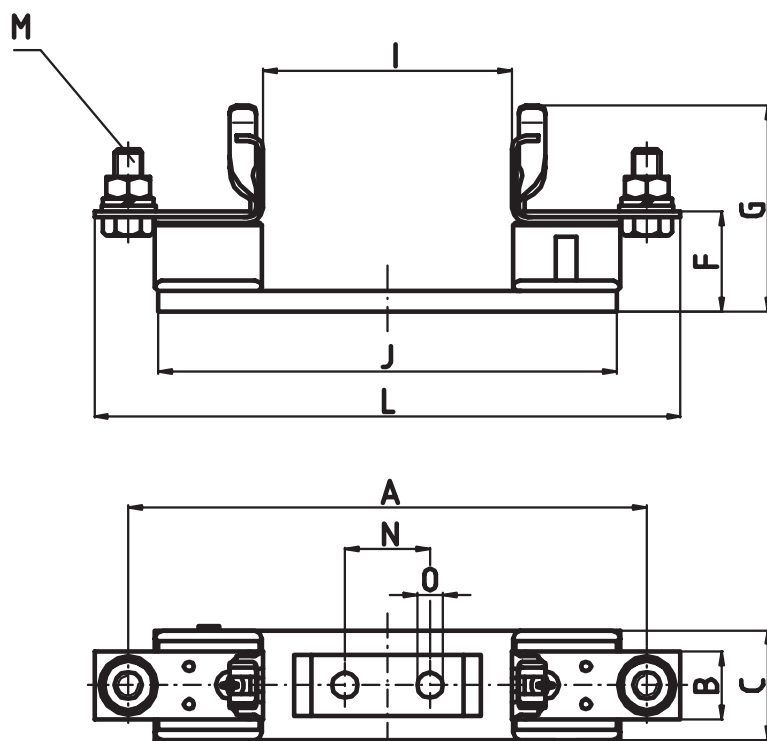
Size	Part No.	B	H	
00	21 007 01	1.34" (34 mm)	3.15" (80 mm)	
1	21 009 01	1.65" (42 mm)	4.33" (110 mm)	
2	21 010 01	2.05" (52 mm)	4.72" (120 mm)	
3	21 011 01	2.17" (55 mm)	5.00" (127 mm)	



Fuse Base

Sizes
0

Rated voltage
AC 1000 V



Part No.
21 384 01

A	5.98" (152 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
I	2.87" (73 mm)
J	5.28" (134 mm)
L	6.80" (173 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)

FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

SIZES 1, 2 AND 3



SIBA square body fuses type SQB are available in 3 different body sizes. Each size is available in various mounting styles for global applications. Variety in body sizes, mounting style and amp ratings allow the greatest flexibility in equipment design.

SIBA SQB fuses provide superior engineering for the protection of today's power semiconductors. The silicated process together with special shape and form of the pure silver melting elements give excellent results of low I^2t -values and high interrupting ratings. And they are the most reliable under high cycling load conditions.

All fuses can be fitted with microswitches.

Approvals:

Standards:

UL Recognition

DIN 43653

DIN VDE 0636-40

IEC 60269-4

UL 248-13

Class:

aR

Voltage ratings:

AC 700 V / AC 1300 V

Current ratings:

50 up to 1600 A

Sizes:

1, 2 and 3

Tested at:

acc. IEC - $1.1 \times U_n$

acc. UL - $1.0 \times U_n$

Features / Benefits

- ▶ High interrupting rating 200 kA
- ▶ Very low I^2t -values
- ▶ Voltage ratings AC 690/700 V and AC 1250/1300 V
- ▶ Suitable for North American and European standard
- ▶ Reliable also at high cyclic loading
- ▶ Fuse bases and Accessories are available



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB SIZES 1, 2 AND 3

Selection Guide

AC 690/700 V

Size	Rated Voltage AC	Design	Indicator Type	Part No.	Type	Selector Guide Page	Techn. Data Page
1	690/700 V	US-Type short	without	20 617 31	SQB 1	URS 5	URS 69
1	690/700 V	US-Type short	for microswitch fitting	20 616 32	SQB 1	URS 6	URS 69
2	690/700 V	US-Type short	without	20 627 31	SQB 2	URS 7	URS 70
2	690/700 V	US-Type short	for microswitch fitting	20 626 32	SQB 2	URS 8	URS 70
3	690/700 V	US-Type short	without	20 637 31	SQB 3	URS 9	URS 71
3	690/700 V	US-Type short	for microswitch fitting	20 636 32	SQB 3	URS 10	URS 71
1	690/700 V	US-Type long	without	20 619 31	SQB 1	URS 11	URS 69
1	690/700 V	US-Type long	for microswitch fitting	20 618 32	SQB 1	URS 12	URS 69
2	690/700 V	US-Type long	without	20 629 31	SQB 2	URS 13	URS 70
2	690/700 V	US-Type long	for microswitch fitting	20 628 32	SQB 2	URS 14	URS 70
3	690/700 V	US-Type long	without	20 639 31	SQB 3	URS 15	URS 71
3	690/700 V	US-Type long	for microswitch fitting	20 638 32	SQB 3	URS 16	URS 71
1	690/700 V	UNC threads	without	20 663 31	SQB 1	URS 17	URS 69
1	690/700 V	UNC threads	for microswitch fitting	20 664 32	SQB 1	URS 18	URS 69
2	690/700 V	UNC threads	without	20 673 31	SQB 2	URS 19	URS 70
2	690/700 V	UNC threads	for microswitch fitting	20 674 32	SQB 2	URS 20	URS 70
3	690/700 V	UNC threads	without	20 683 31	SQB 3	URS 21	URS 71
3	690/700 V	UNC threads	for microswitch fitting	20 684 32	SQB 3	URS 22	URS 71
1	690/700 V	80 mm Fix. Center	without	20 610 31	SQB 1	URS 23	URS 69
1	690/700 V	80 mm Fix. Center	for microswitch fitting	20 612 32	SQB 1	URS 24	URS 69
2	690/700 V	80 mm Fix. Center	without	20 620 31	SQB 2	URS 25	URS 70
2	690/700 V	80 mm Fix. Center	for microswitch fitting	20 622 32	SQB 2	URS 26	URS 70
3	690/700 V	80 mm Fix. Center	without	20 630 31	SQB 3	URS 27	URS 71
3	690/700 V	80 mm Fix. Center	for microswitch fitting	20 632 32	SQB 3	URS 28	URS 72
1	690/700 V	110 mm Fix. Center	without	20 613 31	SQB 1	URS 29	URS 69
1	690/700 V	110 mm Fix. Center	for microswitch fitting	20 615 32	SQB 1	URS 30	URS 69
2	690/700 V	110 mm Fix. Center	without	20 623 31	SQB 2	URS 31	URS 70
2	690/700 V	110 mm Fix. Center	for microswitch fitting	20 625 32	SQB 2	URS 32	URS 70
3	690/700 V	110 mm Fix. Center	without	20 633 31	SQB 3	URS 33	URS 71
3	690/700 V	110 mm Fix. Center	for microswitch fitting	20 635 32	SQB 3	URS 34	URS 71
1	690/700 V	Metric threads	without	20 660 31	SQB 1	URS 35	URS 69
1	690/700 V	Metric threads	for microswitch fitting	20 661 32	SQB 1	URS 36	URS 69
2	690/700 V	Metric threads	without	20 670 31	SQB 2	URS 37	URS 70
2	690/700 V	Metric threads	for microswitch fitting	20 671 32	SQB 2	URS 38	URS 70
3	690/700 V	Metric threads	without	20 680 31	SQB 3	URS 39	URS 71
3	690/700 V	Metric threads	for microswitch fitting	20 681 32	SQB 3	URS 40	URS 71
2	690/700 V	Double-Barrel	for microswitch fitting	20 678 32	SQB 2	URS 41	URS 72
3	690/700 V	Double-Barrel	for microswitch fitting	20 688 32	SQB 3	URS 42	URS 73



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB SIZES 1, 2 AND 3

Selection Guide

AC 1250/1300 V

Size	Rated Voltage AC	Design	Indicator Type	Part No.	Type	Selector Guide Page	Techn. Data Page
1	1250/1300 V	US-Type long	without	20 719 31	SQB 1	URS 43	URS 74
1	1250/1300 V	US-Type long	for microswitch fitting	20 718 32	SQB 1	URS 44	URS 74
2	1250/1300 V	US-Type long	without	20 729 31	SQB 2	URS 45	URS 75
2	1250/1300 V	US-Type long	for microswitch fitting	20 728 32	SQB 2	URS 46	URS 75
3	1250/1300 V	US-Type long	without	20 739 31	SQB 3	URS 47	URS 76
3	1250/1300 V	US-Type long	for microswitch fitting	20 738 32	SQB 3	URS 48	URS 76
1	1250/1300 V	UNC threads	without	20 763 31	SQB 1	URS 49	URS 74
1	1250/1300 V	UNC threads	for microswitch fitting	20 764 32	SQB 1	URS 50	URS 74
2	1250/1300 V	UNC threads	without	20 773 31	SQB 2	URS 51	URS 75
2	1250/1300 V	UNC threads	for microswitch fitting	20 774 32	SQB 2	URS 52	URS 75
3	1250/1300 V	UNC threads	without	20 783 31	SQB 3	URS 53	URS 76
3	1250/1300 V	UNC threads	for microswitch fitting	20 784 32	SQB 3	URS 54	URS 76
1	1250/1300 V	110 mm Fix. Center	without	20 713 31	SQB 1	URS 55	URS 74
1	1250/1300 V	110 mm Fix. Center	for microswitch fitting	20 715 32	SQB 1	URS 56	URS 74
2	1250/1300 V	110 mm Fix. Center	without	20 723 31	SQB 2	URS 57	URS 75
2	1250/1300 V	110 mm Fix. Center	for microswitch fitting	20 725 32	SQB 2	URS 58	URS 75
3	1250/1300 V	110 mm Fix. Center	without	20 733 31	SQB 3	URS 59	URS 76
3	1250/1300 V	110 mm Fix. Center	for microswitch fitting	20 735 32	SQB 3	URS 60	URS 76
1	1250/1300 V	Metric threads	without	20 760 31	SQB 1	URS 61	URS 74
1	1250/1300 V	Metric threads	for microswitch fitting	20 761 32	SQB 1	URS 62	URS 74
2	1250/1300 V	Metric threads	without	20 770 31	SQB 2	URS 63	URS 75
2	1250/1300 V	Metric threads	for microswitch fitting	20 771 32	SQB 2	URS 64	URS 75
3	1250/1300 V	Metric threads	without	20 780 31	SQB 3	URS 65	URS 76
3	1250/1300 V	Metric threads	for microswitch fitting	20 781 32	SQB 3	URS 66	URS 76
2	1250/1300 V	Metric threads	Double-Barrel	20 778 32	SQB 2	URS 67	URS 77
3	1250/1300 V	Metric threads	Double-Barrel	20 788 32	SQB 3	URS 68	URS 78



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB SIZES 1, 2 AND 3

Selection Guide

Fuse Base

Rated Voltage AC	Fixing Center	Rated Current	Part No.	Techn Data Page	
900 V	80 mm	630 A	21 313 01	URS 79	
1400 V	110 mm	630 A	21 323 01	URS 79	
900 V	80 mm	1250 A	21 313 02	URS 80	
1400 V	110 mm	1250 A	21 323 02	URS 80	

Selection Guide

Microswitch

Rated Current AC	Rated Voltage AC	Contact	Part No.	Techn Data Page	
10 A	250 V	1 change over	28 001 04	URS 81	



FUSES FOR SEMICONDUCTOR PROTECTION

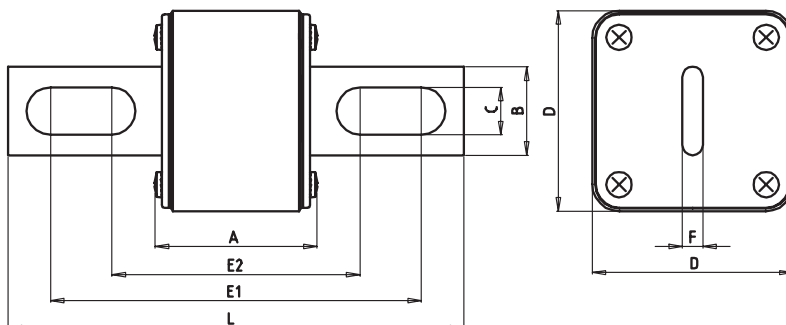
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
63 A	20 617 31	✓	690/700 V	52	2	
80 A	20 617 31	✓	690/700 V	52	2	
100 A	20 617 31	✓	690/700 V	52	2	
125 A	20 617 31	✓	690/700 V	52	2	
160 A	20 617 31	✓	690/700 V	52	2	
200 A	20 617 31	✓	690/700 V	52	2	
250 A	20 617 31	✓	690/700 V	52	2	
315 A	20 617 31	✓	690/700 V	52	2	
350 A	20 617 31	✓	690/700 V	52	2	
400 A	20 617 31	✓	690/700 V	52	2	
450 A	20 617 31	✓	690/700 V	52	2	
500 A	20 617 31	✓	690/700 V	52	2	
630 A	20 617 31	✓	690/700 V	52	2	
700 A	20 617 31	✓	690/700 V	52	2	
800 A	20 617 31	✓	690/700 V	52	2	
900 A	20 617 31		600 V	52	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.00" (51 mm)
E1	4.29" (109 mm)
E2	2.87" (73 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

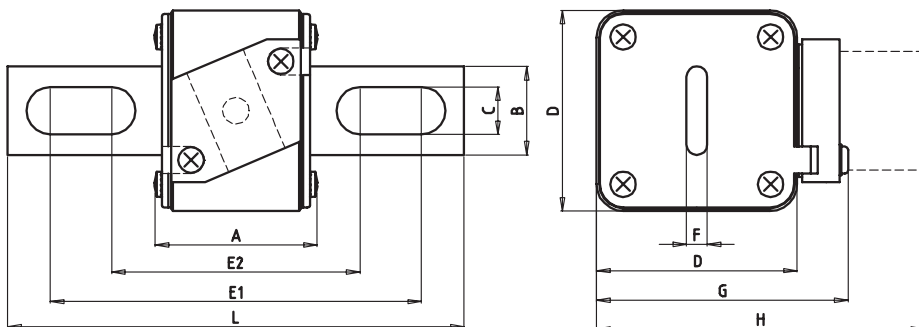
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 616 32	✓	690/700 V	52	2
80 A	20 616 32	✓	690/700 V	52	2
100 A	20 616 32	✓	690/700 V	52	2
125 A	20 616 32	✓	690/700 V	52	2
160 A	20 616 32	✓	690/700 V	52	2
200 A	20 616 32	✓	690/700 V	52	2
250 A	20 616 32	✓	690/700 V	52	2
315 A	20 616 32	✓	690/700 V	52	2
350 A	20 616 32	✓	690/700 V	52	2
400 A	20 616 32	✓	690/700 V	52	2
450 A	20 616 32	✓	690/700 V	52	2
500 A	20 616 32	✓	690/700 V	52	2
630 A	20 616 32	✓	690/700 V	52	2
700 A	20 616 32	✓	690/700 V	52	2
800 A	20 616 32	✓	690/700 V	52	2
900 A	20 616 32		600 V	52	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.00" (51 mm)
E1	4.29" (109 mm)
E2	2.87" (73 mm)
F	0.24" (6 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

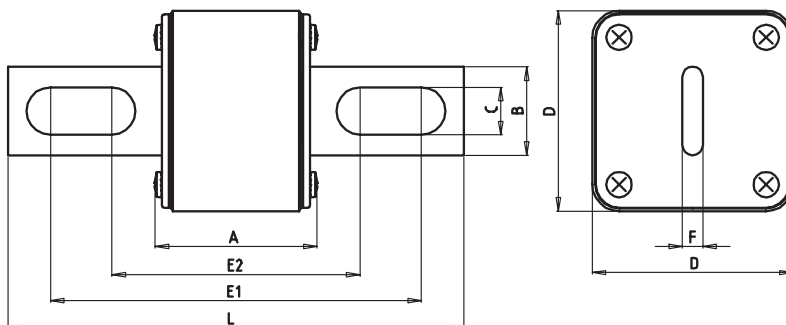
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 627 31	✓	690/700 V	60		
450 A	20 627 31	✓	690/700 V	60	2	
500 A	20 627 31	✓	690/700 V	60	2	
550 A	20 627 31	✓	690/700 V	60	2	
630 A	20 627 31	✓	690/700 V	60	2	
700 A	20 627 31	✓	690/700 V	60	2	
800 A	20 627 31	✓	690/700 V	60	2	
900 A	20 627 31	✓	690/700 V	60	2	
1000 A	20 627 31	✓	690/700 V	60	2	
1100 A	20 627 31	✓	600 V	60	2	
1250 A	20 627 31	✓	600 V	60	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.36" (60 mm)
E1	4.30" (109 mm)
E2	2.87" (73 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

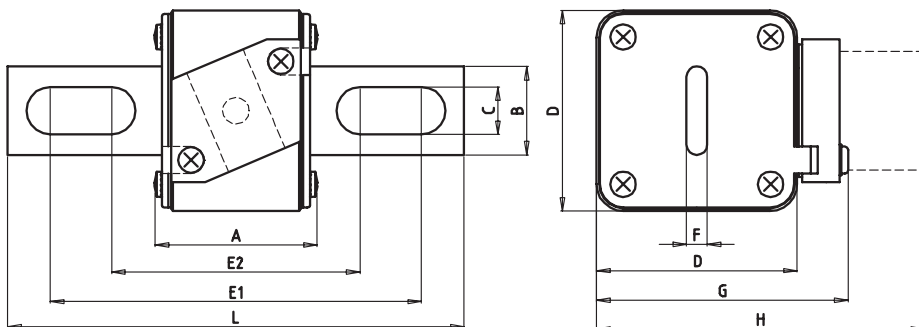
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 626 32	✓	690/700 V	60	
450 A	20 626 32	✓	690/700 V	60	2
500 A	20 626 32	✓	690/700 V	60	2
550 A	20 626 32	✓	690/700 V	60	2
630 A	20 626 32	✓	690/700 V	60	2
700 A	20 626 32	✓	690/700 V	60	2
800 A	20 626 32	✓	690/700 V	60	2
900 A	20 626 32	✓	690/700 V	60	2
1000 A	20 626 32	✓	690/700 V	60	2
1100 A	20 626 32	✓	600 V	60	2
1250 A	20 626 32		600 V	60	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.36" (60 mm)
E1	4.30" (109 mm)
E2	2.87" (73 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

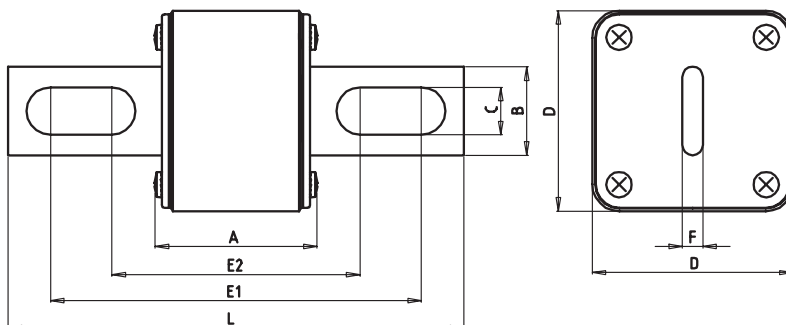
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 637 31	✓	690/700 V	80	2	
550 A	20 637 31	✓	690/700 V	80	2	
630 A	20 637 31	✓	690/700 V	80	2	
700 A	20 637 31	✓	690/700 V	80	2	
800 A	20 637 31	✓	690/700 V	80	2	
900 A	20 637 31	✓	690/700 V	80	2	
1000 A	20 637 31	✓	690/700 V	80	2	
1100 A	20 637 31	✓	690/700 V	80	2	
1250 A	20 637 31	✓	690/700 V	80	2	
1400 A	20 637 31	✓	690/700 V	80	2	
1500 A	20 637 31		600 V	80	2	
1600 A	20 637 31		600 V	80	2	



A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	4.30" (109 mm)
E2	2.95" (75 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

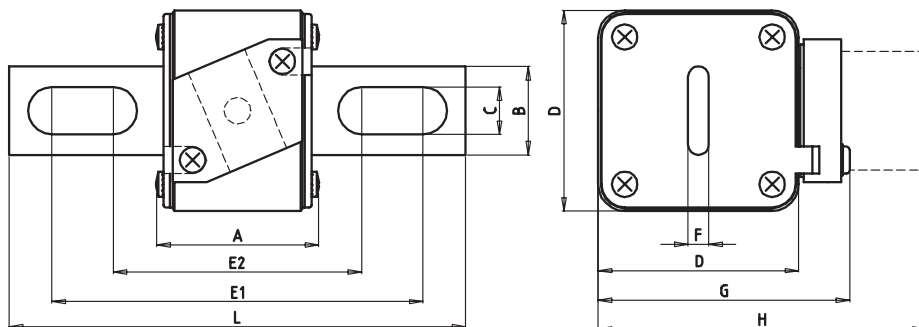
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type short

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 636 32	✓	690/700 V	80	2	
550 A	20 636 32	✓	690/700 V	80	2	
630 A	20 636 32	✓	690/700 V	80	2	
700 A	20 636 32	✓	690/700 V	80	2	
800 A	20 636 32	✓	690/700 V	80	2	
900 A	20 636 32	✓	690/700 V	80	2	
1000 A	20 636 32	✓	690/700 V	80	2	
1100 A	20 636 32	✓	690/700 V	80	2	
1250 A	20 636 32	✓	690/700 V	80	2	
1400 A	20 636 32	✓	690/700 V	80	2	
1500 A	20 636 32		600 V	80	2	
1600 A	20 636 32		600 V	80	2	

A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	4.30" (109 mm)
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F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

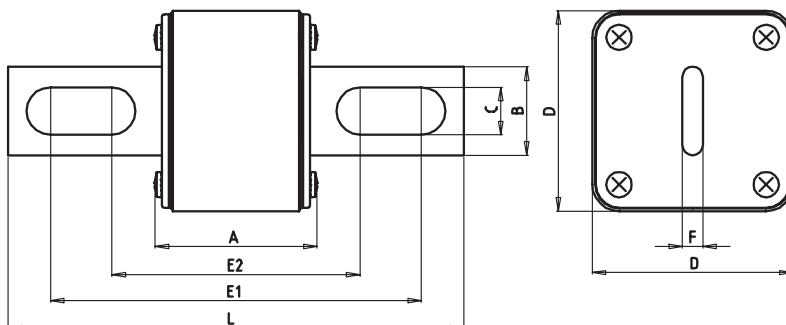
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
63 A	20 619 31	✓	690/700 V	52	2	
80 A	20 619 31	✓	690/700 V	52	2	
100 A	20 619 31	✓	690/700 V	52	2	
125 A	20 619 31	✓	690/700 V	52	2	
160 A	20 619 31	✓	690/700 V	52	2	
200 A	20 619 31	✓	690/700 V	52	2	
250 A	20 619 31	✓	690/700 V	52	2	
315 A	20 619 31	✓	690/700 V	52	2	
350 A	20 619 31	✓	690/700 V	52	2	
400 A	20 619 31	✓	690/700 V	52	2	
450 A	20 619 31	✓	690/700 V	52	2	
500 A	20 619 31	✓	690/700 V	52	2	
630 A	20 619 31	✓	690/700 V	52	2	
700 A	20 619 31	✓	690/700 V	52	2	
800 A	20 619 31	✓	690/700 V	52	2	
900 A	20 619 31		600 V	52	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.00" (51 mm)
E1	5.04" (128 mm)
E2	3.62" (92 mm)
F	0.24" (6 mm)
L	6.06" (154 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

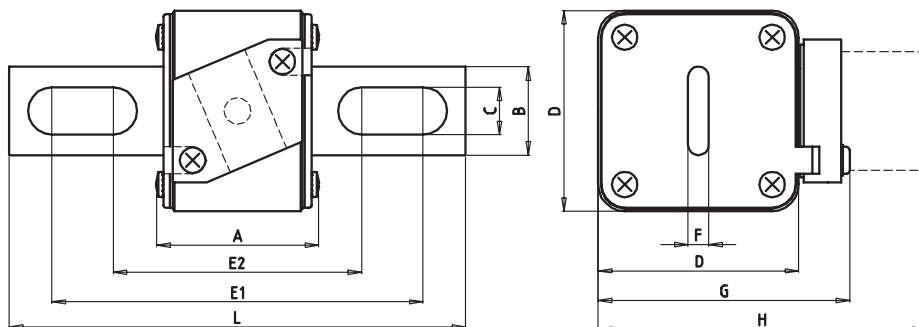
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 618 32	✓	690/700 V	52	2
80 A	20 618 32	✓	690/700 V	52	2
100 A	20 618 32	✓	690/700 V	52	2
125 A	20 618 32	✓	690/700 V	52	2
160 A	20 618 32	✓	690/700 V	52	2
200 A	20 618 32	✓	690/700 V	52	2
250 A	20 618 32	✓	690/700 V	52	2
315 A	20 618 32	✓	690/700 V	52	2
350 A	20 618 32	✓	690/700 V	52	2
400 A	20 618 32	✓	690/700 V	52	2
450 A	20 618 32	✓	690/700 V	52	2
500 A	20 618 32	✓	690/700 V	52	2
630 A	20 618 32	✓	690/700 V	52	2
700 A	20 618 32	✓	690/700 V	52	2
800 A	20 618 32	✓	690/700 V	52	2
900 A	20 618 32		600 V	52	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
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FUSES FOR SEMICONDUCTOR PROTECTION

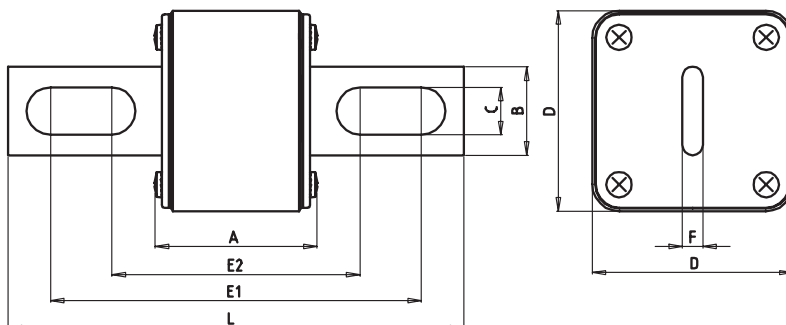
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 629 31	✓	690/700 V	60	2	
450 A	20 629 31	✓	690/700 V	60	2	
500 A	20 629 31	✓	690/700 V	60	2	
550 A	20 629 31	✓	690/700 V	60	2	
630 A	20 629 31	✓	690/700 V	60	2	
700 A	20 629 31	✓	690/700 V	60	2	
800 A	20 629 31	✓	690/700 V	60	2	
900 A	20 629 31	✓	690/700 V	60	2	
1000 A	20 629 31	✓	690/700 V	60	2	
1100 A	20 629 31	✓	600 V	60	2	
1250 A	20 629 31	✓	600 V	60	2	



A	1.87" (47.5 mm)
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D	2.36" (60 mm)
E1	5.04" (128 mm)
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FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

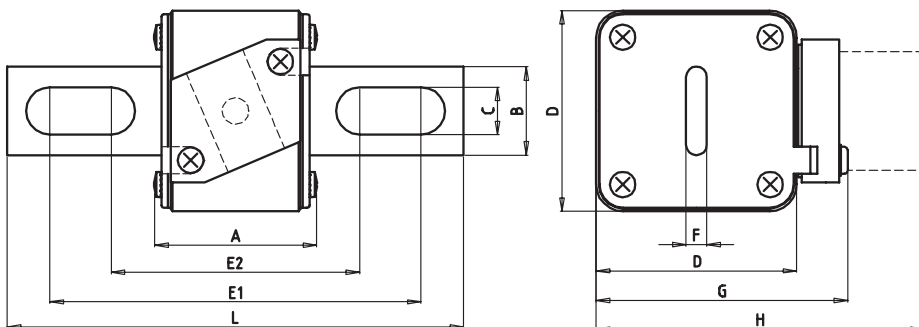
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 628 32	✓	690/700 V	60	2
450 A	20 628 32	✓	690/700 V	60	2
500 A	20 628 32	✓	690/700 V	60	2
550 A	20 628 32	✓	690/700 V	60	2
630 A	20 628 32	✓	690/700 V	60	2
700 A	20 628 32	✓	690/700 V	60	2
800 A	20 628 32	✓	690/700 V	60	2
900 A	20 628 32	✓	690/700 V	60	2
1000 A	20 628 32	✓	690/700 V	60	2
1100 A	20 628 32	✓	600 V	60	2
1250 A	20 628 32	✓	600 V	60	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.36" (60 mm)
E1	5.04" (128 mm)
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L	6.06" (154 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

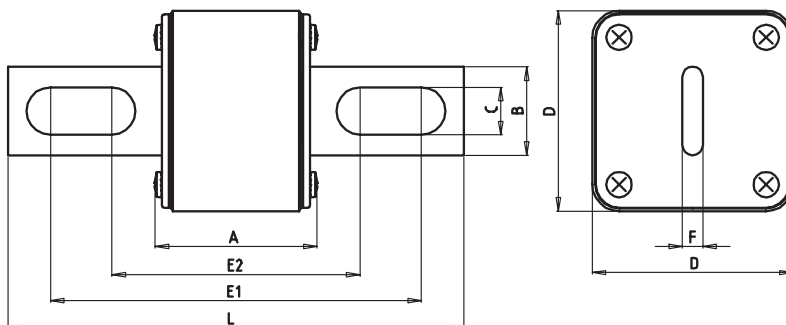
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 639 31	✓	690/700 V	80	2	
550 A	20 639 31	✓	690/700 V	80	2	
630 A	20 639 31	✓	690/700 V	80	2	
700 A	20 639 31	✓	690/700 V	80	2	
800 A	20 639 31	✓	690/700 V	80	2	
900 A	20 639 31	✓	690/700 V	80	2	
1000 A	20 639 31	✓	690/700 V	80	2	
1100 A	20 639 31	✓	690/700 V	80	2	
1250 A	20 639 31	✓	690/700 V	80	2	
1400 A	20 639 31	✓	690/700 V	80	2	
1500 A	20 639 31		600 V	80	2	
1600 A	20 639 31		600 V	80	2	



A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	5.04" (128 mm)
E2	3.70" (94 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

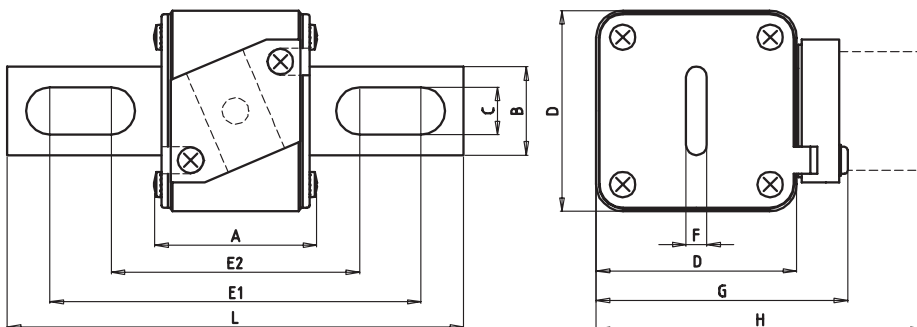
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
500 A	20 638 32	✓	690/700 V	80	2
550 A	20 638 32	✓	690/700 V	80	2
630 A	20 638 32	✓	690/700 V	80	2
700 A	20 638 32	✓	690/700 V	80	2
800 A	20 638 32	✓	690/700 V	80	2
900 A	20 638 32	✓	690/700 V	80	2
1000 A	20 638 32	✓	690/700 V	80	2
1100 A	20 638 32	✓	690/700 V	80	2
1250 A	20 638 32	✓	690/700 V	80	2
1400 A	20 638 32	✓	690/700 V	80	2
1500 A	20 638 32		600 V	80	2
1600 A	20 638 32		600 V	80	2

A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	5.04" (128 mm)
E2	3.70" (94 mm)
F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	6.06" (154 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

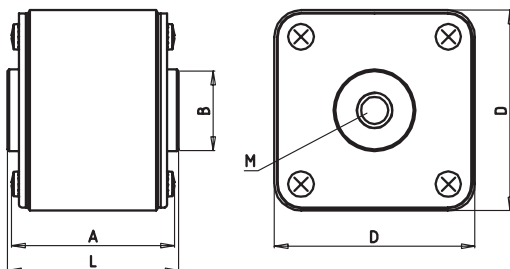
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
63 A	20 663 31	✓	690/700 V	50	3	
80 A	20 663 31	✓	690/700 V	50	3	
100 A	20 663 31	✓	690/700 V	50	3	
125 A	20 663 31	✓	690/700 V	50	3	
160 A	20 663 31	✓	690/700 V	50	3	
200 A	20 663 31	✓	690/700 V	50	3	
250 A	20 663 31	✓	690/700 V	50	3	
315 A	20 663 31	✓	690/700 V	50	3	
350 A	20 663 31	✓	690/700 V	50	3	
400 A	20 663 31	✓	690/700 V	50	3	
450 A	20 663 31	✓	690/700 V	50	3	
500 A	20 663 31	✓	690/700 V	50	3	
630 A	20 663 31	✓	690/700 V	50	3	
700 A	20 663 31	✓	690/700 V	50	3	
800 A	20 663 31	✓	690/700 V	50	3	
900 A	20 663 31		600 V	50	3	



A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
L	2.00" (51 mm)
M	5/16"

FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB



Size
1

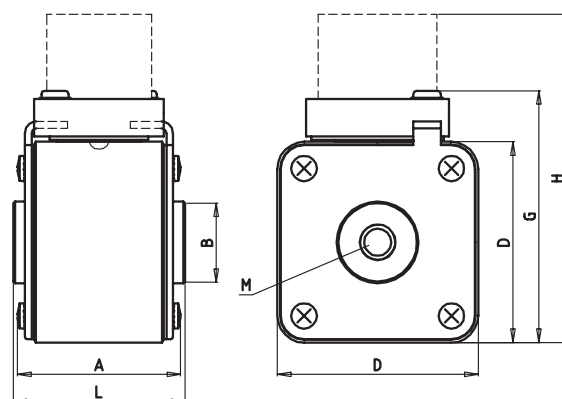
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 664 32	✓	690/700 V	50	3
80 A	20 664 32	✓	690/700 V	50	3
100 A	20 664 32	✓	690/700 V	50	3
125 A	20 664 32	✓	690/700 V	50	3
160 A	20 664 32	✓	690/700 V	50	3
200 A	20 664 32	✓	690/700 V	50	3
250 A	20 664 32	✓	690/700 V	50	3
315 A	20 664 32	✓	690/700 V	50	3
350 A	20 664 32	✓	690/700 V	50	3
400 A	20 664 32	✓	690/700 V	50	3
450 A	20 664 32	✓	690/700 V	50	3
500 A	20 664 32	✓	690/700 V	50	3
630 A	20 664 32	✓	690/700 V	50	3
700 A	20 664 32	✓	690/700 V	50	3
800 A	20 664 32	✓	690/700 V	50	3
900 A	20 664 32		600 V	50	3

A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	2.00" (51 mm)
M	5/16"





FUSES FOR SEMICONDUCTOR PROTECTION

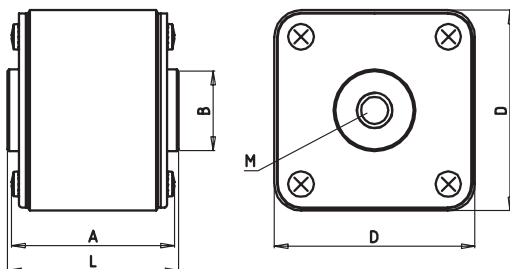
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 673 31	✓	690/700 V	50	3	
450 A	20 673 31	✓	690/700 V	50	3	
500 A	20 673 31	✓	690/700 V	50	3	
550 A	20 673 31	✓	690/700 V	50	3	
630 A	20 673 31	✓	690/700 V	50	3	
700 A	20 673 31	✓	690/700 V	50	3	
800 A	20 673 31	✓	690/700 V	50	3	
900 A	20 673 31	✓	690/700 V	50	3	
1000 A	20 673 31	✓	690/700 V	50	3	
1100 A	20 673 31	✓	600 V	50	3	
1250 A	20 673 31	✓	600 V	50	3	



A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
L	2.00" (51 mm)
M	3/8"



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

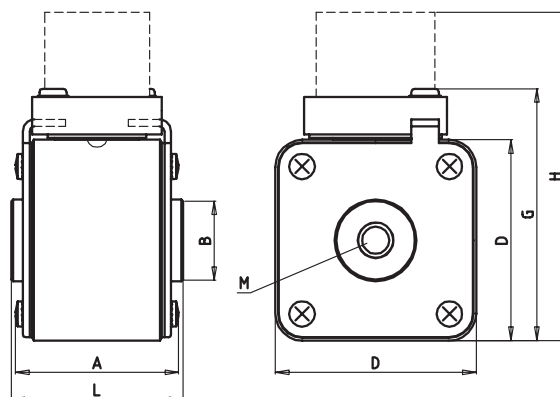
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 674 32	✓	690/700 V	50	3
450 A	20 674 32	✓	690/700 V	50	3
500 A	20 674 32	✓	690/700 V	50	3
550 A	20 674 32	✓	690/700 V	50	3
630 A	20 674 32	✓	690/700 V	50	3
700 A	20 674 32	✓	690/700 V	50	3
800 A	20 674 32	✓	690/700 V	50	3
900 A	20 674 32	✓	690/700 V	50	3
1000 A	20 674 32	✓	690/700 V	50	3
1100 A	20 674 32	✓	600 V	50	3
1250 A	20 674 32	✓	600 V	50	3

A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	2.00" (51 mm)
M	3/8"





FUSES FOR SEMICONDUCTOR PROTECTION

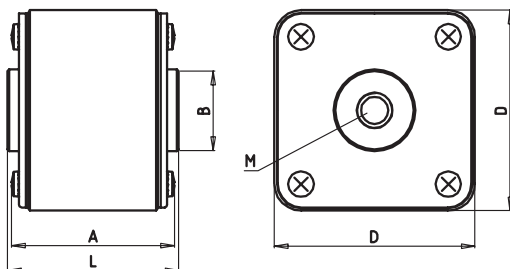
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 683 31	✓	690/700 V	50	3	
550 A	20 683 31	✓	690/700 V	50	3	
630 A	20 683 31	✓	690/700 V	50	3	
700 A	20 683 31	✓	690/700 V	50	3	
800 A	20 683 31	✓	690/700 V	50	3	
900 A	20 683 31	✓	690/700 V	50	3	
1000 A	20 683 31	✓	690/700 V	50	3	
1100 A	20 683 31	✓	690/700 V	50	3	
1250 A	20 683 31	✓	690/700 V	50	3	
1400 A	20 683 31	✓	690/700 V	50	3	
1500 A	20 683 31		600 V	50	3	
1600 A	20 683 31		600 V	50	3	



A	1.93" (49 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
L	2.00" (51 mm)
M	1/2"



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

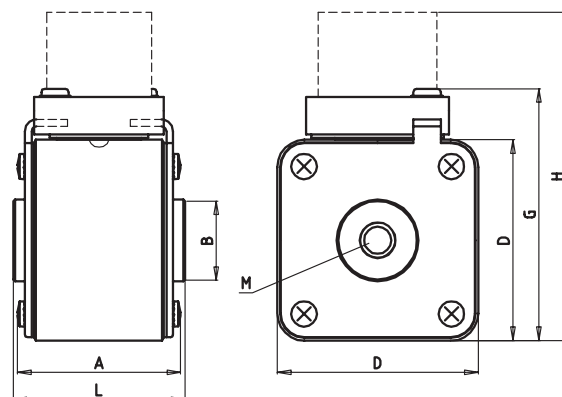
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 684 32	✓	690/700 V	50	3	
550 A	20 684 32	✓	690/700 V	50	3	
630 A	20 684 32	✓	690/700 V	50	3	
700 A	20 684 32	✓	690/700 V	50	3	
800 A	20 684 32	✓	690/700 V	50	3	
900 A	20 684 32	✓	690/700 V	50	3	
1000 A	20 684 32	✓	690/700 V	50	3	
1100 A	20 684 32	✓	690/700 V	50	3	
1250 A	20 684 32	✓	690/700 V	50	3	
1400 A	20 684 32	✓	690/700 V	50	3	
1500 A	20 684 32		600 V	50	3	
1600 A	20 684 32		600 V	50	3	

A	1.93" (49 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	2.00" (51 mm)
M	1/2"





FUSES FOR SEMICONDUCTOR PROTECTION

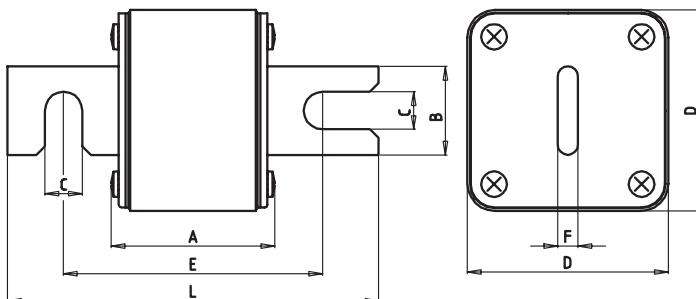
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 610 31	✓	690/700 V	51	2
80 A	20 610 31	✓	690/700 V	51	2
100 A	20 610 31	✓	690/700 V	51	2
125 A	20 610 31	✓	690/700 V	51	2
160 A	20 610 31	✓	690/700 V	51	2
200 A	20 610 31	✓	690/700 V	51	2
250 A	20 610 31	✓	690/700 V	51	2
315 A	20 610 31	✓	690/700 V	51	2
350 A	20 610 31	✓	690/700 V	51	2
400 A	20 610 31	✓	690/700 V	51	2
450 A	20 610 31	✓	690/700 V	51	2
500 A	20 610 31	✓	690/700 V	51	2
630 A	20 610 31	✓	690/700 V	51	2
700 A	20 610 31	✓	690/700 V	51	2
800 A	20 610 31	✓	690/700 V	51	2
900 A	20 610 31		600 V	51	2



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.00" (51 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
L	4.29" (109 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

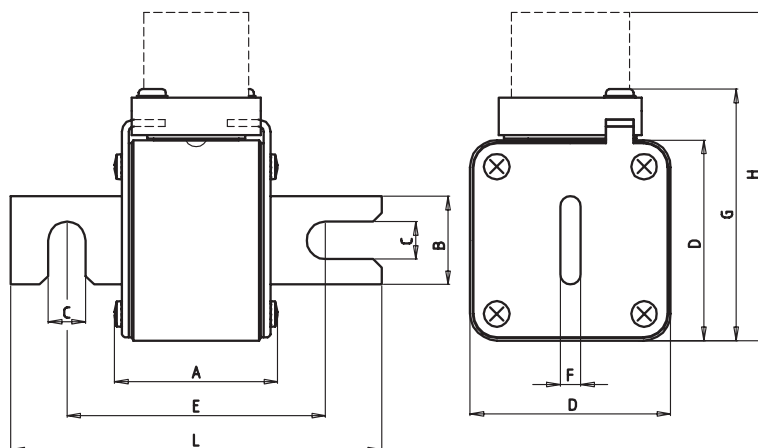
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 612 32	✓	690/700 V	51	2
80 A	20 612 32	✓	690/700 V	51	2
100 A	20 612 32	✓	690/700 V	51	2
125 A	20 612 32	✓	690/700 V	51	2
160 A	20 612 32	✓	690/700 V	51	2
200 A	20 612 32	✓	690/700 V	51	2
250 A	20 612 32	✓	690/700 V	51	2
315 A	20 612 32	✓	690/700 V	51	2
350 A	20 612 32	✓	690/700 V	51	2
400 A	20 612 32	✓	690/700 V	51	2
450 A	20 612 32	✓	690/700 V	51	2
500 A	20 612 32	✓	690/700 V	51	2
630 A	20 612 32	✓	690/700 V	51	2
700 A	20 612 32	✓	690/700 V	51	2
800 A	20 612 32	✓	690/700 V	51	2
900 A	20 612 32		600 V	51	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.01" (51 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	4.30" (109 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

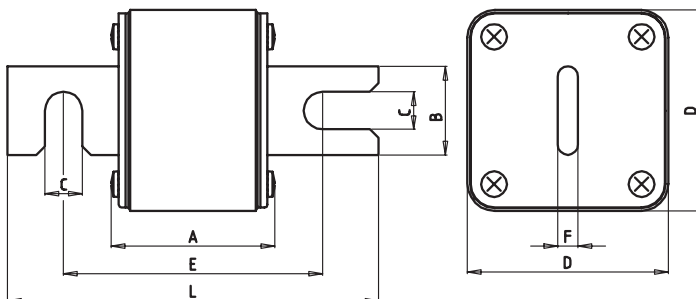
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 620 31	✓	690/700 V	51	2	
450 A	20 620 31	✓	690/700 V	51	2	
500 A	20 620 31	✓	690/700 V	51	2	
550 A	20 620 31	✓	690/700 V	51	2	
630 A	20 620 31	✓	690/700 V	51	2	
700 A	20 620 31	✓	690/700 V	51	2	
800 A	20 620 31	✓	690/700 V	51	2	
900 A	20 620 31	✓	690/700 V	51	2	
1000 A	20 620 31	✓	690/700 V	51	2	
1100 A	20 620 31	✓	600 V	51	2	
1250 A	20 620 31		600 V	51	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
L	4.30" (109 mm)

FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB



Size
2

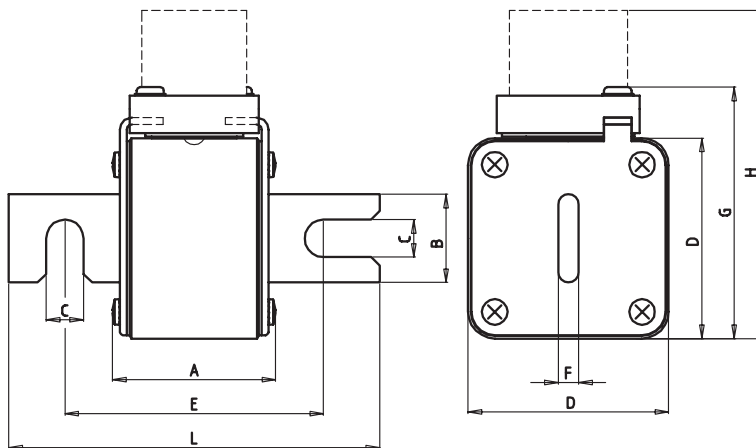
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 622 32	✓	690/700 V	51	2
450 A	20 622 32	✓	690/700 V	51	2
500 A	20 622 32	✓	690/700 V	51	2
550 A	20 622 32	✓	690/700 V	51	2
630 A	20 622 32	✓	690/700 V	51	2
700 A	20 622 32	✓	690/700 V	51	2
800 A	20 622 32	✓	690/700 V	51	2
900 A	20 622 32	✓	690/700 V	51	2
1000 A	20 622 32	✓	690/700 V	51	2
1100 A	20 622 32	✓	600 V	51	2
1250 A	20 622 32	✓	600 V	51	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	4.30" (109 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

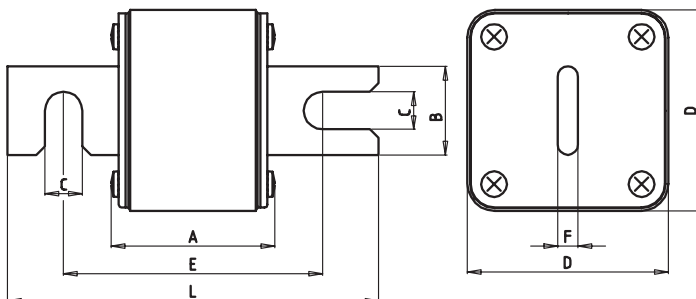
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 630 31	✓	690/700 V	60	2	
550 A	20 630 31	✓	690/700 V	60	2	
630 A	20 630 31	✓	690/700 V	60	2	
700 A	20 630 31	✓	690/700 V	60	2	
800 A	20 630 31	✓	690/700 V	60	2	
900 A	20 630 31	✓	690/700 V	60	2	
1000 A	20 630 31	✓	690/700 V	60	2	
1100 A	20 630 31	✓	690/700 V	60	2	
1250 A	20 630 31	✓	690/700 V	60	2	
1400 A	20 630 31	✓	690/700 V	60	2	
1500 A	20 630 31		600 V	60	2	
1600 A	20 630 31		600 V	60	2	



A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
L	4.30" (109 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

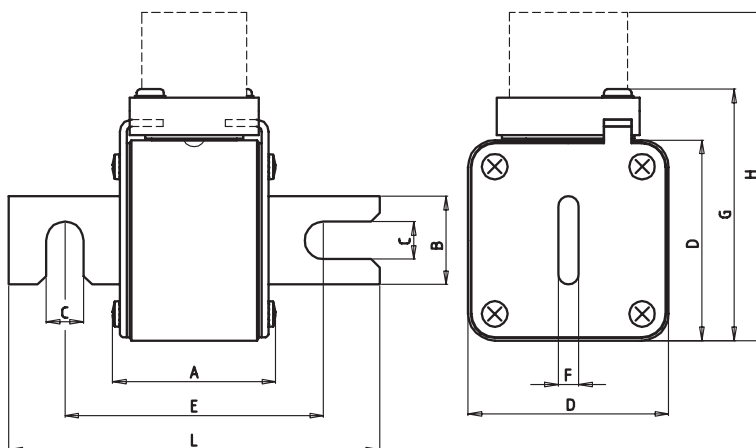
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / 80 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
500 A	20 632 32	✓	690/700 V	60	2
550 A	20 632 32	✓	690/700 V	60	2
630 A	20 632 32	✓	690/700 V	60	2
700 A	20 632 32	✓	690/700 V	60	2
800 A	20 632 32	✓	690/700 V	60	2
900 A	20 632 32	✓	690/700 V	60	2
1000 A	20 632 32	✓	690/700 V	60	2
1100 A	20 632 32	✓	690/700 V	60	2
1250 A	20 632 32	✓	690/700 V	60	2
1400 A	20 632 32	✓	690/700 V	60	2
1500 A	20 632 32		600 V	60	2
1600 A	20 632 32		600 V	60	2

A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	3.00" (76 mm)
F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	4.30" (109 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

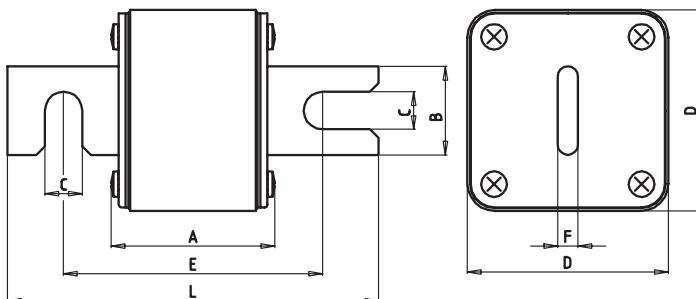
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
63 A	20 613 31	✓	690/700 V	51	2	
80 A	20 613 31	✓	690/700 V	51	2	
100 A	20 613 31	✓	690/700 V	51	2	
125 A	20 613 31	✓	690/700 V	51	2	
160 A	20 613 31	✓	690/700 V	51	2	
200 A	20 613 31	✓	690/700 V	51	2	
250 A	20 613 31	✓	690/700 V	51	2	
315 A	20 613 31	✓	690/700 V	51	2	
350 A	20 613 31	✓	690/700 V	51	2	
400 A	20 613 31	✓	690/700 V	51	2	
450 A	20 613 31	✓	690/700 V	51	2	
500 A	20 613 31	✓	690/700 V	51	2	
630 A	20 613 31	✓	690/700 V	51	2	
700 A	20 613 31	✓	690/700 V	51	2	
800 A	20 613 31	✓	690/700 V	51	2	
900 A	20 613 31		600 V	51	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.00" (51 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

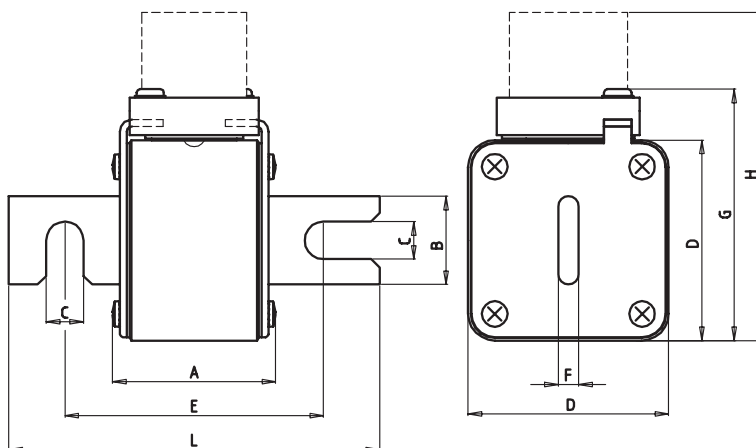
Rated voltage
AC 600-690/700 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 615 32	✓	690/700 V	51	2
80 A	20 615 32	✓	690/700 V	51	2
100 A	20 615 32	✓	690/700 V	51	2
125 A	20 615 32	✓	690/700 V	51	2
160 A	20 615 32	✓	690/700 V	51	2
200 A	20 615 32	✓	690/700 V	51	2
250 A	20 615 32	✓	690/700 V	51	2
315 A	20 615 32	✓	690/700 V	51	2
350 A	20 615 32	✓	690/700 V	51	2
400 A	20 615 32	✓	690/700 V	51	2
450 A	20 615 32	✓	690/700 V	51	2
500 A	20 615 32	✓	690/700 V	51	2
630 A	20 615 32	✓	690/700 V	51	2
700 A	20 615 32	✓	690/700 V	51	2
800 A	20 615 32	✓	690/700 V	51	2
900 A	20 615 32		600 V	51	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.00" (51 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

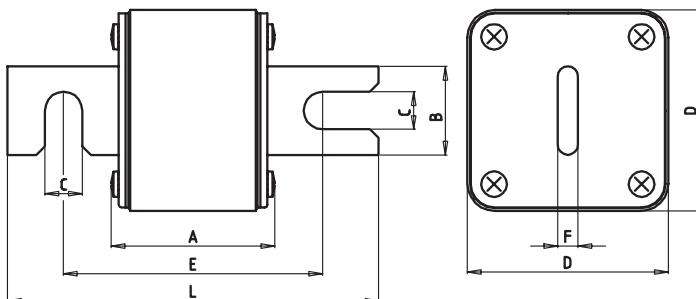
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 623 31	✓	690/700 V	51	2	
450 A	20 623 31	✓	690/700 V	51	2	
500 A	20 623 31	✓	690/700 V	51	2	
550 A	20 623 31	✓	690/700 V	51	2	
630 A	20 623 31	✓	690/700 V	51	2	
700 A	20 623 31	✓	690/700 V	51	2	
800 A	20 623 31	✓	690/700 V	51	2	
900 A	20 623 31	✓	690/700 V	51	2	
1000 A	20 623 31	✓	690/700 V	51	2	
1100 A	20 623 31	✓	600 V	51	2	
1250 A	20 623 31		600 V	51	2	



A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

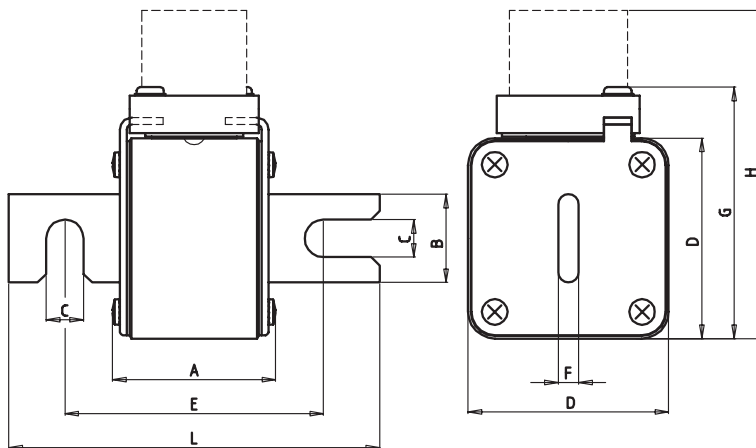
Rated voltage
AC 600-690/700 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 625 32	✓	690/700 V	51	2
450 A	20 625 32	✓	690/700 V	51	2
500 A	20 625 32	✓	690/700 V	51	2
550 A	20 625 32	✓	690/700 V	51	2
630 A	20 625 32	✓	690/700 V	51	2
700 A	20 625 32	✓	690/700 V	51	2
800 A	20 625 32	✓	690/700 V	51	2
900 A	20 625 32	✓	690/700 V	51	2
1000 A	20 625 32	✓	690/700 V	51	2
1100 A	20 625 32	✓	600 V	51	2
1250 A	20 625 32	✓	600 V	51	2

A	1.87" (47.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

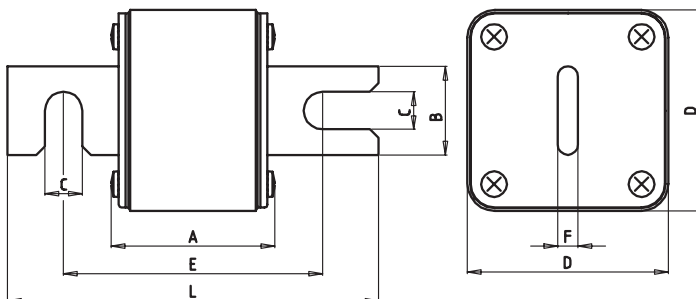
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 633 31	✓	690/700 V	60	2	
550 A	20 633 31	✓	690/700 V	60	2	
630 A	20 633 31	✓	690/700 V	60	2	
700 A	20 633 31	✓	690/700 V	60	2	
800 A	20 633 31	✓	690/700 V	60	2	
900 A	20 633 31	✓	690/700 V	60	2	
1000 A	20 633 31	✓	690/700 V	60	2	
1100 A	20 633 31	✓	690/700 V	60	2	
1250 A	20 633 31	✓	690/700 V	60	2	
1400 A	20 633 31	✓	690/700 V	60	2	
1500 A	20 633 31		600 V	60	2	
1600 A	20 633 31		600 V	60	2	



A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.28" (134 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

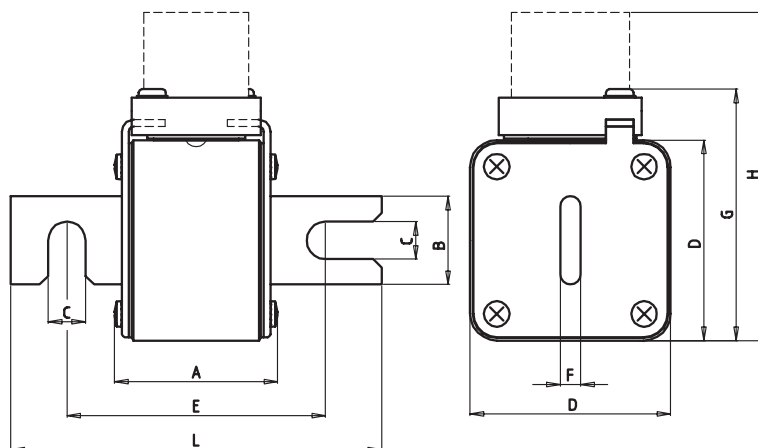
Rated voltage
AC 600-690/700 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 635 32	✓	690/700 V	60	2	
550 A	20 635 32	✓	690/700 V	60	2	
630 A	20 635 32	✓	690/700 V	60	2	
700 A	20 635 32	✓	690/700 V	60	2	
800 A	20 635 32	✓	690/700 V	60	2	
900 A	20 635 32	✓	690/700 V	60	2	
1000 A	20 635 32	✓	690/700 V	60	2	
1100 A	20 635 32	✓	690/700 V	60	2	
1250 A	20 635 32	✓	690/700 V	60	2	
1400 A	20 635 32	✓	690/700 V	60	2	
1500 A	20 635 32		600 V	60	2	
1600 A	20 635 32		600 V	60	2	

A	1.93" (49 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	5.28" (134 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

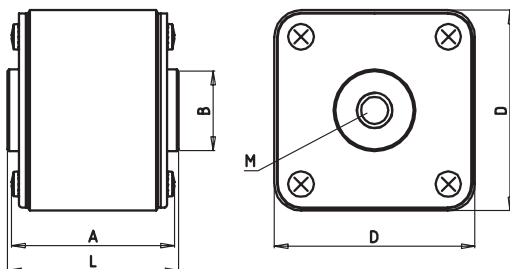
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
63 A	20 660 31	✓	690/700 V	50	3	
80 A	20 660 31	✓	690/700 V	50	3	
100 A	20 660 31	✓	690/700 V	50	3	
125 A	20 660 31	✓	690/700 V	50	3	
160 A	20 660 31	✓	690/700 V	50	3	
200 A	20 660 31	✓	690/700 V	50	3	
250 A	20 660 31	✓	690/700 V	50	3	
315 A	20 660 31	✓	690/700 V	50	3	
350 A	20 660 31	✓	690/700 V	50	3	
400 A	20 660 31	✓	690/700 V	50	3	
450 A	20 660 31	✓	690/700 V	50	3	
500 A	20 660 31	✓	690/700 V	50	3	
630 A	20 660 31	✓	690/700 V	50	3	
700 A	20 660 31	✓	690/700 V	50	3	
800 A	20 660 31	✓	690/700 V	50	3	
900 A	20 660 31		600 V	50	3	



A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
L	2.00" (51 mm)
M	M8

FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB



Size
1

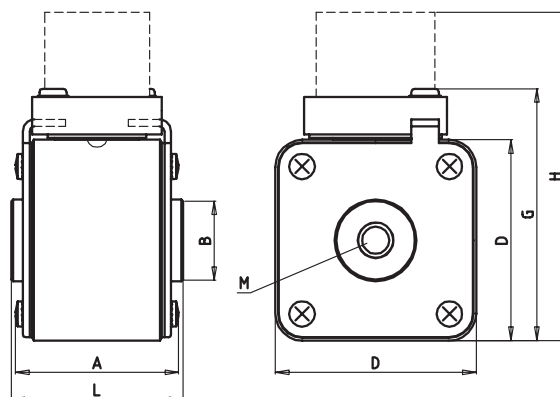
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
63 A	20 661 32	✓	690/700 V	50	3
80 A	20 661 32	✓	690/700 V	50	3
100 A	20 661 32	✓	690/700 V	50	3
125 A	20 661 32	✓	690/700 V	50	3
160 A	20 661 32	✓	690/700 V	50	3
200 A	20 661 32	✓	690/700 V	50	3
250 A	20 661 32	✓	690/700 V	50	3
315 A	20 661 32	✓	690/700 V	50	3
350 A	20 661 32	✓	690/700 V	50	3
400 A	20 661 32	✓	690/700 V	50	3
450 A	20 661 32	✓	690/700 V	50	3
500 A	20 661 32	✓	690/700 V	50	3
630 A	20 661 32	✓	690/700 V	50	3
700 A	20 661 32	✓	690/700 V	50	3
800 A	20 661 32	✓	690/700 V	50	3
900 A	20 661 32		600 V	50	3

A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	2.00" (51 mm)
M	M8





FUSES FOR SEMICONDUCTOR PROTECTION

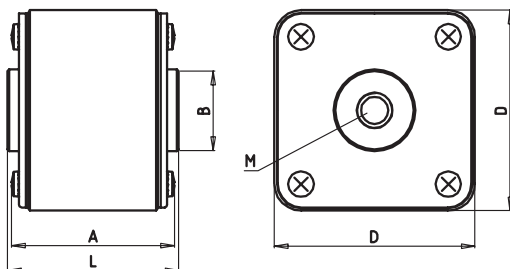
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
400 A	20 670 31	✓	690/700 V	50	3	
450 A	20 670 31	✓	690/700 V	50	3	
500 A	20 670 31	✓	690/700 V	50	3	
550 A	20 670 31	✓	690/700 V	50	3	
630 A	20 670 31	✓	690/700 V	50	3	
700 A	20 670 31	✓	690/700 V	50	3	
800 A	20 670 31	✓	690/700 V	50	3	
900 A	20 670 31	✓	690/700 V	50	3	
1000 A	20 670 31	✓	690/700 V	50	3	
1100 A	20 670 31	✓	600 V	50	3	
1250 A	20 670 31	✓	600 V	50	3	



A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
L	2.00" (51 mm)
M	M10



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

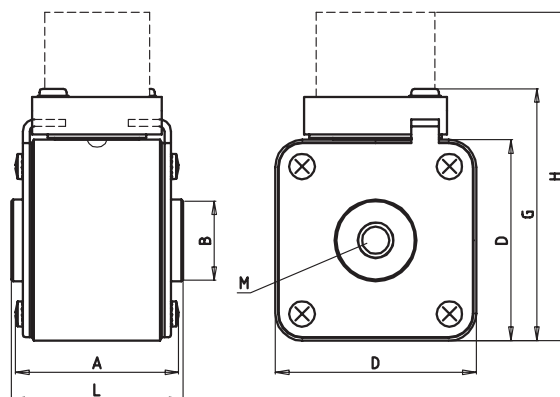
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
400 A	20 671 32	✓	690/700 V	50	3
450 A	20 671 32	✓	690/700 V	50	3
500 A	20 671 32	✓	690/700 V	50	3
550 A	20 671 32	✓	690/700 V	50	3
630 A	20 671 32	✓	690/700 V	50	3
700 A	20 671 32	✓	690/700 V	50	3
800 A	20 671 32	✓	690/700 V	50	3
900 A	20 671 32	✓	690/700 V	50	3
1000 A	20 671 32	✓	690/700 V	50	3
1100 A	20 671 32	✓	600 V	50	3
1250 A	20 671 32	✓	600 V	50	3

A	1.87" (47.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	2.00" (51 mm)
M	M10





FUSES FOR SEMICONDUCTOR PROTECTION

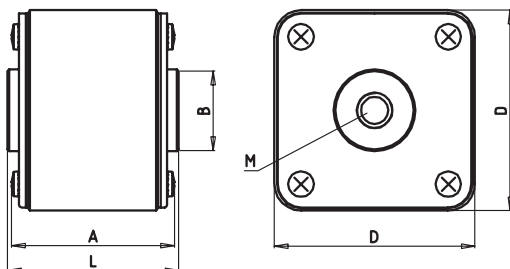
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 600-690/700 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 680 31	✓	690/700 V	50	3	
550 A	20 680 31	✓	690/700 V	50	3	
630 A	20 680 31	✓	690/700 V	50	3	
700 A	20 680 31	✓	690/700 V	50	3	
800 A	20 680 31	✓	690/700 V	50	3	
900 A	20 680 31	✓	690/700 V	50	3	
1000 A	20 680 31	✓	690/700 V	50	3	
1100 A	20 680 31	✓	690/700 V	50	3	
1250 A	20 680 31	✓	690/700 V	50	3	
1400 A	20 680 31	✓	690/700 V	50	3	
1500 A	20 680 31		600 V	50	3	
1600 A	20 680 31		600 V	50	3	



A	1.93" (49 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
L	2.00" (51 mm)
M	M12



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

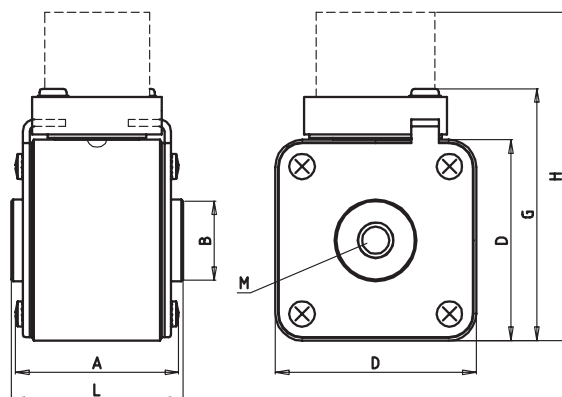
Rated voltage
AC 600-690/700 V

Microswitch
fitting

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
500 A	20 681 32	✓	690/700 V	50	3	
550 A	20 681 32	✓	690/700 V	50	3	
630 A	20 681 32	✓	690/700 V	50	3	
700 A	20 681 32	✓	690/700 V	50	3	
800 A	20 681 32	✓	690/700 V	50	3	
900 A	20 681 32	✓	690/700 V	50	3	
1000 A	20 681 32	✓	690/700 V	50	3	
1100 A	20 681 32	✓	690/700 V	50	3	
1250 A	20 681 32	✓	690/700 V	50	3	
1400 A	20 681 32	✓	690/700 V	50	3	
1500 A	20 681 32		600 V	50	3	
1600 A	20 681 32		600 V	50	3	

A	1.93" (49 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	2.00" (51 mm)
M	M12





FUSES FOR SEMICONDUCTOR PROTECTION

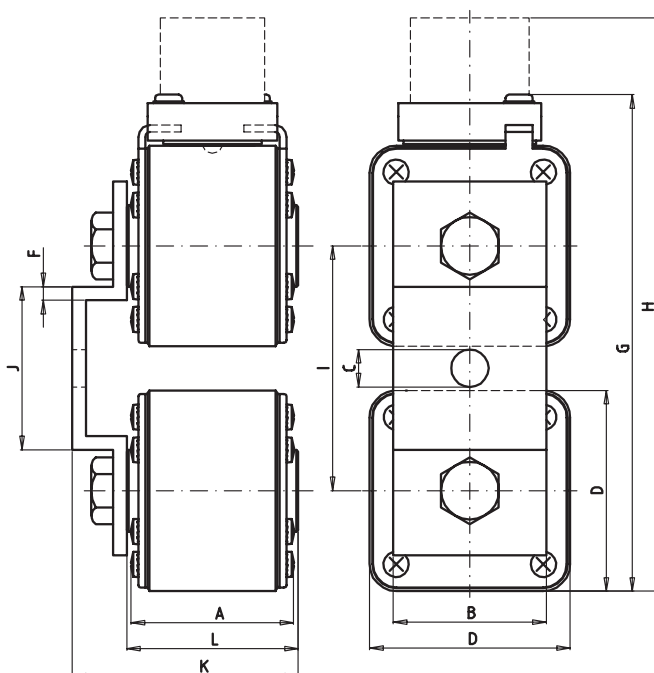
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 690/700 V

Standard
IEC 60269-4 · DIN VDE 0636 Part 40 · UL 248-13

Rated current	Part No. without Indicator	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
800 A	20 678 32	✓	690/700 V	102	1	
1000 A	20 678 32	✓	690/700 V	102	1	
1250 A	20 678 32	✓	690/700 V	102	1	
1400 A	20 678 32	✓	690/700 V	102	1	



A	1.87" (47,5 mm)
B	1.77" (45 mm)
C	0.43" (11 mm)
D	2.32" (59 mm)
F	0.16" (4 mm)
G	5.83" (148 mm)
H	6.60" (168 mm)
I	2.83" (72 mm)
J	1.90" (48 mm)
K	2.64" (67 mm)
L	2.00" (51 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

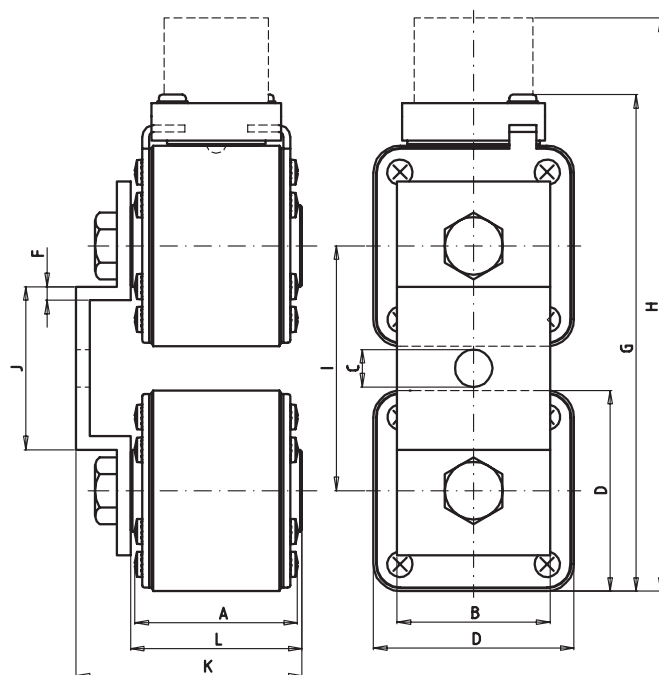
Size
3

Rated voltage
AC 690/700 V

Standard
IEC 60269-4 · DIN VDE 0636 Part 40 · UL 248-13

Rated current	Part No. without Indicator	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
1250 A	20 688 32	✓	690/700 V	120	1
1400 A	20 688 32	✓	690/700 V	120	1
1600 A	20 688 32	✓	690/700 V	120	1

A	1.93" (49 mm)
B	1.97" (50 mm)
C	0.50" (13 mm)
D	2.87" (73 mm)
F	0.16" (4 mm)
G	6.77" (172 mm)
H	7.94" (195 mm)
I	3.39" (86 mm)
J	2.13" (54 mm)
K	2.64" (67 mm)
L	2.00" (51 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

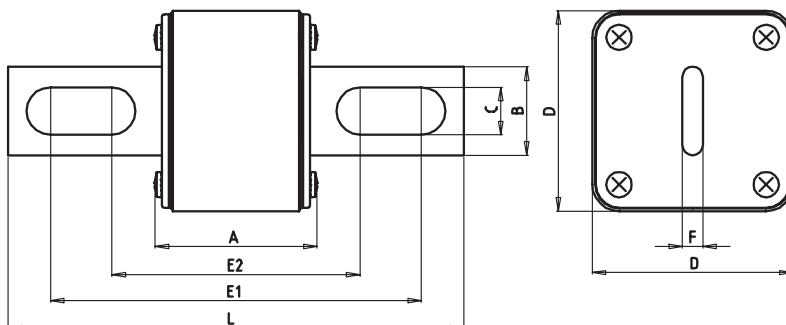
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 1100-1250/1300 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
160 A	20 719 31	✓	1250/1300 V	54	2	
200 A	20 719 31	✓	1250/1300 V	54	2	
250 A	20 719 31	✓	1250/1300 V	54	2	
315 A	20 719 31	✓	1250/1300 V	54	2	
350 A	20 719 31	✓	1250/1300 V	54	2	
400 A	20 719 31	✓	1250/1300 V	54	2	
450 A	20 719 31	✓	1250/1300 V	54	2	
500 A	20 719 31	✓	1100/1200 V	54	2	
550 A	20 719 31	✓	1100/1200 V	54	2	
630 A	20 719 31	✓	1100/1200 V	54	2	



A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.00" (51 mm)
E1	5.20" (132 mm)
E2	3.78" (96 mm)
F	0.24" (6 mm)
L	6.18" (157 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

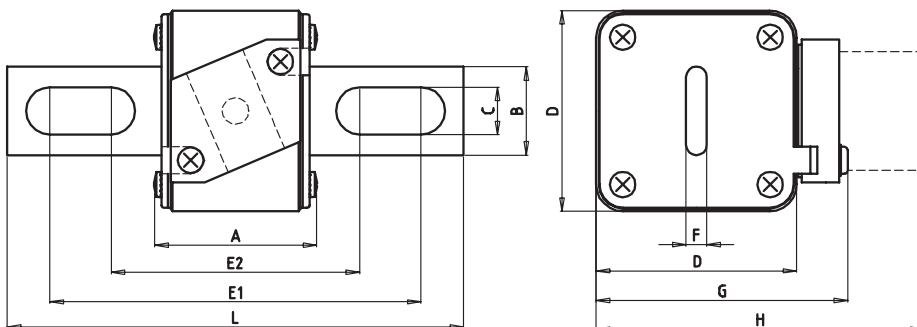
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
160 A	20 718 32	✓	1250/1300 V	54	2	
200 A	20 718 32	✓	1250/1300 V	54	2	
250 A	20 718 32	✓	1250/1300 V	54	2	
315 A	20 718 32	✓	1250/1300 V	54	2	
350 A	20 718 32	✓	1250/1300 V	54	2	
400 A	20 718 32	✓	1250/1300 V	54	2	
450 A	20 718 32	✓	1250/1300 V	54	2	
500 A	20 718 32	✓	1100/1200 V	54	2	
550 A	20 718 32	✓	1100/1200 V	54	2	
630 A	20 718 32	✓	1100/1200 V	54	2	

A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.00" (51 mm)
E1	5.20" (132 mm)
E2	3.78" (96 mm)
F	0.24" (6 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	6.18" (157 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

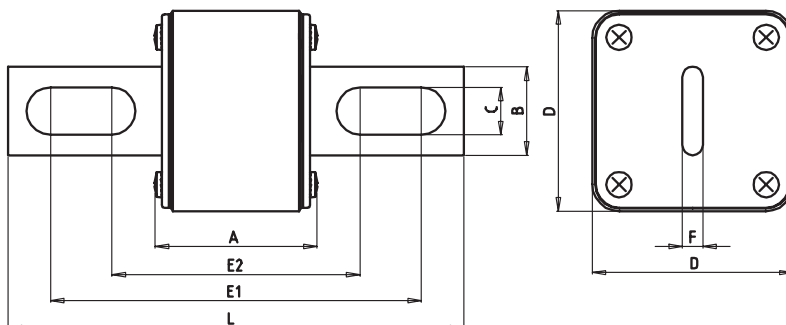
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 1100-1250/1300 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
250 A	20 729 31	✓	1250/1300 V	75	2	
280 A	20 729 31	✓	1250/1300 V	75	2	
315 A	20 729 31	✓	1250/1300 V	75	2	
350 A	20 729 31	✓	1250/1300 V	75	2	
400 A	20 729 31	✓	1250/1300 V	75	2	
450 A	20 729 31	✓	1250/1300 V	75	2	
500 A	20 729 31	✓	1250/1300 V	75	2	
556 A	20 729 31	✓	1250/1300 V	75	2	
630 A	20 729 31	✓	1250/1300 V	75	2	
700 A	20 729 31	✓	1100/1200 V	75	2	
800 A	20 729 31	✓	1100 V	75	2	



A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.36" (60 mm)
E1	5.20" (132 mm)
E2	3.78" (96 mm)
F	0.24" (6 mm)
L	6.18" (157 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

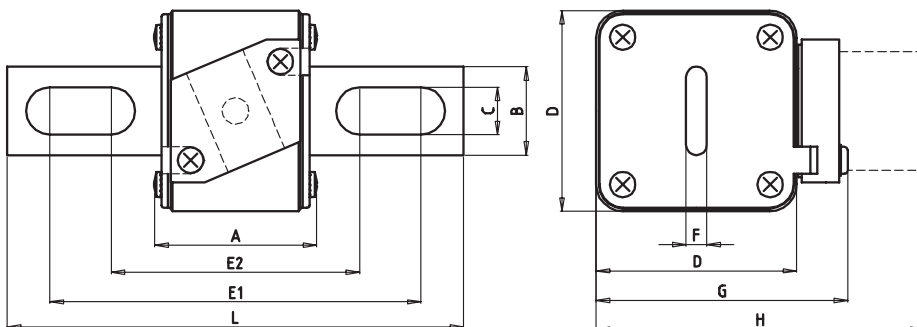
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
250 A	20 728 32	✓	1250/1300 V	75	2
280 A	20 728 32	✓	1250/1300 V	75	2
315 A	20 728 32	✓	1250/1300 V	75	2
350 A	20 728 32	✓	1250/1300 V	75	2
400 A	20 728 32	✓	1250/1300 V	75	2
450 A	20 728 32	✓	1250/1300 V	75	2
500 A	20 728 32	✓	1250/1300 V	75	2
556 A	20 728 32	✓	1250/1300 V	75	2
630 A	20 728 32	✓	1250/1300 V	75	2
700 A	20 728 32	✓	1100/1200 V	75	2
800 A	20 728 32	✓	1100 V	75	2

A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.55" (14 mm)
D	2.36" (60 mm)
E1	5.20" (132 mm)
E2	3.78" (96 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	6.18" (157 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

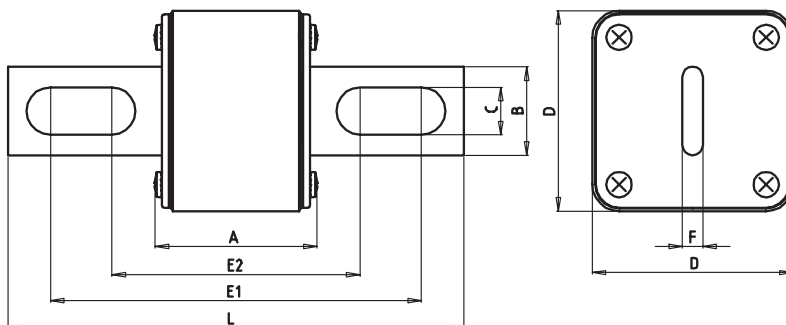
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 900-1250/1300 V

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
315 A	20 739 31	✓	1250/1300 V	104	2	
350 A	20 739 31	✓	1250/1300 V	104	2	
400 A	20 739 31	✓	1250/1300 V	104	2	
450 A	20 739 31	✓	1250/1300 V	104	2	
500 A	20 739 31	✓	1250/1300 V	104	2	
550 A	20 739 31	✓	1250/1300 V	104	2	
630 A	20 739 31	✓	1250/1300 V	104	2	
700 A	20 739 31	✓	1250/1300 V	104	2	
800 A	20 739 31	✓	1250/1300 V	104	2	
1000 A	20 739 31	✓	1000 V	104	2	
1100 A	20 739 31	✓	1000 V	104	2	
1250 A	20 739 31		900 V	104	2	
1400 A	20 739 31		900 V	104	2	



A	2.83" (72 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	5.20" (132 mm)
E2	3.86" (98 mm)
F	0.24" (6 mm)
L	6.22" (158 mm)

FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB



Size
3

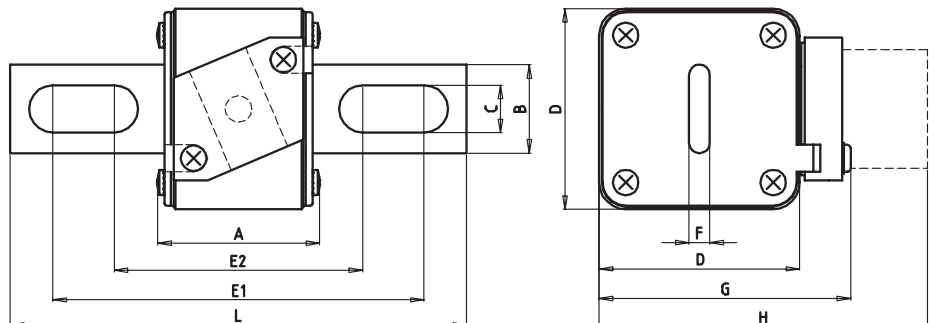
Rated voltage
AC 900-1250/1300 V

Microswitch
fitting

Standard
US-Type long

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
315 A	20 738 32	✓	1250/1300 V	104	2
350 A	20 738 32	✓	1250/1300 V	104	2
400 A	20 738 32	✓	1250/1300 V	104	2
450 A	20 738 32	✓	1250/1300 V	104	2
500 A	20 738 32	✓	1250/1300 V	104	2
550 A	20 738 32	✓	1250/1300 V	104	2
630 A	20 738 32	✓	1250/1300 V	104	2
700 A	20 738 32	✓	1250/1300 V	104	2
800 A	20 738 32	✓	1250/1300 V	104	2
1000 A	20 738 32	✓	1000 V	104	2
1100 A	20 738 32	✓	1000 V	104	2
1250 A	20 738 32		900 V	104	2
1400 A	20 738 32		900 V	104	2

A	2.83" (72 mm)
B	1.38" (35 mm)
C	0.63" (16 mm)
D	2.87" (73 mm)
E1	5.20" (132 mm)
E2	3.86" (98 mm)
F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	6.22" (158 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

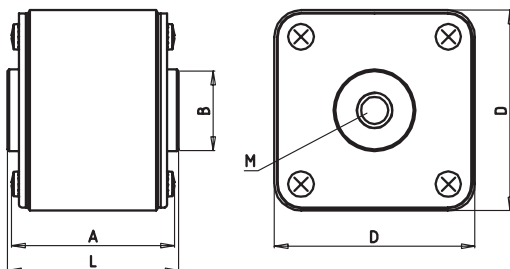
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 1100-1250/1300 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
50 A	20 763 31	✓	1250/1300 V	51	2	
63 A	20 763 31	✓	1250/1300 V	51	2	
80 A	20 763 31	✓	1250/1300 V	51	2	
100 A	20 763 31	✓	1250/1300 V	51	2	
125 A	20 763 31	✓	1250/1300 V	51	2	
160 A	20 763 31	✓	1250/1300 V	51	2	
200 A	20 763 31	✓	1250/1300 V	51	2	
250 A	20 763 31	✓	1250/1300 V	51	2	
315 A	20 763 31	✓	1250/1300 V	51	2	
350 A	20 763 31	✓	1250/1300 V	51	2	
400 A	20 763 31	✓	1250/1300 V	51	2	
450 A	20 763 31	✓	1250/1300 V	51	2	
500 A	20 763 31	✓	1100/1200 V	51	2	
550 A	20 763 31	✓	1100/1200 V	51	2	
630 A	20 763 31	✓	1100/1200 V	51	2	



A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
L	2.90" (73.5 mm)
M	5/16"



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

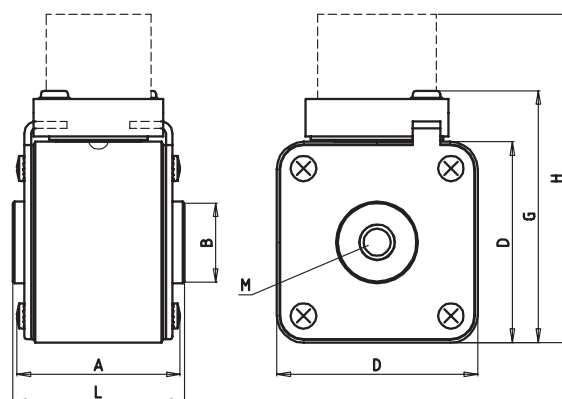
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
50 A	20 764 32	✓	1250/1300 V	51	2
63 A	20 764 32	✓	1250/1300 V	51	2
80 A	20 764 32	✓	1250/1300 V	51	2
100 A	20 764 32	✓	1250/1300 V	51	2
125 A	20 764 32	✓	1250/1300 V	51	2
160 A	20 764 32	✓	1250/1300 V	51	2
200 A	20 764 32	✓	1250/1300 V	51	2
250 A	20 764 32	✓	1250/1300 V	51	2
315 A	20 764 32	✓	1250/1300 V	51	2
350 A	20 764 32	✓	1250/1300 V	51	2
400 A	20 764 32	✓	1250/1300 V	51	2
450 A	20 764 32	✓	1250/1300 V	51	2
500 A	20 764 32	✓	1100/1200 V	51	2
550 A	20 764 32	✓	1100/1200 V	51	2
630 A	20 764 32	✓	1100/1200 V	51	2

A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	2.90" (73.5 mm)
M	5/16"





FUSES FOR SEMICONDUCTOR PROTECTION

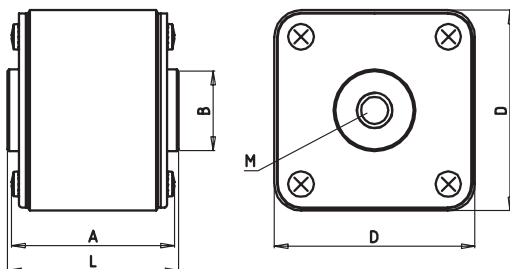
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 1100-1250/1300 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
250 A	20 773 31	✓	1250/1300 V	73	2	
280 A	20 773 31	✓	1250/1300 V	73	2	
315 A	20 773 31	✓	1250/1300 V	73	2	
350 A	20 773 31	✓	1250/1300 V	73	2	
400 A	20 773 31	✓	1250/1300 V	73	2	
450 A	20 773 31	✓	1250/1300 V	73	2	
500 A	20 773 31	✓	1250/1300 V	73	2	
556 A	20 773 31	✓	1250/1300 V	73	2	
630 A	20 773 31	✓	1250/1300 V	73	2	
700 A	20 773 31	✓	1100/1200 V	73	2	
800 A	20 773 31	✓	1100 V	73	2	



A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
L	2.90" (73.5 mm)
M	3/8"



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

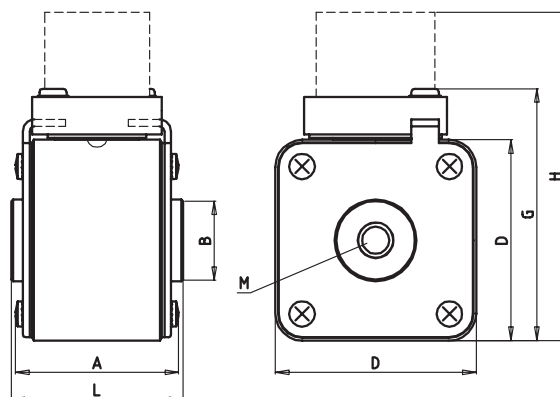
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
250 A	20 774 32	✓	1250/1300 V	73	2
280 A	20 774 32	✓	1250/1300 V	73	2
315 A	20 774 32	✓	1250/1300 V	73	2
350 A	20 774 32	✓	1250/1300 V	73	2
400 A	20 774 32	✓	1250/1300 V	73	2
450 A	20 774 32	✓	1250/1300 V	73	2
500 A	20 774 32	✓	1250/1300 V	73	2
556 A	20 774 32	✓	1250/1300 V	73	2
630 A	20 774 32	✓	1250/1300 V	73	2
700 A	20 774 32	✓	1100/1200 V	73	2
800 A	20 774 32	✓	1100 V	73	2

A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	2.90" (73.5 mm)
M	3/8"





FUSES FOR SEMICONDUCTOR PROTECTION

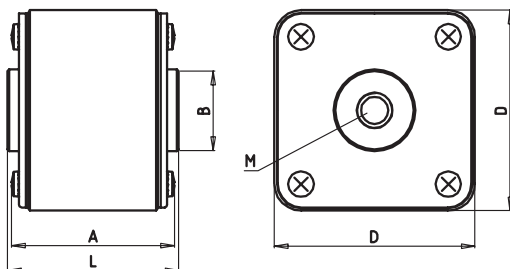
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 900-1250/1300 V

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
315 A	20 783 31	✓	1250/1300 V	102	2	
350 A	20 783 31	✓	1250/1300 V	102	2	
400 A	20 783 31	✓	1250/1300 V	102	2	
450 A	20 783 31	✓	1250/1300 V	102	2	
500 A	20 783 31	✓	1250/1300 V	102	2	
550 A	20 783 31	✓	1250/1300 V	102	2	
630 A	20 783 31	✓	1250/1300 V	102	2	
700 A	20 783 31	✓	1250/1300 V	102	2	
800 A	20 783 31	✓	1250/1300 V	102	2	
1000 A	20 783 31	✓	1000 V	102	2	
1100 A	20 783 31	✓	1000 V	102	2	
1250 A	20 783 31		900 V	102	2	
1400 A	20 783 31		900 V	102	2	



A	2.83" (72 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
L	2.90" (73.5 mm)
M	1/2"



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

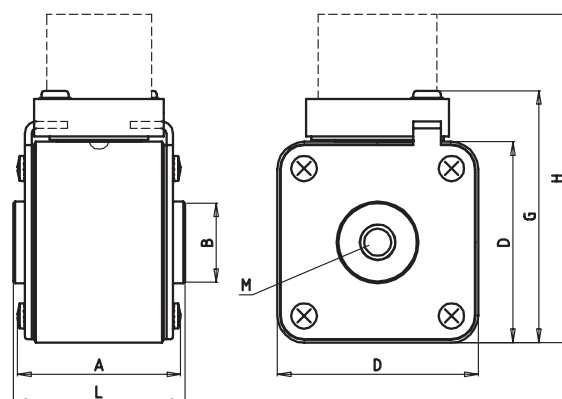
Rated voltage
AC 900-1250/1300 V

Microswitch
fitting

Standard
UNC threads

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
315 A	20 784 32	✓	1250/1300 V	102	2
350 A	20 784 32	✓	1250/1300 V	102	2
400 A	20 784 32	✓	1250/1300 V	102	2
450 A	20 784 32	✓	1250/1300 V	102	2
500 A	20 784 32	✓	1250/1300 V	102	2
550 A	20 784 32	✓	1250/1300 V	102	2
630 A	20 784 32	✓	1250/1300 V	102	2
700 A	20 784 32	✓	1250/1300 V	102	2
800 A	20 784 32	✓	1250/1300 V	102	2
1000 A	20 784 32	✓	1000 V	102	2
1100 A	20 784 32	✓	1000 V	102	2
1250 A	20 784 32		900 V	102	2
1400 A	20 784 32		900 V	102	2

A	2.83" (72 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	2.90" (73.5 mm)
M	1/2"





FUSES FOR SEMICONDUCTOR PROTECTION

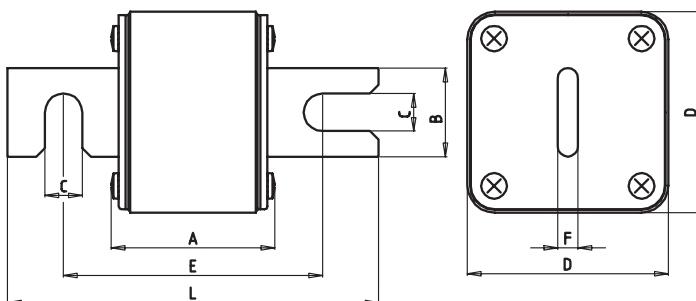
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 1100-1250/1300 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
50 A	20 713 31	✓	1250/1300 V	54	2
63 A	20 713 31	✓	1250/1300 V	54	2
80 A	20 713 31	✓	1250/1300 V	54	2
100 A	20 713 31	✓	1250/1300 V	54	2
125 A	20 713 31	✓	1250/1300 V	54	2
160 A	20 713 31	✓	1250/1300 V	54	2
200 A	20 713 31	✓	1250/1300 V	54	2
250 A	20 713 31	✓	1250/1300 V	54	2
315 A	20 713 31	✓	1250/1300 V	54	2
350 A	20 713 31	✓	1250/1300 V	54	2
400 A	20 713 31	✓	1250/1300 V	54	2
450 A	20 713 31	✓	1250/1300 V	54	2
500 A	20 713 31	✓	1100/1200 V	54	2
550 A	20 713 31	✓	1100/1200 V	54	2
630 A	20 713 31	✓	1100/1200 V	54	2



A	2.87" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.00" (51 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

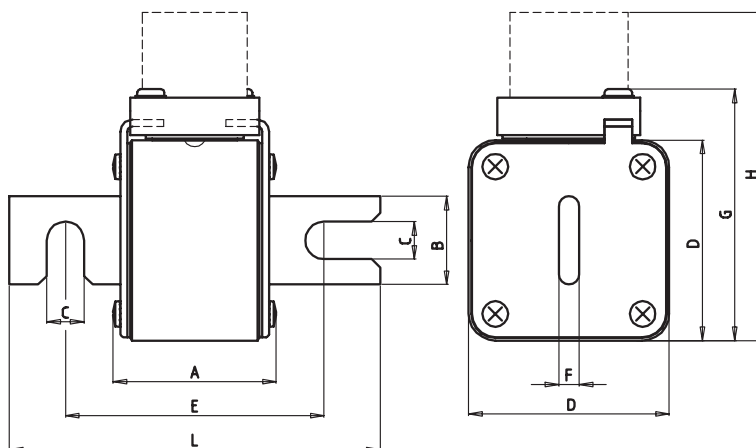
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
50 A	20 715 32	✓	1250/1300 V	54	2
63 A	20 715 32	✓	1250/1300 V	54	2
80 A	20 715 32	✓	1250/1300 V	54	2
100 A	20 715 32	✓	1250/1300 V	54	2
125 A	20 715 32	✓	1250/1300 V	54	2
160 A	20 715 32	✓	1250/1300 V	54	2
200 A	20 715 32	✓	1250/1300 V	54	2
250 A	20 715 32	✓	1250/1300 V	54	2
315 A	20 715 32	✓	1250/1300 V	54	2
350 A	20 715 32	✓	1250/1300 V	54	2
400 A	20 715 32	✓	1250/1300 V	54	2
450 A	20 715 32	✓	1250/1300 V	54	2
500 A	20 715 32	✓	1100/1200 V	54	2
550 A	20 715 32	✓	1100/1200 V	54	2
630 A	20 715 32	✓	1100/1200 V	54	2

A	2.87" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.00" (51 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	5.43" (138 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

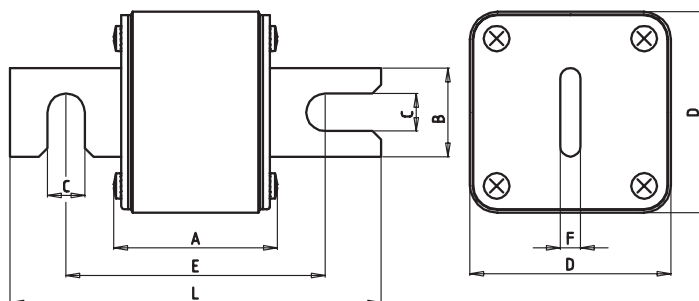
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 1100-1250/1300 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
250 A	20 723 31	✓	1250/1300 V	75	2	
280 A	20 723 31	✓	1250/1300 V	75	2	
315 A	20 723 31	✓	1250/1300 V	75	2	
350 A	20 723 31	✓	1250/1300 V	75	2	
400 A	20 723 31	✓	1250/1300 V	75	2	
450 A	20 723 31	✓	1250/1300 V	75	2	
500 A	20 723 31	✓	1250/1300 V	75	2	
556 A	20 723 31	✓	1250/1300 V	75	2	
630 A	20 723 31	✓	1250/1300 V	75	2	
700 A	20 723 31	✓	1100/1200 V	75	2	
800 A	20 723 31	✓	1100 V	75	2	



A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

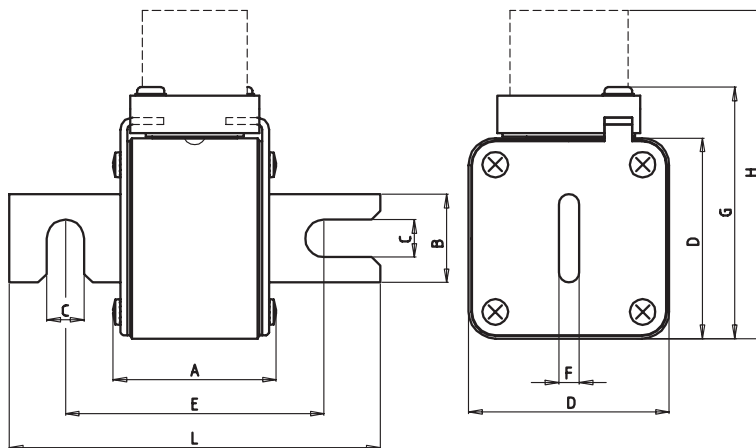
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
250 A	20 725 32	✓	1250/1300 V	75	2
280 A	20 725 32	✓	1250/1300 V	75	2
315 A	20 725 32	✓	1250/1300 V	75	2
350 A	20 725 32	✓	1250/1300 V	75	2
400 A	20 725 32	✓	1250/1300 V	75	2
450 A	20 725 32	✓	1250/1300 V	75	2
500 A	20 725 32	✓	1250/1300 V	75	2
556 A	20 725 32	✓	1250/1300 V	75	2
630 A	20 725 32	✓	1250/1300 V	75	2
700 A	20 725 32	✓	1100/1200 V	75	2
800 A	20 725 32	✓	1100 V	75	2

A	2.78" (70.5 mm)
B	1.02" (26 mm)
C	0.43" (11 mm)
D	2.36" (60 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	5.43" (138 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

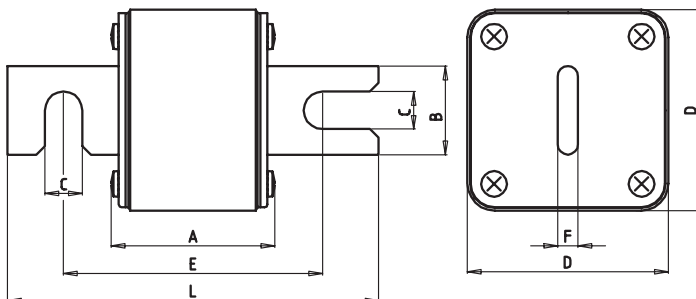
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 900-1250/1300 V

Standard
DIN 43653 / 110 mm fixing

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
315 A	20 733 31	✓	1250/1300 V	104	2
350 A	20 733 31	✓	1250/1300 V	104	2
400 A	20 733 31	✓	1250/1300 V	104	2
450 A	20 733 31	✓	1250/1300 V	104	2
500 A	20 733 31	✓	1250/1300 V	104	2
550 A	20 733 31	✓	1250/1300 V	104	2
630 A	20 733 31	✓	1250/1300 V	104	2
700 A	20 733 31	✓	1250/1300 V	104	2
800 A	20 733 31	✓	1250/1300 V	104	2
1000 A	20 733 31	✓	1000 V	104	2
1100 A	20 733 31	✓	1000 V	104	2
1250 A	20 733 31		900 V	104	2
1400 A	20 733 31		900 V	104	2



A	2.83" (72 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
L	5.43" (138 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

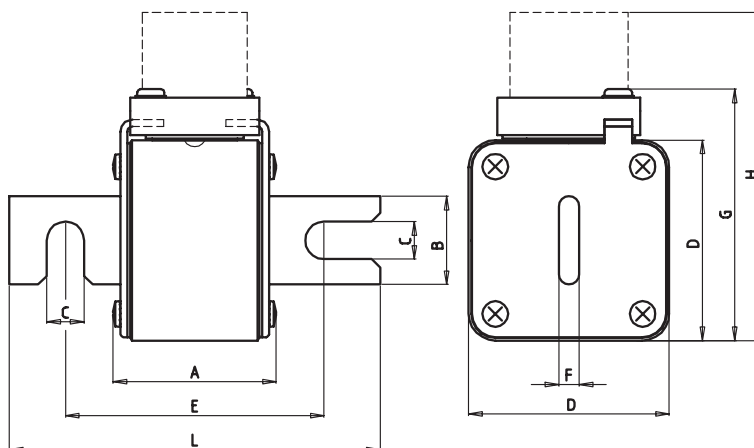
Rated voltage
AC 900-1250/1300 V

Microswitch
fitting **DIN 43653 / 110 mm fixing**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
315 A	20 735 32	✓	1250/1300 V	104	2
350 A	20 735 32	✓	1250/1300 V	104	2
400 A	20 735 32	✓	1250/1300 V	104	2
450 A	20 735 32	✓	1250/1300 V	104	2
500 A	20 735 32	✓	1250/1300 V	104	2
550 A	20 735 32	✓	1250/1300 V	104	2
630 A	20 735 32	✓	1250/1300 V	104	2
700 A	20 735 32	✓	1250/1300 V	104	2
800 A	20 735 32	✓	1250/1300 V	104	2
1000 A	20 735 32	✓	1000 V	104	2
1100 A	20 735 32	✓	1000 V	104	2
1250 A	20 735 32		900 V	104	2
1400 A	20 735 32		900 V	104	2

A	2.83" (72 mm)
B	1.38" (35 mm)
C	0.43" (11 mm)
D	2.87" (73 mm)
E	4.17" (106 mm)
F	0.24" (6 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	5.43" (138 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

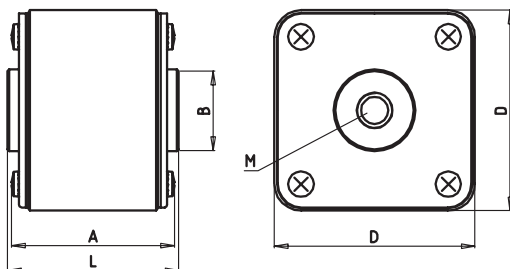
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
1

Rated voltage
AC 1100-1250/1300 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
50 A	20 760 31	✓	1250/1300 V	51	2	
63 A	20 760 31	✓	1250/1300 V	51	2	
80 A	20 760 31	✓	1250/1300 V	51	2	
100 A	20 760 31	✓	1250/1300 V	51	2	
125 A	20 760 31	✓	1250/1300 V	51	2	
160 A	20 760 31	✓	1250/1300 V	51	2	
200 A	20 760 31	✓	1250/1300 V	51	2	
250 A	20 760 31	✓	1250/1300 V	51	2	
315 A	20 760 31	✓	1250/1300 V	51	2	
350 A	20 760 31	✓	1250/1300 V	51	2	
400 A	20 760 31	✓	1250/1300 V	51	2	
450 A	20 760 31	✓	1250/1300 V	51	2	
500 A	20 760 31	✓	1100/1200 V	51	2	
550 A	20 760 31	✓	1100/1200 V	51	2	
630 A	20 760 31	✓	1100/1200 V	51	2	



A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
L	2.90" (73.5 mm)
M	M 8



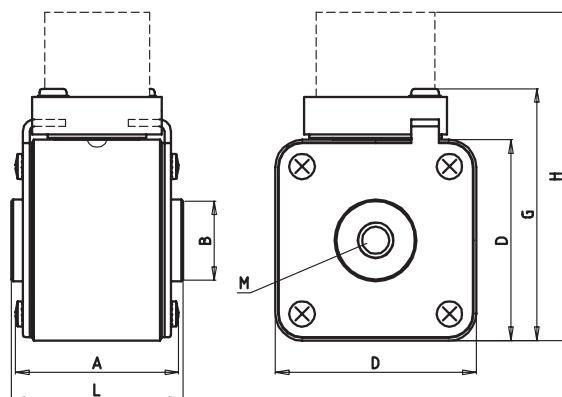
FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size **1** Rated voltage **AC 1100-1250/1300 V** Microswitch fitting **DIN 43653 / Metric thread** Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
50 A	20 761 32	✓	1250/1300 V	51	2
63 A	20 761 32	✓	1250/1300 V	51	2
80 A	20 761 32	✓	1250/1300 V	51	2
100 A	20 761 32	✓	1250/1300 V	51	2
125 A	20 761 32	✓	1250/1300 V	51	2
160 A	20 761 32	✓	1250/1300 V	51	2
200 A	20 761 32	✓	1250/1300 V	51	2
250 A	20 761 32	✓	1250/1300 V	51	2
315 A	20 761 32	✓	1250/1300 V	51	2
350 A	20 761 32	✓	1250/1300 V	51	2
400 A	20 761 32	✓	1250/1300 V	51	2
450 A	20 761 32	✓	1250/1300 V	51	2
500 A	20 761 32	✓	1100/1200 V	51	2
550 A	20 761 32	✓	1100/1200 V	51	2
630 A	20 761 32	✓	1100/1200 V	51	2

A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.00" (51 mm)
G	2.60" (66 mm)
H	3.50" (89 mm)
L	2.90" (73.5 mm)
M	M 8





FUSES FOR SEMICONDUCTOR PROTECTION

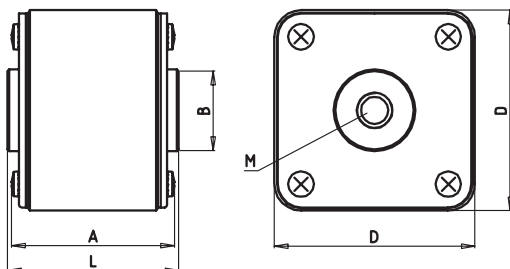
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 1100-1250/1300 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
250 A	20 770 31	✓	1250/1300 V	73	2	
280 A	20 770 31	✓	1250/1300 V	73	2	
315 A	20 770 31	✓	1250/1300 V	73	2	
350 A	20 770 31	✓	1250/1300 V	73	2	
400 A	20 770 31	✓	1250/1300 V	73	2	
450 A	20 770 31	✓	1250/1300 V	73	2	
500 A	20 770 31	✓	1250/1300 V	73	2	
556 A	20 770 31	✓	1250/1300 V	73	2	
630 A	20 770 31	✓	1250/1300 V	73	2	
700 A	20 770 31	✓	1100/1200 V	73	2	
800 A	20 770 31	✓	1100 V	73	2	



A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
L	2.90" (73.5 mm)
M	M 10



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

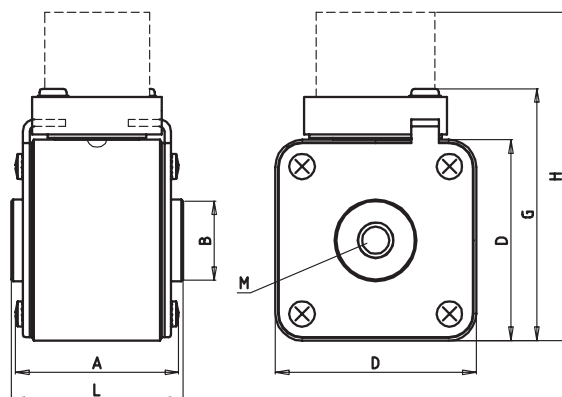
Rated voltage
AC 1100-1250/1300 V

Microswitch
fitting

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
250 A	20 771 32	✓	1250/1300 V	73	2
280 A	20 771 32	✓	1250/1300 V	73	2
315 A	20 771 32	✓	1250/1300 V	73	2
350 A	20 771 32	✓	1250/1300 V	73	2
400 A	20 771 32	✓	1250/1300 V	73	2
450 A	20 771 32	✓	1250/1300 V	73	2
500 A	20 771 32	✓	1250/1300 V	73	2
556 A	20 771 32	✓	1250/1300 V	73	2
630 A	20 771 32	✓	1250/1300 V	73	2
700 A	20 771 32	✓	1100/1200 V	73	2
800 A	20 771 32	✓	1100 V	73	2

A	2.78" (70.5 mm)
B	0.94" (24 mm)
D	2.36" (60 mm)
G	2.95" (75 mm)
H	3.86" (98 mm)
L	2.90" (73.5 mm)
M	M 10





FUSES FOR SEMICONDUCTOR PROTECTION

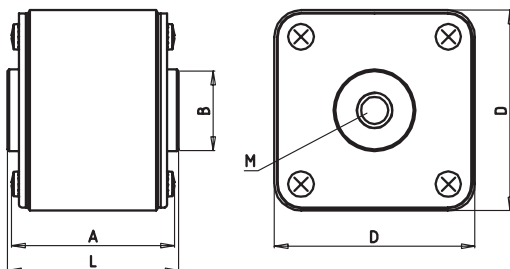
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

Rated voltage
AC 900-1250/1300 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack	
315 A	20 780 31	✓	1250/1300 V	102	2	
350 A	20 780 31	✓	1250/1300 V	102	2	
400 A	20 780 31	✓	1250/1300 V	102	2	
450 A	20 780 31	✓	1250/1300 V	102	2	
500 A	20 780 31	✓	1250/1300 V	102	2	
550 A	20 780 31	✓	1250/1300 V	102	2	
630 A	20 780 31	✓	1250/1300 V	102	2	
700 A	20 780 31	✓	1250/1300 V	102	2	
800 A	20 780 31	✓	1250/1300 V	102	2	
1000 A	20 780 31	✓	1000 V	102	2	
1100 A	20 780 31	✓	1000 V	102	2	
1250 A	20 780 31		900 V	102	2	
1400 A	20 780 31		900 V	102	2	



A	2.83" (72 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
L	2.90" (73.5 mm)
M	M 12



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
3

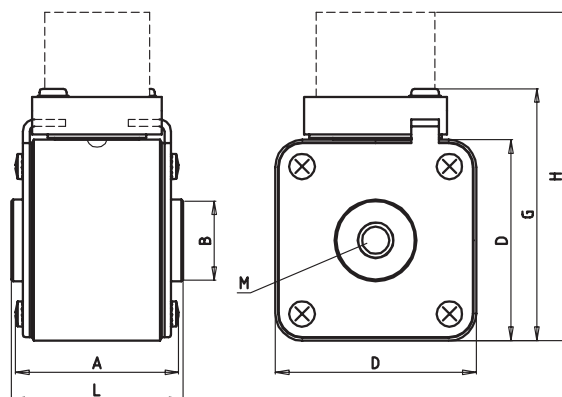
Rated voltage
AC 900-1250/1300 V

Microswitch
fitting **DIN 43653 / Metric thread**

Standard

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
315 A	20 781 32	✓	1250/1300 V	102	2
350 A	20 781 32	✓	1250/1300 V	102	2
400 A	20 781 32	✓	1250/1300 V	102	2
450 A	20 781 32	✓	1250/1300 V	102	2
500 A	20 781 32	✓	1250/1300 V	102	2
550 A	20 781 32	✓	1250/1300 V	102	2
630 A	20 781 32	✓	1250/1300 V	102	2
700 A	20 781 32	✓	1250/1300 V	102	2
800 A	20 781 32	✓	1250/1300 V	102	2
1000 A	20 781 32	✓	1000 V	102	2
1100 A	20 781 32	✓	1000 V	102	2
1250 A	20 781 32		900 V	102	2
1400 A	20 781 32		900 V	102	2

A	2.83" (82 mm)
B	1.10" (28 mm)
D	2.87" (73 mm)
G	3.46" (88 mm)
H	4.37" (111 mm)
L	2.90" (73.5 mm)
M	M 12





FUSES FOR SEMICONDUCTOR PROTECTION

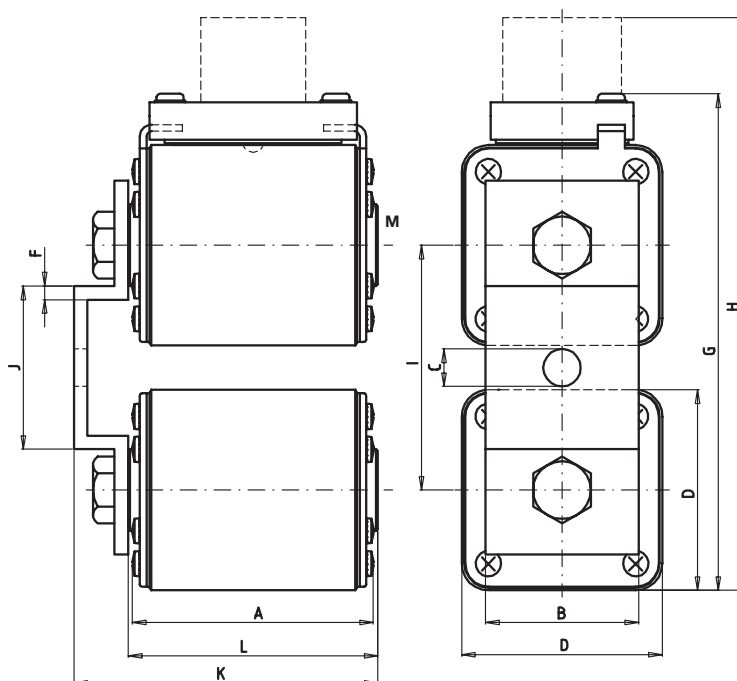
NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

Size
2

Rated voltage
AC 1000-1250 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
630 A	20 778 32	✓	1250 V	145	1
700 A	20 778 32	✓	1250 V	145	1
800 A	20 778 32	✓	1250 V	145	1
900 A	20 778 32	✓	1250 V	145	1
1000 A	20 778 32	✓	1250 V	145	1
1100 A	20 778 32	✓	1250 V	145	1
1250 A	20 778 32	✓	1250 V	145	1
1400 A	20 778 32	✓	1100 V	145	1
1600 A	20 778 32	✓	1000 V	145	1



A	2.78" (70,5 mm)
B	1.77" (45 mm)
C	0.43" (11 mm)
D	2.32" (59 mm)
F	0.16" (4 mm)
G	5.83" (148 mm)
H	6.61" (168 mm)
I	2.83" (72 mm)
J	1.89" (48 mm)
K	3.54" (90 mm)
L	2.89" (73.5 mm)
M	M 10



FUSES FOR SEMICONDUCTOR PROTECTION

NORTH AMERICAN AND EUROPEAN STANDARD TYPE SQB

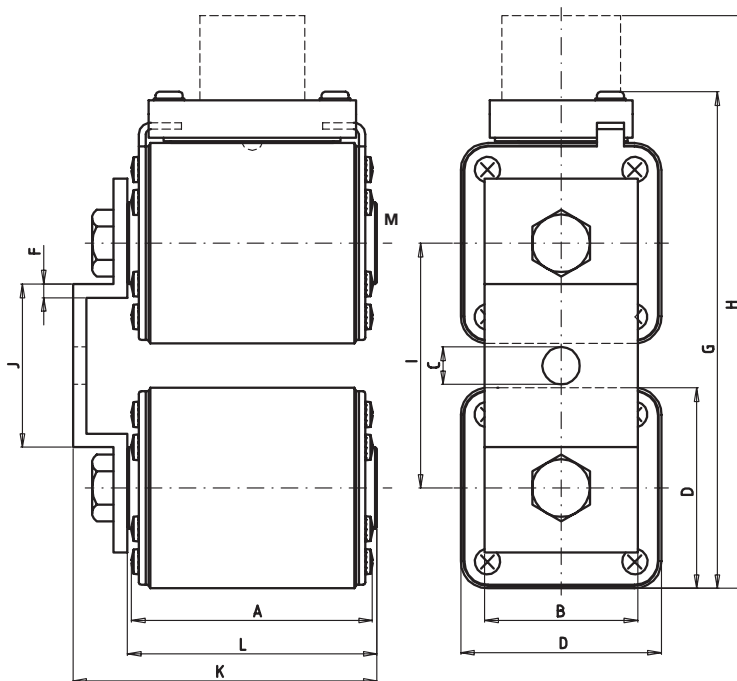
Size
3

Rated voltage
AC 1000-1250 V

Standard
DIN 43653 / Metric thread

Rated current	Part No.	UL Rec.	Rated Voltage AC	Weight (kg/100)	Pack
800 A	20 788 32	✓	1250 V	265	1
900 A	20 788 32	✓	1250 V	265	1
1000 A	20 788 32	✓	1250 V	265	1
1250 A	20 788 32	✓	1250 V	265	1
1400 A	20 788 32	✓	1250 V	265	1
1600 A	20 788 32	✓	1250 V	265	1
1800 A	20 788 32	✓	1250 V	265	1
2000 A	20 788 32	✓	1100 V	265	1
2200 A	20 788 32	✓	1000 V	265	1

A	2.83" (72 mm)
B	1.97" (50 mm)
C	0.51" (13 mm)
D	2.87" (73 mm)
F	0.16" (4 mm)
G	6.77" (172 mm)
H	7.94" (195 mm)
I	3.39" (86 mm)
J	2.13" (54 mm)
K	3.54" (90 mm)
L	2.89" (73,5 mm)
M	M 12



Size
1

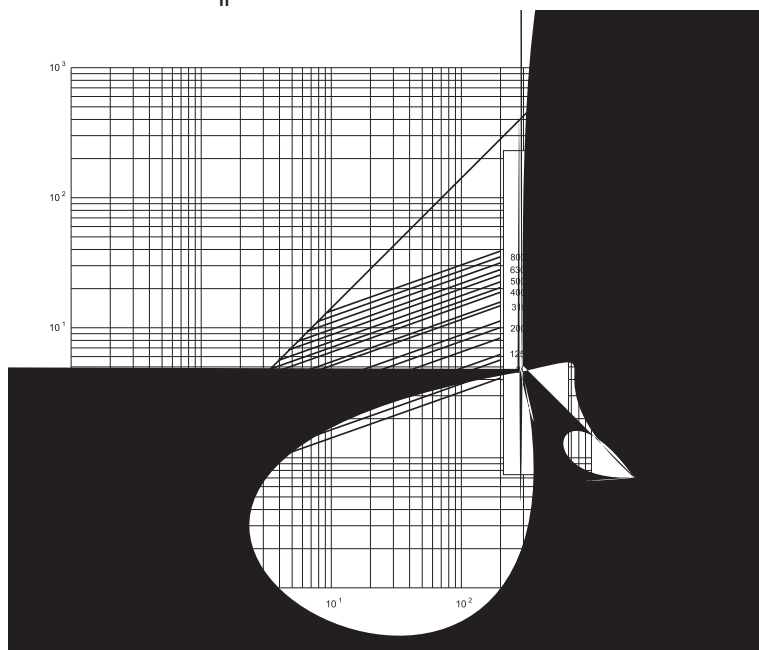
Rated voltage
AC 690/700 V

Operating class
aR

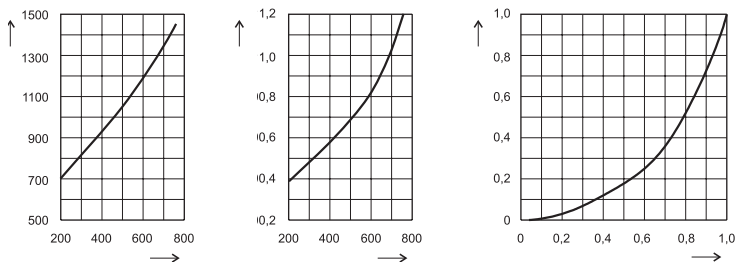
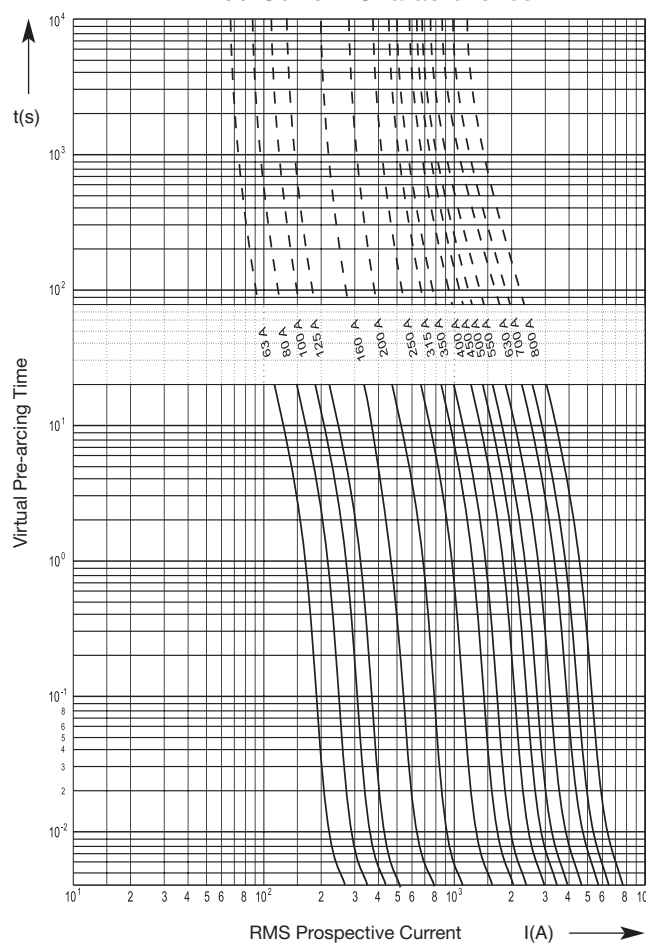
Rated breaking capacity
200 kA

Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
63 A	690 V	700 V	19	160	850
80 A	690 V	700 V	24	260	1,400
100 A	690 V	700 V	30	420	2,300
125 A	690 V	700 V	35	600	3,100
160 A	690 V	700 V	40	1,400	7,500
200 A	690 V	700 V	44	2,400	13,000
250 A	690 V	700 V	51	3,700	21,000
315 A	690 V	700 V	59	6,600	39,000
350 A	690 V	700 V	61	9,900	55,000
400 A	690 V	700 V	65	17,000	96,000
450 A	690 V	700 V	70	22,000	130,000
500 A	690 V	700 V	72	31,000	180,000
550 A	690 V	700 V	75	41,000	250,000
630 A	690 V	700 V	80	61,000	370,000
700 A	690 V *	700 V	85	86,000	490,000
800 A	690 V *	700 V	99	120,000	750,000
900 A	690 V *	700 V	105	170,000	990,000

* tested @ $1.05 \times U_n$



Time / Current Characteristics

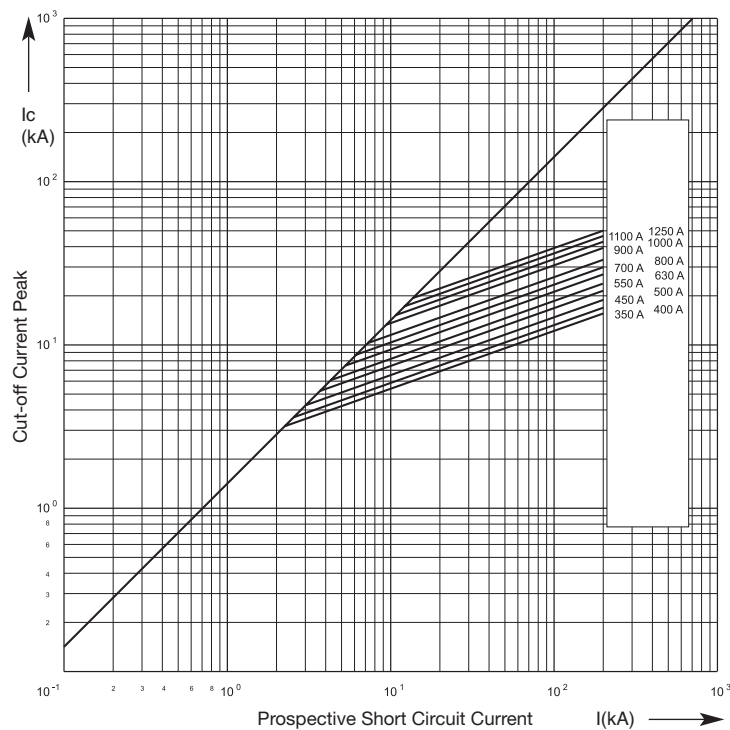


Size 2	Rated voltage AC 690/700 V	Operating class aR	Rated breaking capacity 200 kA
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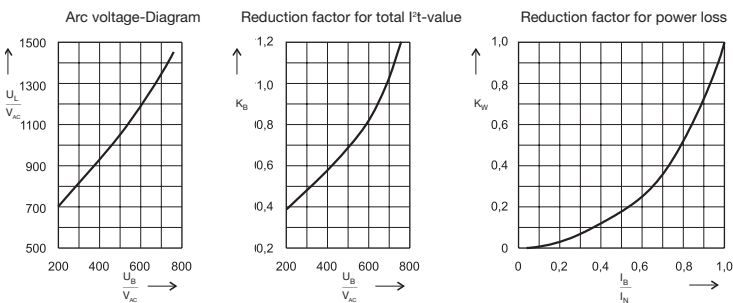
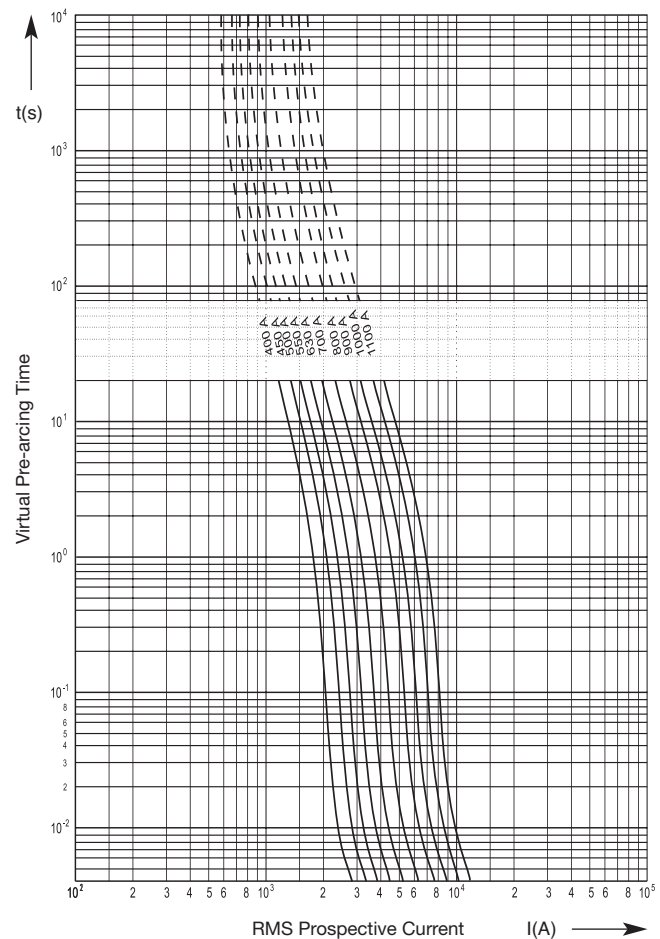
Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Power loss W	Pre-arcing I^2t -value A²s	Total I^2t -value @ 660 V A²s
400 A	690 V	700 V	65	13,000	75,000
450 A	690 V	700 V	75	18,000	110,000
500 A	690 V	700 V	80	26,000	150,000
550 A	690 V	700 V	85	36,000	195,000
630 A	690 V	700 V	94	55,000	300,000
700 A	690 V	700 V	99	74,000	410,000
800 A	690 V	700 V	108	100,000	580,000
900 A	690 V *	700 V	111	170,000	950,000
1000 A	690 V *	700 V	115	230,000	1,260,000
1100 A	600 V *	600 V	130	290,000	1,600,000
1250 A	600 V *	600 V	140	370,000	2,140,000

* tested @ $1.05 \times U_n$

Cut-off-characteristics



Time / Current Characteristics



Size
3

Rated voltage
AC 690/700 V

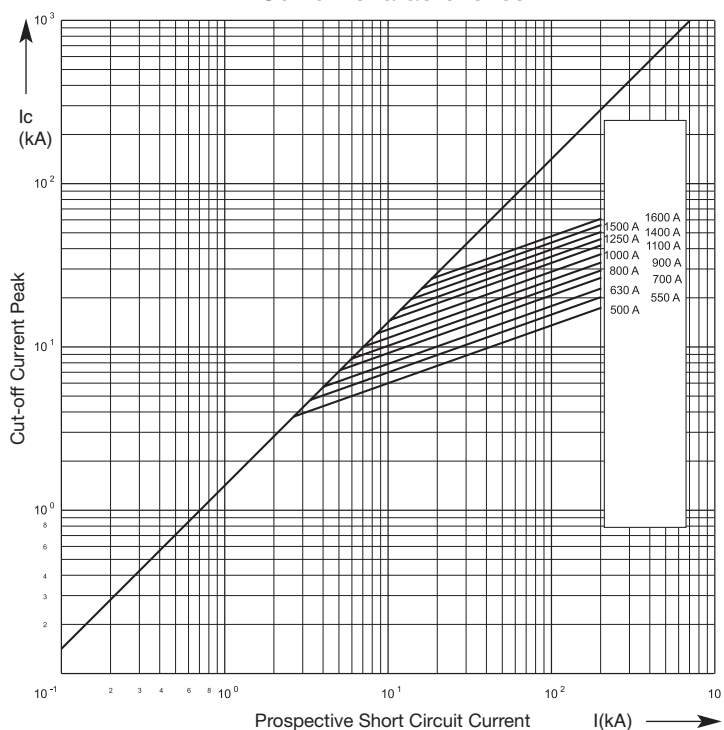
Operating class
aR

Rated breaking capacity
200 kA

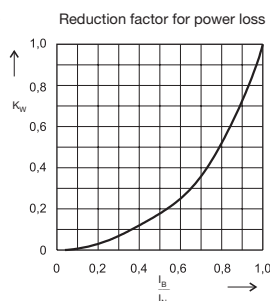
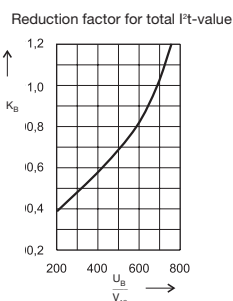
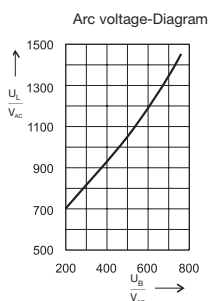
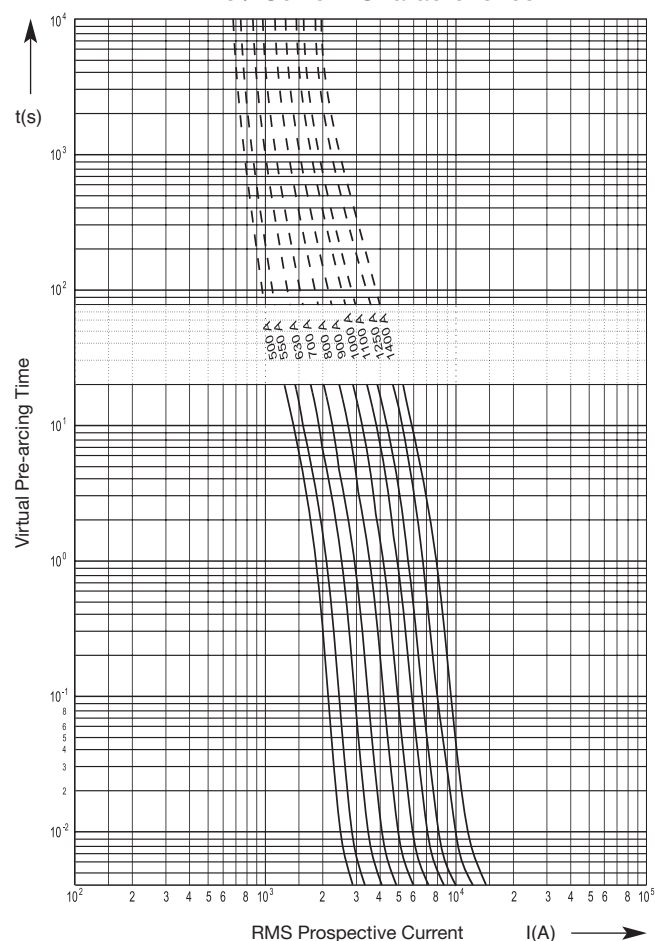
Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
500 A	690 V	700 V	90	18,000	100,000
550 A	690 V	700 V	100	22,000	130,000
630 A	690 V	700 V	108	31,000	190,000
700 A	690 V	700 V	113	50,000	300,000
800 A	690 V	700 V	118	85,000	480,000
900 A	690 V	700 V	120	115,000	660,000
1000 A	690 V	700 V	131	140,000	860,000
1100 A	690 V *	700 V	136	210,000	1,200,000
1250 A	690 V *	700 V	147	290,000	1,750,000
1400 A	690 V *	700 V	161	380,000	2,200,000
1500 A	600 V *	600 V	170	490,000	3,000,000
1600 A	600 V *	600 V	190	590,000	3,700,000

* tested @ $1.05 \times U_n$

Cut-off-characteristics



Time / Current Characteristics



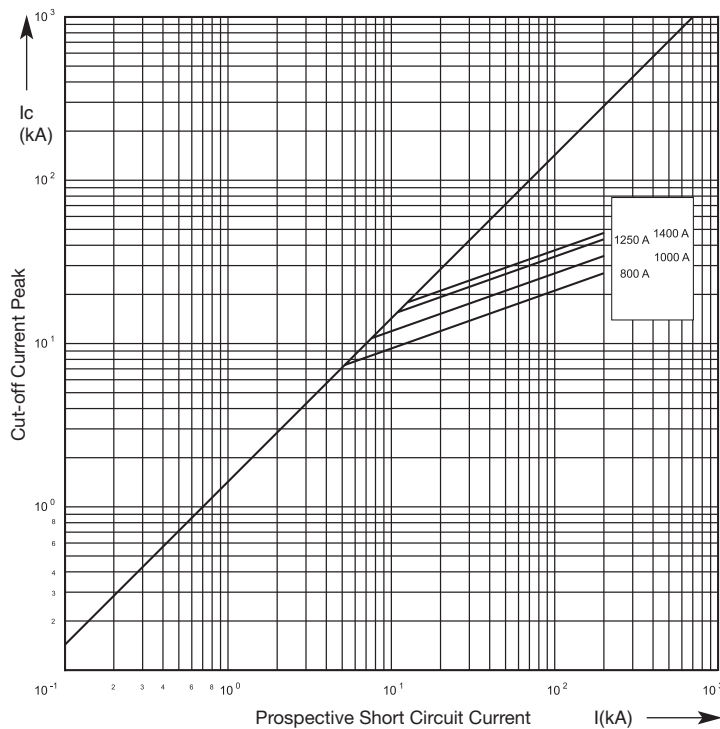
Size
2

Rated voltage
AC 690/700 V

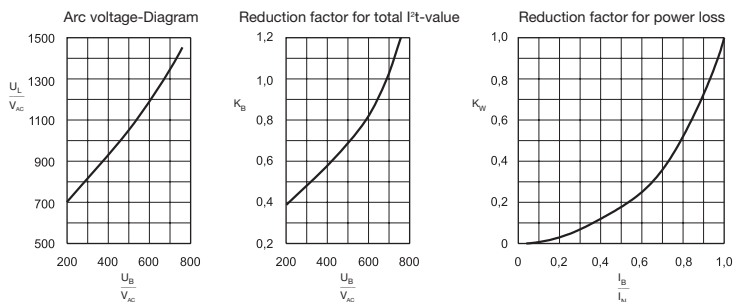
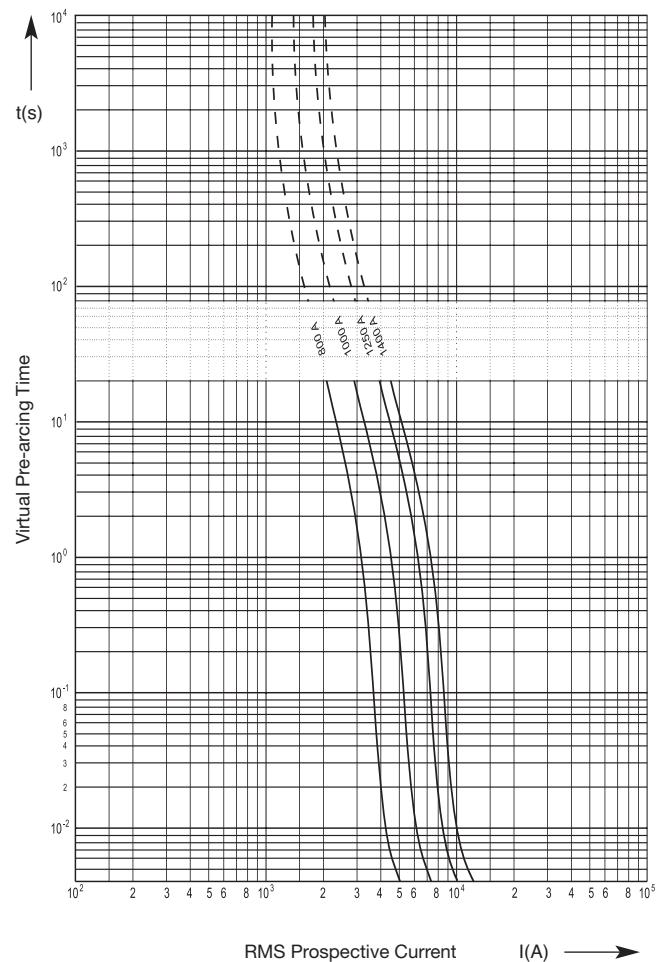
Operating class
aR

Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Part No.	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
800 A	690 V	700 V	20 678 32	136	52,000	300,000
1000 A	690 V	700 V	20 678 32	168	104,000	600,000
1250 A	690 V	700 V	20 678 32	197	216,000	1,065,000
1400 A	690 V	700 V	20 678 32	208	296,000	1,640,000

Cut-off-characteristics



Time / Current Characteristics



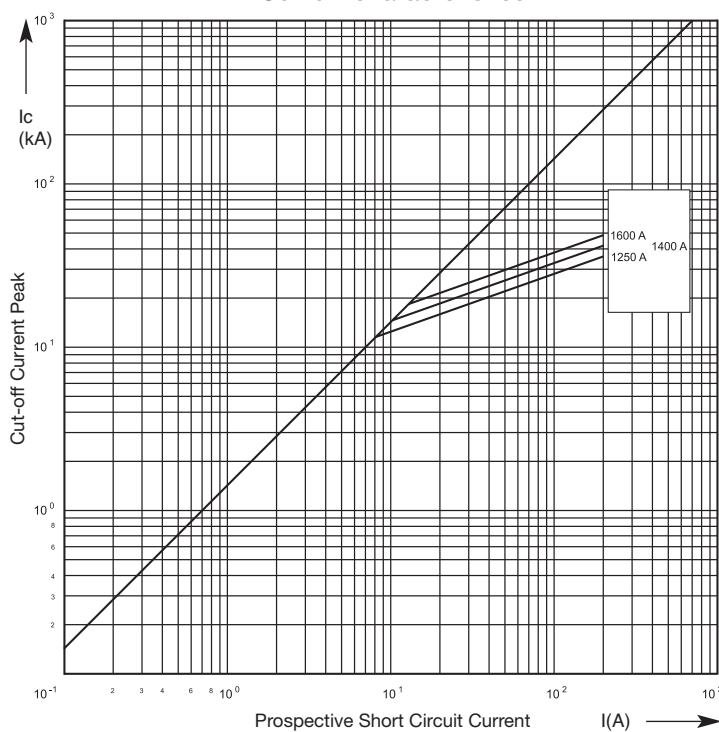
Size
3

Rated voltage
AC 690/700 V

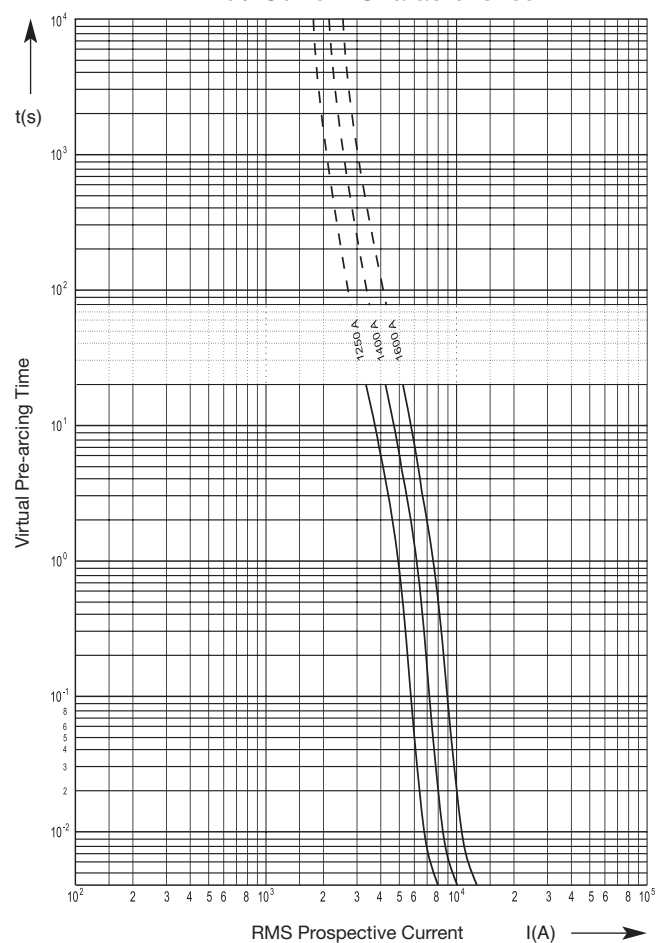
Operating class
aR

Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Part No.	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
1250 A	690 V	700 V	20 688 32	227	128,000	760,000
1400 A	690 V	700 V	20 688 32	237	200,000	1,200,000
1600 A	690 V	700 V	20 688 32	248	340,000	1,920,000

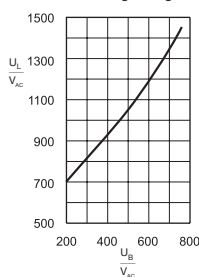
Cut-off-characteristics



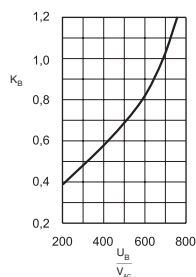
Time / Current Characteristics



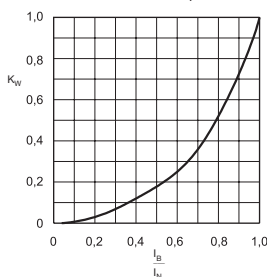
Arc voltage-Diagram



Reduction factor for total I^2t -value



Reduction factor for power loss



Size
1

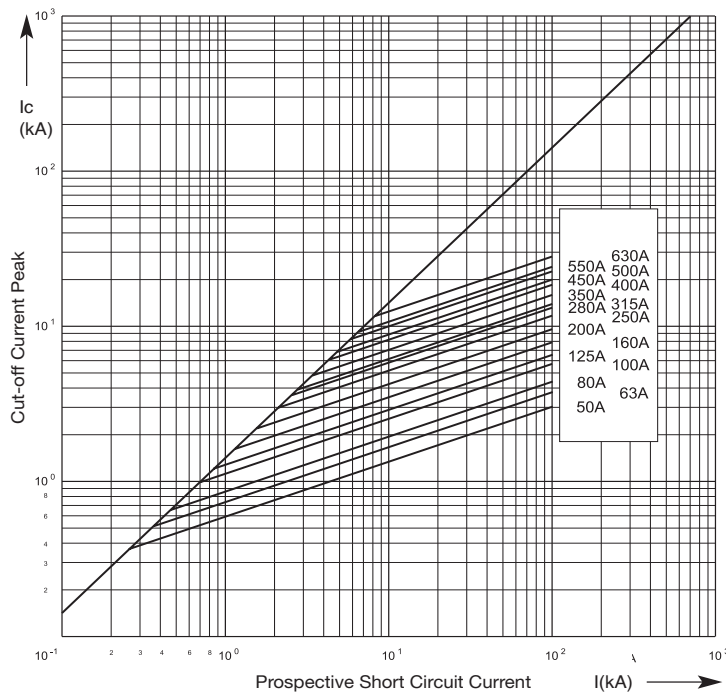
Rated voltage
AC 1250/1300 V

Operating class
aR

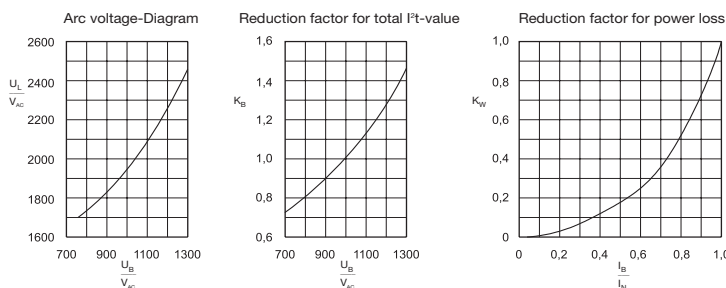
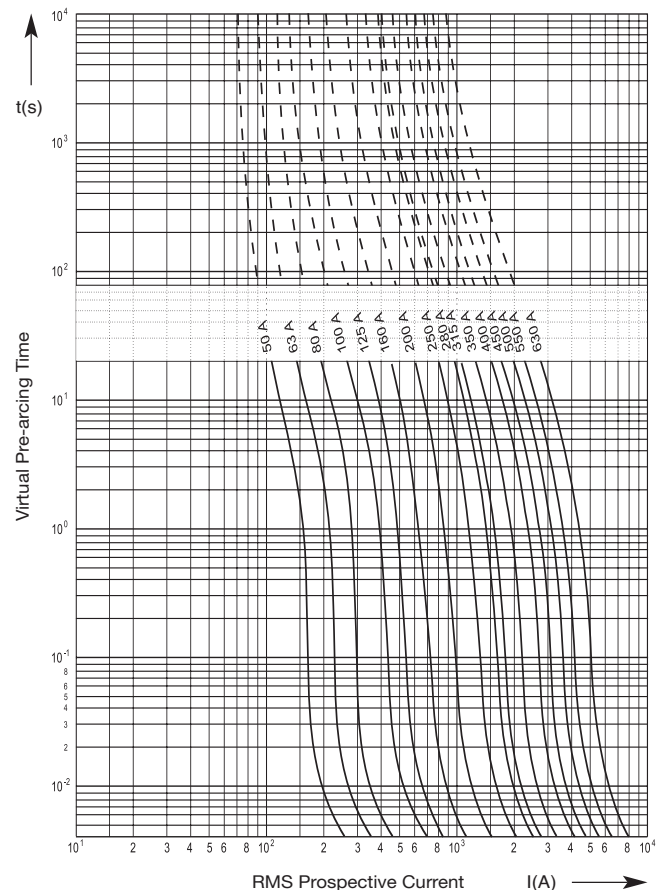
Rated breaking capacity
100 kA

Rated current	Rated Voltage U_N IEC 60269-4	Rated Voltage U_N UL 248-13	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 1000 V A ² s
50 A	1250 V	1300 V	29	130	730
63 A	1250 V	1300 V	32	250	1,400
80 A	1250 V	1300 V	35	410	2,300
100 A	1250 V	1300 V	38	930	5,200
125 A	1250 V	1300 V	41	1,400	7,800
160 A	1250 V	1300 V	45	2,500	14,000
200 A	1250 V	1300 V	49	4,600	25,000
250 A	1250 V	1300 V	58	8,400	46,000
280 A	1250 V	1300 V	60	12,500	64,000
315 A	1250 V	1300 V	67	15,000	81,000
350 A	1250 V	1300 V	70	22,000	120,000
400 A	1250 V	1300 V	75	36,000	200,000
450 A	1250 V	1300 V	80	44,000	250,000
500 A	1100 V	1200 V	87	66,000	340,000
550 A	1100 V	1200 V	94	83,000	430,000
630 A	1100 V	1200 V	99	126,000	670,000

Cut-off-characteristics



Time / Current Characteristics



Size
2

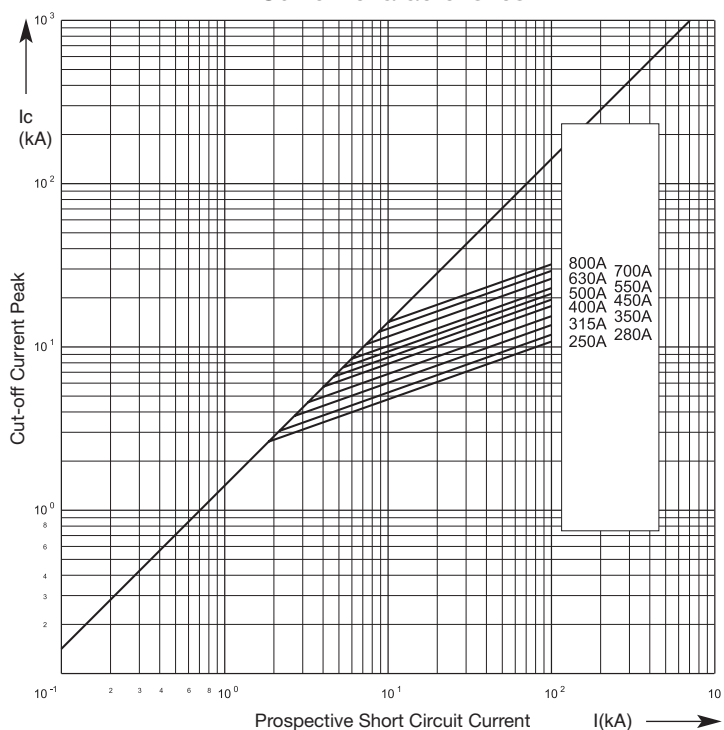
Rated voltage
AC 1250/1300 V

Operating class
aR

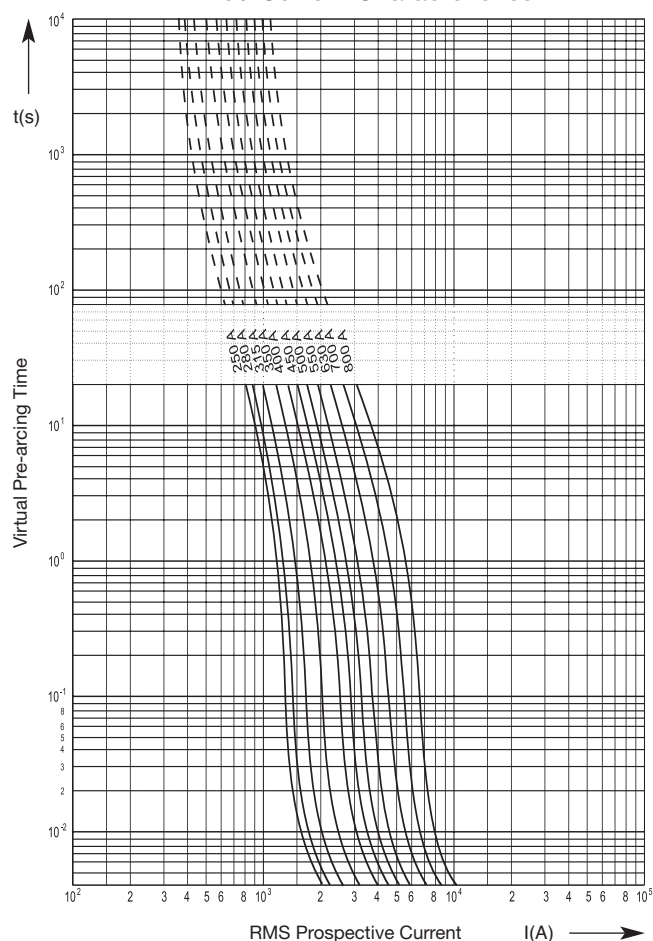
Rated breaking capacity
100 kA

Rated current	Rated Voltage U_N IEC 60269-4	Rated Voltage U_N UL 248-13	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 1000 V A ² s
250 A	1250 V	1300 V	55	8,200	45,000
280 A	1250 V	1300 V	59	9,900	56,000
315 A	1250 V	1300 V	66	14,000	78,000
350 A	1250 V	1300 V	71	20,000	110,000
400 A	1250 V	1300 V	75	31,000	170,000
450 A	1250 V	1300 V	80	42,000	240,000
500 A	1250 V	1300 V	90	56,000	310,000
550 A	1250 V	1300 V	105	71,000	350,000
630 A	1250 V	1300 V	110	105,000	540,000
700 A	1100 V	1200 V	115	148,000	710,000
800 A	1100 V	1100 V	123	225,000	1,180,000

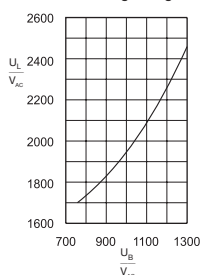
Cut-off-characteristics



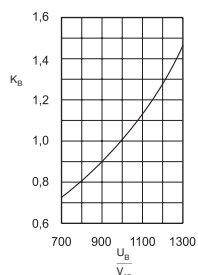
Time / Current Characteristics



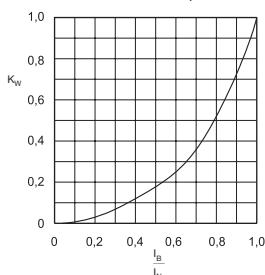
Arc voltage-Diagram



Reduction factor for total I²t-value



Reduction factor for power loss



Size
3

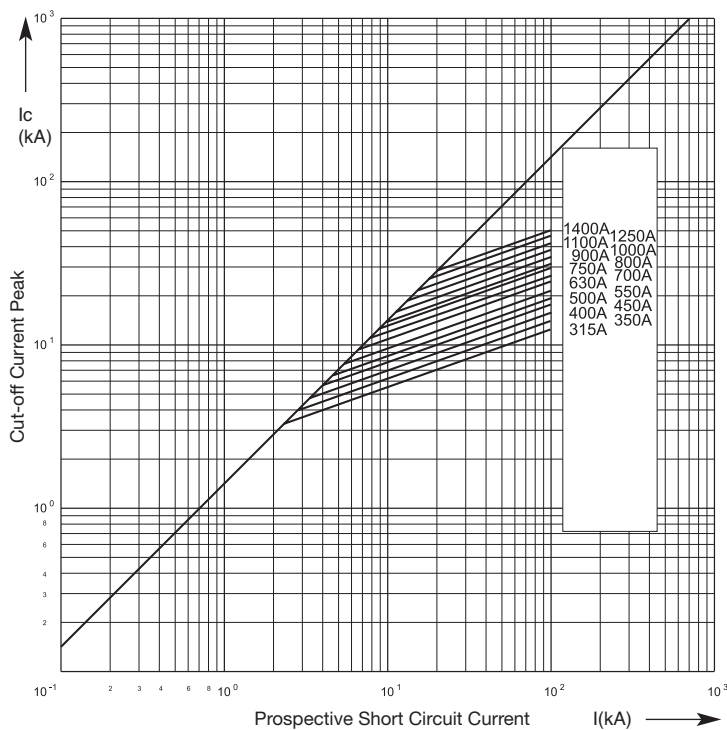
Rated voltage
AC 1250/1300 V

Operating class
aR

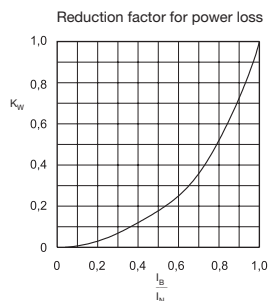
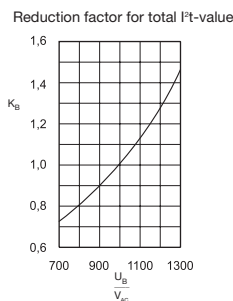
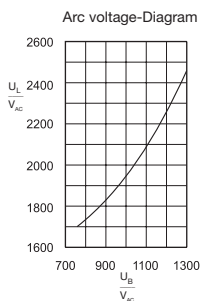
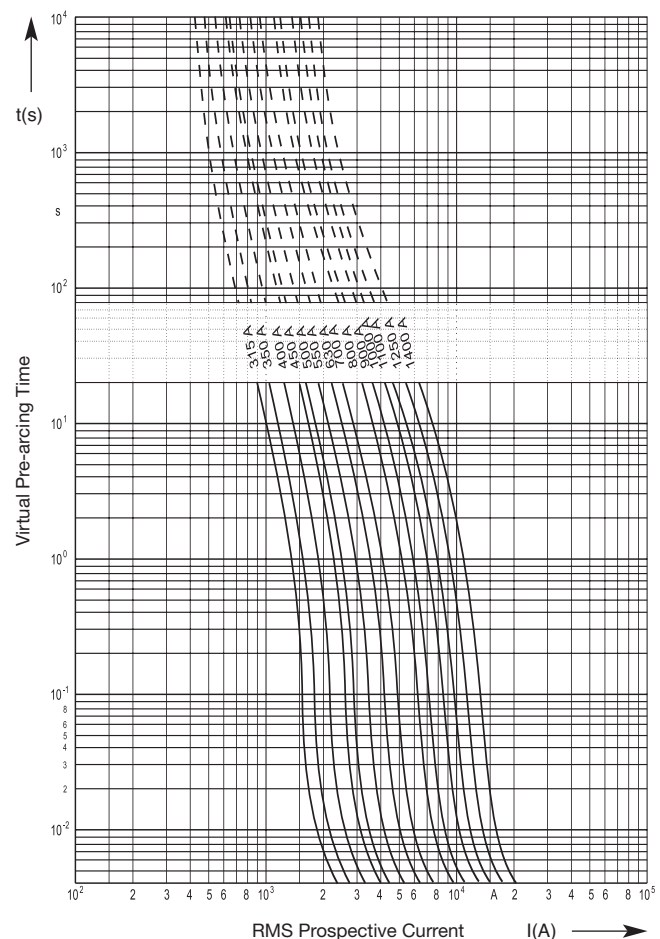
Rated breaking capacity
100 kA

Rated current	Rated Voltage U_N IEC 60269-4	Rated Voltage U_N UL 248-13	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 1000 V A ² s
315 A	1250 V	1300 V	83	11,000	60,000
350 A	1250 V	1300 V	85	15,000	90,000
400 A	1250 V	1300 V	92	22,000	130,000
450 A	1250 V	1300 V	99	33,000	190,000
500 A	1250 V	1300 V	110	42,000	230,000
550 A	1250 V	1300 V	115	56,000	320,000
630 A	1250 V	1300 V	120	83,000	480,000
700 A	1250 V	1300 V	131	113,000	640,000
800 A	1250 V	1300 V	135	201,000	1,070,000
900 A	1200 V	1300 V	140	236,000	1,300,000
1000 A	1000 V	1000 V	150	350,000	1,900,000
1100 A	1000 V	1000 V	174	443,000	2,400,000
1250 A	900 V	—	198	652,000	3,300,000
1400 A	900 V	—	210	852,000	3,900,000

Cut-off-characteristics



Time / Current Characteristics



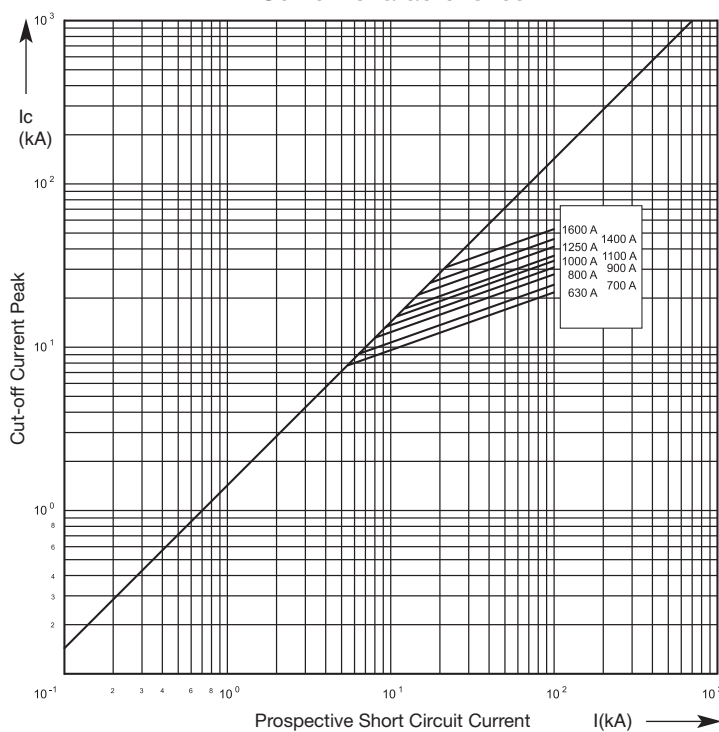
Size
2

Rated voltage
AC 1000-1250 V

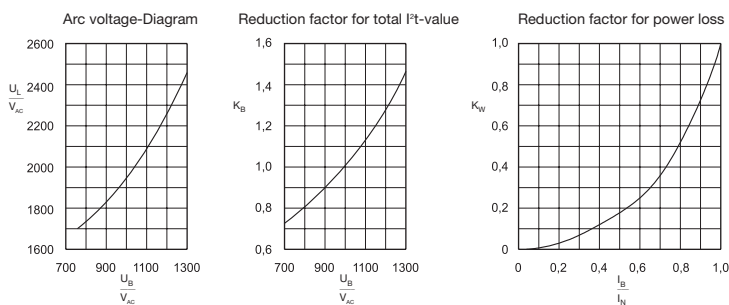
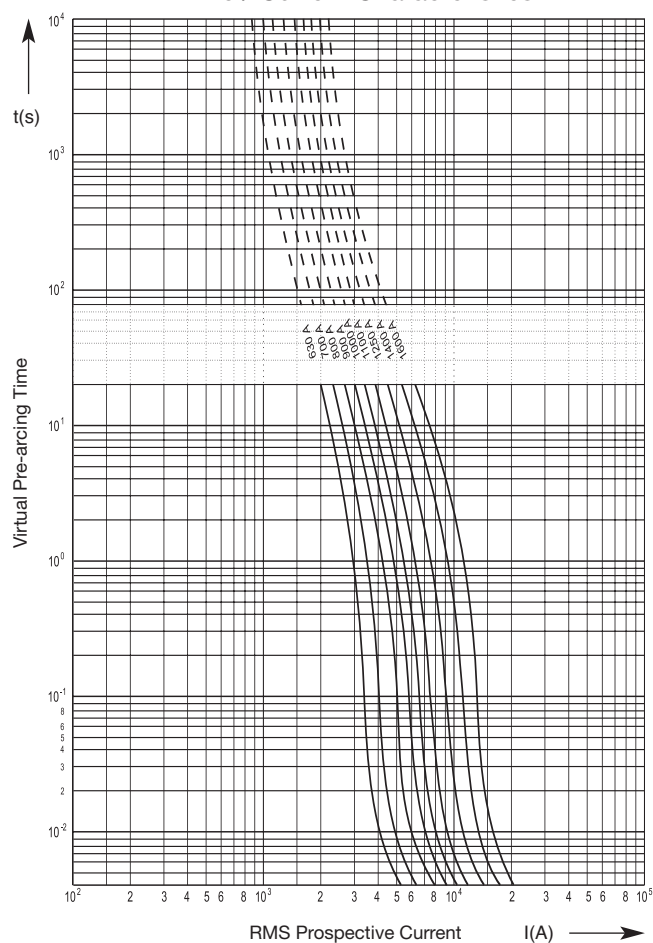
Operating class
aR

Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Part No.	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
630 A	1000 V	1250 V	20 778 32	139	56,000	312,000
700 A	1000 V	1250 V	20 778 32	149	80,000	440,000
800 A	1000 V	1250 V	20 778 32	158	124,000	680,000
900 A	1000 V	1250 V	20 778 32	168	168,000	960,000
1000 A	1000 V	1250 V	20 778 32	189	224,000	1,240,000
1100 A	1000 V	1250 V	20 778 32	221	284,000	1,400,000
1250 A	1000 V	1250 V	20 778 32	230	420,000	2,160,000
1400 A	1000 V	1250 V	20 778 32	242	592,000	2,840,000
1600 A	1000 V	1250 V	20 778 32	258	900,000	4,720,000

Cut-off-characteristics



Time / Current Characteristics



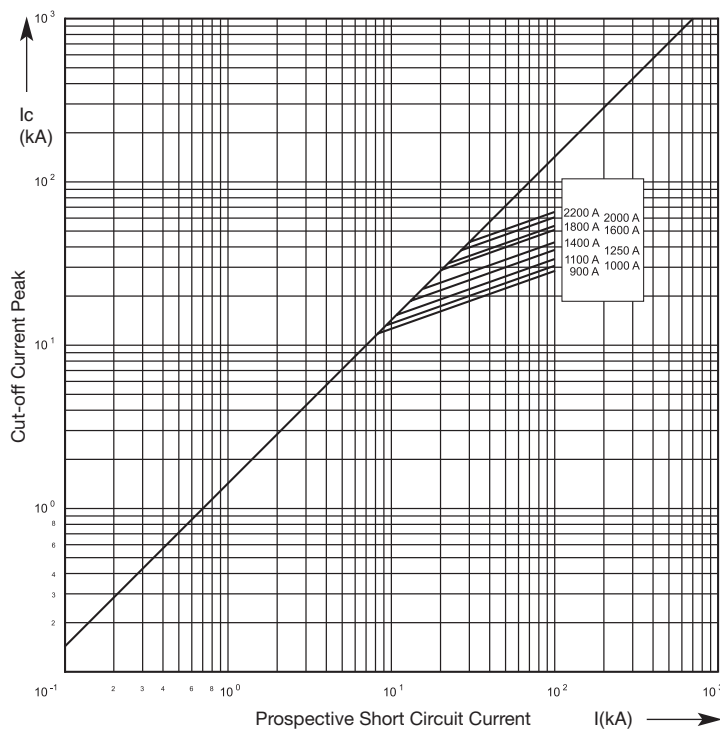
Size
3

Rated voltage
AC 1000-1250 V

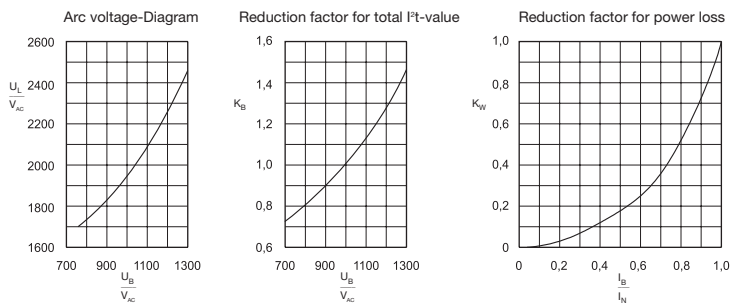
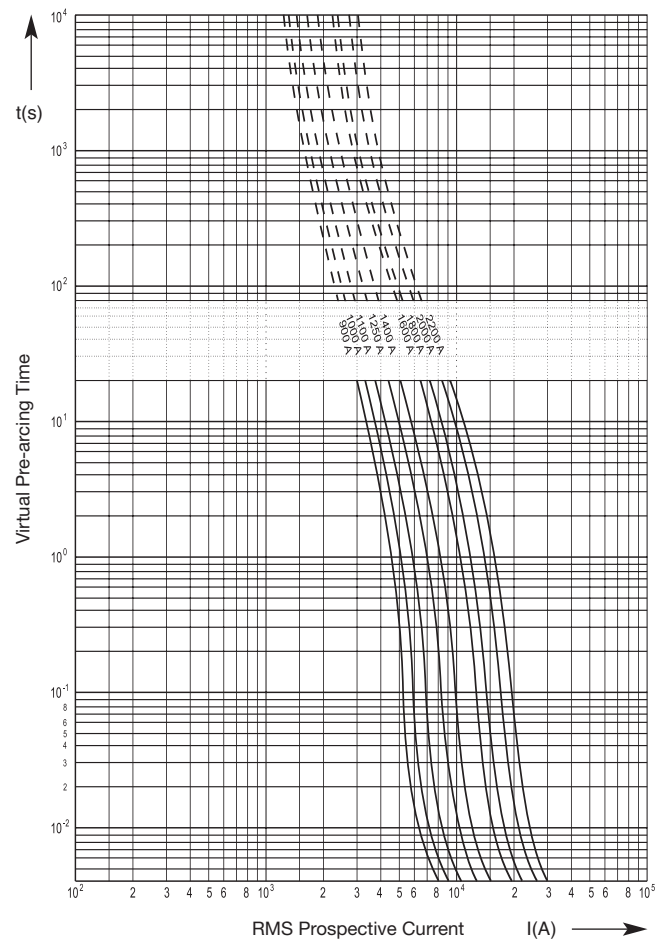
Operating class
aR

Rated current	Rated Voltage U_n IEC 60269-4	Rated Voltage U_n UL 248-13	Part No.	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s
800 A	1000 V	1250 V	20 788 32	193	88,000	520,000
900 A	1000 V	1250 V	20 788 32	208	132,000	760,000
1000 A	1000 V	1250 V	20 788 32	231	168,000	920,000
1250 A	1000 V	1250 V	20 788 32	252	332,000	1,920,000
1400 A	1000 V	1250 V	20 788 32	275	452,000	2,560,000
1600 A	1000 V	1250 V	20 788 32	284	804,000	4,280,000
1800 A	1000 V	1250 V	20 788 32	294	944,000	5,200,000
2000 A	1000 V	1250 V	20 788 32	315	1,400,000	7,600,000
2200 A	1000 V	1250 V	20 788 32	365	1,772,000	9,600,000

Cut-off-characteristics



Time / Current Characteristics



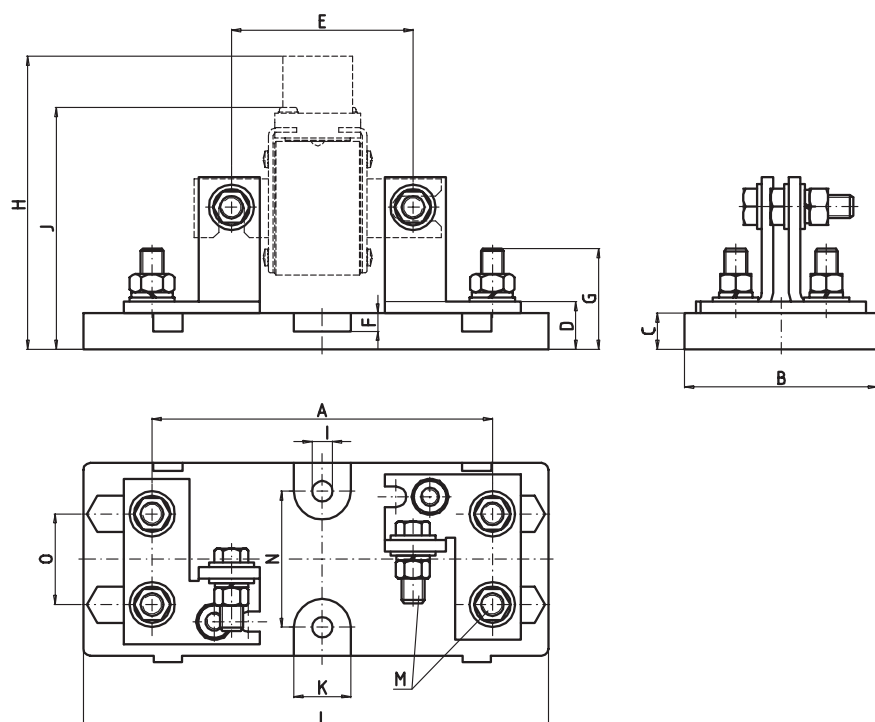
Fuse Base
 for fuse links with screwcontacts

 Size
1, 2 and 3

 Rated current
630 A

 Standard
DIN 43653

Rated Voltage AC	Part No.	Fixing Center	Dimensions	max. Nut Torque	Rated Power acceptance
900 V	21 313 01	80 mm	150 mm	48 Nm	60 W
1400 V	21 323 01	110 mm	180 mm	48 Nm	60 W


Fixing Center
 80 mm

A	5.90" (150 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	3.15" (80 mm)
F	0.30" (8 mm)
G	1.80" (46 mm)
H _(Size 1)	5.00" (127 mm)
H _(Size 2)	5.12" (130 mm)
H _(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
J _(Size 1)	4.10" (104 mm)
J _(Size 2)	4.25" (108 mm)
J _(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L _(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)

Fixing Center
 110 mm

A	7.10" (180 mm)
B	3.35" (85 mm)
C	0.63" (16 mm)
D	0.83" (21 mm)
E	4.33" (110 mm)
F	0.30" (8 mm)
G	1.80" (46 mm)
H _(Size 1)	5.00" (127 mm)
H _(Size 2)	5.12" (130 mm)
H _(Size 3)	5.40" (137 mm)
I	0.35" (9 mm)
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J _(Size 2)	4.25" (108 mm)
J _(Size 3)	4.53" (115 mm)
K	0.98" (25 mm)
L _(max)	8.07" (205 mm)
M	M 10
N	2.36" (60 mm)
O	1.57" (40 mm)

Fuse Base
 for fuse links with screwcontacts

 Size
1, 2 and 3

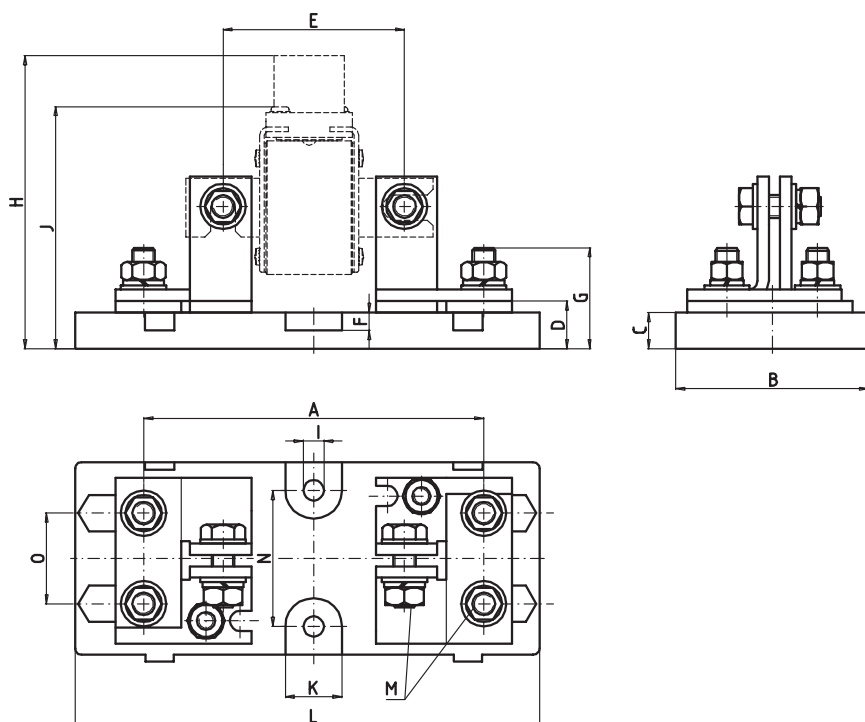
 Rated current
1250 A

 Standard
DIN 43653

Rated Voltage AC	Part No.	Fixing Center	Dimensions	max. Nut Torque	Rated Power acceptance
900 V	21 313 02	80 mm	150 mm	48 Nm	110 W
1400 V	21 323 02	110 mm	180 mm	48 Nm	110 W

Fixing Center
110 mm

A	7.10 " (180 mm)
B	3.35 " (85 mm)
C	0.63 " (16 mm)
D	0.83 " (21 mm)
E	4.33 " (110 mm)
F	0.30 " (8 mm)
G	1.80 " (46 mm)
H_(Size 1)	5.00 " (127 mm)
H_(Size 2)	5.12 " (130 mm)
H_(Size 3)	5.40 " (137 mm)
I	0.35 " (9 mm)
J_(Size 1)	4.10 " (104 mm)
J_(Size 2)	4.25 " (108 mm)
J_(Size 3)	4.53 " (115 mm)
K	0.98 " (25 mm)
L_(max)	8.07 " (205 mm)
M	M 10
N	2.36 " (60 mm)
O	1.57 " (40 mm)

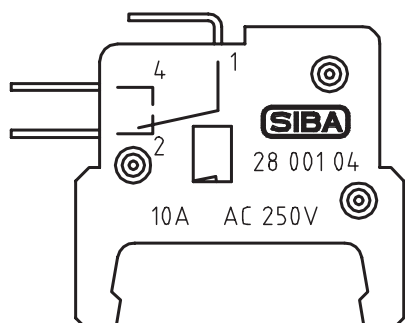

Fixing Center
80 mm

A	5.90 " (150 mm)
B	3.35 " (85 mm)
C	0.63 " (16 mm)
D	0.83 " (21 mm)
E	3.15 " (80 mm)
F	0.30 " (8 mm)
G	1.80 " (46 mm)
H_(Size 1)	5.00 " (127 mm)
H_(Size 2)	5.12 " (130 mm)
H_(Size 3)	5.40 " (137 mm)
I	0.35 " (9 mm)
J_(Size 1)	4.10 " (104 mm)
J_(Size 2)	4.25 " (108 mm)
J_(Size 3)	4.53 " (115 mm)
K	0.98 " (25 mm)
L_(max)	8.07 " (205 mm)
M	M 10
N	2.36 " (60 mm)
O	1.57 " (40 mm)

Microswitch

Rated voltage
AC 250 V

for fuse links with adapter
for microswitch fitting



Rated voltage

Breaking capacity

AC 250 V

non inductive Load	inductive Load
10 A	10 A

Rated voltage

Breaking capacity

	non inductive Load	inductive Load (L/R = 25 ms)
DC 250 V	200 mA	100 mA
DC 60 V	1 A	500 mA
DC 24 V	6 A	3 A

FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD



SIBA cylindrical ultra-rapid fuses are available in 6 different sizes. They can be fitted with or without built-in striker pin for fuse blown indication or operation of microswitches.

Approval: 
 Standard: IEC 60269-1 and -4
 DIN VDE 0636-23
 UL 248-13
 Class: gR/aR/gRL
 Current ratings: 125 mA – 200 A

Size and voltage rating:

5 x 20 mm:	AC 250 V
6.35 x 32 mm:	AC 500 – 1000 V
10 x 38 mm:	AC 600 – 1000 V
14 x 51 mm:	AC 500/600V – 690/700 V
22 x 58 mm:	AC 500/600 V – 690/700 V
27 x 60 mm:	AC 660 V – 1000 V

Features / Benefits

- ▶ High interrupting rating up to 300 kA
- ▶ Voltage rating AC 250 V up to AC 1000 V
- ▶ Protection of Power Semiconductors according to IEC 60269-1 and -4
- ▶ With or without integrated striker pin
- ▶ Class aR according to IEC 60269-4 and DIN VDE 0636-40
- ▶ Class gR according DIN VDE 0636-40
- ▶ Fuse-Bases / Fuse-Clips and Accessories are available

FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD



Selection Guide

Fuse-Links

Size	Rated Voltage AC/DC	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page	
5 x 20	AC 250 V	–	70 001 40	URZ 4	URZ 16	
5 x 20	AC 250 V	–	70 007 40	URZ 4	URZ 16	
6.35 x 32	AC 500/700 V	–	70 125 40	URZ 5	URZ 18	
6.35 x 32	AC 400 V	–	70 065 84	URZ 5	URZ 17	
6.35 x 32	AC/DC 1000 V	–	70 172 40	URZ 6	URZ 19	
10 x 38	AC 500 V	–	60 034 34	URZ 7	URZ 20	
10 x 38	AC 600 V	–	60 033 05	URZ 7	URZ 21	
10 x 38	AC 660 V	–	50 179 06	URZ 8	URZ 22	
10 x 38	AC/DC 1000 V	–	50 199 06	URZ 8	URZ 23	
14 x 51	AC 500/600 V	–	50 058 06	URZ 9	URZ 24	
14 x 51	AC 500/600 V	with striker pin	50 059 06	URZ 9	URZ 24	
14 x 51	AC 690 V	–	50 124 06	URZ 9	URZ 26	
14 x 51	AC 690 V	with striker pin	50 126 06	URZ 9	URZ 26	
14 x 51	AC 690 V	–	50 124 34	URZ 10	URZ 25	
14 x 51	DC 700 V	–	50 118 06	URZ 10	URZ 27	
14 x 51	DC 700 V	–	50 201 06	URZ 11	URZ 28	
22 x 58	AC 500/660 V	–	50 060 06	URZ 12	URZ 29	
22 x 58	AC 500/660 V	with striker pin	50 061 06	URZ 12	URZ 29	
22 x 58	AC 690 V	–	50 140 06	URZ 12	URZ 30	
22 x 58	AC 690 V	with striker pin	50 142 06	URZ 12	URZ 30	
22 x 58	AC 690 V	–	50 140 34	URZ 13	URZ 31	
27 x 60	AC 660 V	–	50 193 20	URZ 14	URZ 32	
27 x 60	AC 660 V	with striker pin	50 194 20	URZ 14	URZ 32	
27 x 60	AC 1000 V	–	50 196 20	URZ 14	URZ 33	
27 x 60	AC 1000 V	with striker pin	50 197 20	URZ 14	URZ 33	
27 x 60	DC 660 V	–	50 190 06	URZ 15	URZ 34	



FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Selection Guide

Fuse-Holder

ZS-Module	Number of Poles	Indicator Type	Part No.	Techn. Data Page	
10 x 38	1	-	51 063 04.DC	URZ 37	
10 x 38	1	-	51 063 04	URZ 37	
10 x 38	2	-	51 063 04.2	URZ 37	
10 x 38	3	-	51 063 04.3	URZ 37	
10 x 38	1	diode indicator	51 063 04.L	URZ 37	
10 x 38	2	diode indicator	51 063 04.2L	URZ 37	
10 x 38	3	diode indicator	51 063 04.3L	URZ 37	
14 x 51	1	-	51 058 04	URZ 37	
14 x 51	2	-	51 058 04.2	URZ 37	
14 x 51	3	-	51 058 04.3	URZ 37	
14 x 51	1	micro switch	51 058 04.S	URZ 37	
14 x 51	2	micro switch	51 058 04.2S	URZ 37	
14 x 51	3	micro switch	51 058 04.3S	URZ 37	
22 x 58	1	-	51 060 04	URZ 37	
22 x 58	2	-	51 060 04.2	URZ 37	
22 x 58	3	-	51 060 04.3	URZ 37	
22 x 58	1	micro switch	51 060 04.S	URZ 37	
22 x 58	3	micro switch	51 060 04.3S	URZ 37	

Selection Guide

Fuse-Clips

Size	Part No.	Techn. Data Page	Type	
10 mm	61 017 01.2	URZ 35		
14 mm	61 001 01.2	URZ 35	screw	
22 mm	61 002 01.3	URZ 35	mountable	
27 mm	61 004 01.3	URZ 35		
14 mm	58 058 06	URZ 36	PCB	
22 mm	58 060 06	URZ 36	mountable	



FUSES FOR SEMICONDUCTOR PROTECTION

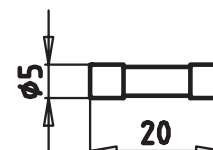
CYLINDRICAL FUSES – EUROPEAN STANDARD

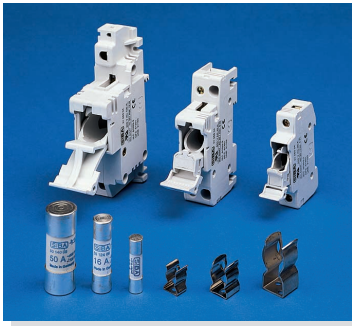
Size
5 x 20 mm

Rated voltage
AC 250 V

Class
aR

Rated current	Part No.	Rated breaking capacity	UL Rec.	Weight (kg/100)	Pack	
100 mA	70 001 40	300 kA	✓	0.14	100	
125 mA	70 001 40	300 kA	✓	0.14	100	
160 mA	70 001 40	300 kA	✓	0.14	100	
200 mA	70 001 40	300 kA	✓	0.14	100	
250 mA	70 001 40	300 kA	✓	0.14	100	
315 mA	70 001 40	300 kA	✓	0.14	100	
400 mA	70 001 40	300 kA	✓	0.14	100	
500 mA	70 001 40	300 kA	✓	0.14	100	
630 mA	70 001 40	300 kA	✓	0.14	100	
800 mA	70 001 40	300 kA	✓	0.14	100	
1 A	70 001 40	300 kA	✓	0.14	100	
1.25 A	70 001 40	300 kA	✓	0.14	100	
1.6 A	70 001 40	300 kA	✓	0.14	100	
2 A	70 001 40	300 kA	✓	0.14	100	
2.5 A	70 001 40	300 kA	✓	0.14	100	
3.15 A	70 001 40	300 kA	✓	0.14	100	
4 A	70 001 40	300 kA	✓	0.14	100	
5 A	70 001 40	300 kA	✓	0.14	100	
6.3 A	70 001 40	1.500 A		0.14	100	
8 A	70 001 40	1.500 A		0.14	100	
10 A	70 001 40	1.500 A		0.14	100	
6.3 A	70 007 40	300 kA	✓	0.14	100	
8 A	70 007 40	300 kA	✓	0.14	100	
10 A	70 007 40	300 kA	✓	0.14	100	
12.5 A	70 007 40	300 kA	✓	0.14	100	





FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
6.35 x 32 mm

Rated voltage
AC 400 V

Class
gRL

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
16 A	70 065 84		0.9	10

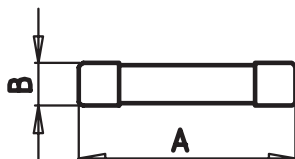
Size
6.35 x 32 mm

Rated voltage
AC 500/700 V

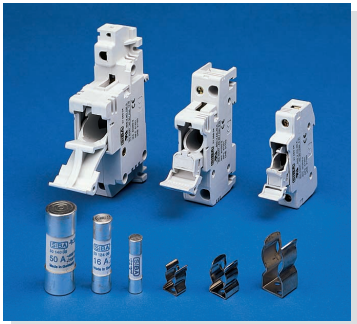
Class
aR

Rated current	Part No.	Rated breaking capacity	Rated voltage AC	UL Rec.	c UL	Weight (kg/100)	Pack
160 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
200 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
250 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
315 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
400 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
500 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
630 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
800 mA	70 125 40	50 kA	700 V	✓	✓	0.24	100
1 A	70 125 40	50 kA	700 V	✓	✓	0.24	100
1.25 A	70 125 40	50 kA	700 V	✓	✓	0.24	100
1.6 A	70 125 40	50 kA	700 V	✓	✓	0.24	100
2 A	70 125 40	50 kA	700 V	✓	✓	0.24	100
2.5 A	70 125 40	50 kA	500 V	✓	✓	0.24	100
3.15 A	70 125 40	50 kA	500 V	✓	✓	0.24	100
4 A	70 125 40	50 kA	500 V	✓	✓	0.24	100
5 A	70 125 40	50 kA	500 V	✓	✓	0.24	100
6.3 A	70 125 40	50 kA	500 V	✓	✓	0.24	100
8 A ¹	70 125 40	50 kA	500 V	✓	✓	0.24	100
10 A ¹	70 125 40	50 kA	500 V	✓	✓	0.24	100
12.5 A ¹	70 125 40	50 kA	500 V	✓	✓	0.24	100
16 A ¹	70 125 40	50 kA	500 V	✓	✓	0.24	100
20 A ¹	70 125 40	50 kA	500 V	✓	✓	0.24	100

¹ Consideration should be given to heat dissipation.



A 1.26" (32 mm)
B 0.25" (6.35 mm)



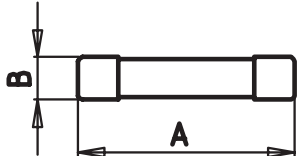
FUSES FOR SEMICONDUCTOR PROTECTION
CYLINDRICAL FUSES – EUROPEAN STANDARD

Size	Rated voltage	DMI	Class
6.35 x 32 mm	AC/DC 1000 V	fuse for digital measuring instruments	aR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
315 mA	70 172 40		0.24	100
500 mA	70 172 40		0.24	100
1.6 A	70 172 40		0.24	100



A	1.26" (32 mm)
B	0.25" (6.35 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
10 x 38 mm

Rated voltage
AC 500 V

Class
gRL

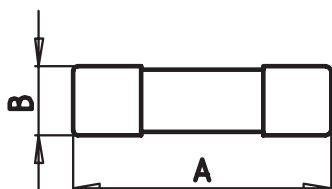
Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	60 034 34	✓	0.9	10	
8 A	60 034 34	✓	0.9	10	
10 A	60 034 34	✓	0.9	10	
12 A	60 034 34	✓	0.9	10	
16 A	60 034 34	✓	0.9	10	
20 A	60 034 34	✓	0.9	10	
25 A	60 034 34	✓	0.9	10	
30 A	60 034 34	✓	0.9	10	

Size
10 x 38 mm

Rated voltage
AC 600 V

Class
aR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
1 A	60 033 05		0.9	10	
2 A	60 033 05		0.9	10	
4 A	60 033 05		0.9	10	
5 A	60 033 05	✓	0.9	10	
6 A	60 033 05	✓	0.9	10	
8 A	60 033 05	✓	0.9	10	
10 A	60 033 05	✓	0.9	10	
12 A	60 033 05	✓	0.9	10	
16 A	60 033 05	✓	0.9	10	
20 A	60 033 05	✓	0.9	10	
25 A	60 033 05	✓	0.9	10	
30 A	60 033 05	✓	0.9	10	



A 1.50" (38 mm)
B 0.40" (10 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
10 x 38 mm

Rated voltage
AC 660 V (IEC) · AC 700 V (UL)

Class
gR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
1 A	50 179 06		0.9	10
2 A	50 179 06		0.9	10
4 A	50 179 06	✓	0.9	10
5 A	50 179 06	✓	0.9	10
6 A	50 179 06	✓	0.9	10
8 A	50 179 06	✓	0.9	10
10 A	50 179 06	✓	0.9	10
12 A	50 179 06	✓	0.9	10
16 A	50 179 06	✓	0.9	10
20 A	50 179 06	✓	0.9	10
25 A	50 179 06	✓	0.9	10
30 A	50 179 06	✓	0.9	10

Size
10 x 38 mm

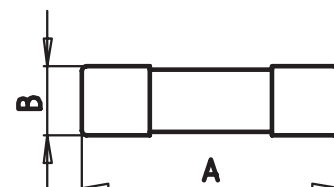
Rated voltage
AC/DC 1000 V

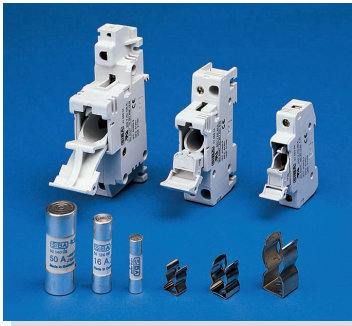
DMI
fuse for digital measuring instruments

Class
gR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack
4 A	50 199 06		0.9	10
6 A	50 199 06		0.9	10
8 A	50 199 06		0.9	10
10 A	50 199 06		0.9	10
12 A	50 199 06		0.9	10
16 A	50 199 06		0.9	10

A 1.50" (38 mm)
B 0.40" (10 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
14 x 51 mm

Rated voltage
AC 500 V (IEC) · AC 600 V (UL)

Class
aR

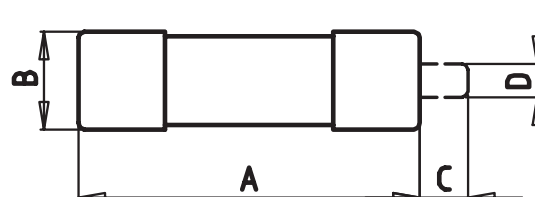
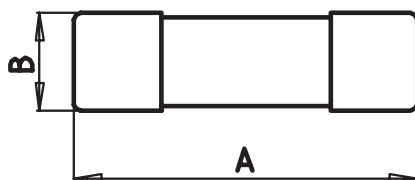
Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
6 A	50 058 06	50 059 06		2.2	10	
8 A	50 058 06	50 059 06		2.2	10	
10 A	50 058 06	50 059 06		2.2	10	
12 A	50 058 06	50 059 06		2.2	10	
16 A	50 058 06	50 059 06		2.2	10	
20 A	50 058 06	50 059 06		2.2	10	
25 A	50 058 06	50 059 06		2.2	10	
32 A	50 058 06	50 059 06		2.2	10	
40 A	50 058 06	50 059 06		2.2	10	
50 A	50 058 06	50 059 06		2.2	10	

Size
14 x 51 mm

Rated voltage
AC 690 V (IEC) · AC 700 V (UL)

Class
gR

Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
6 A	50 124 06	50 126 06	✓	2.2	10	
8 A	50 124 06	50 126 06	✓	2.2	10	
10 A	50 124 06	50 126 06	✓	2.2	10	
12 A	50 124 06	50 126 06	✓	2.2	10	
16 A	50 124 06	50 126 06	✓	2.2	10	
20 A	50 124 06	50 126 06	✓	2.2	10	
25 A	50 124 06	50 126 06	✓	2.2	10	
32 A	50 124 06	50 126 06	✓	2.2	10	
40 A	50 124 06	50 126 06	✓	2.2	10	
50 A	50 124 06	50 126 06		2.2	10	



without striker pin

A 2.00" (51 mm)

B 0.55" (14 mm)

with striker pin

A 2.00" (51 mm)

B 0.55" (14 mm)

C_{min} 0.28" (7 mm)

D 0.20" (4.9 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
14 x 51 mm

Rated voltage
AC 690 V

Class
gRL

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
10 A	50 124 34		2.2	10	
12 A	50 124 34		2.2	10	
16 A	50 124 34		2.2	10	
20 A	50 124 34		2.2	10	
25 A	50 124 34		2.2	10	
30 A	50 124 34		2.2	10	
32 A	50 124 34		2.2	10	
35 A	50 124 34		2.2	10	
40 A	50 124 34		2.2	10	
50 A	50 124 34		2.2	10	

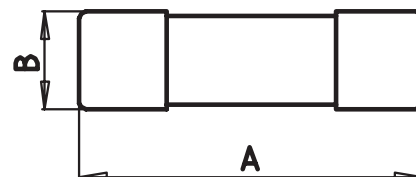
Size
14 x 51 mm

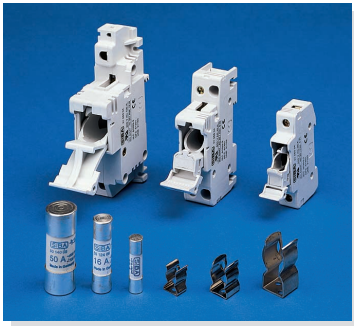
Rated voltage
DC 700 V

Class
gR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
6 A	50 118 06	✓	2.2	10	
8 A	50 118 06	✓	2.2	10	
10 A	50 118 06	✓	2.2	10	
12 A	50 118 06	✓	2.2	10	
16 A	50 118 06	✓	2.2	10	
20 A	50 118 06	✓	2.2	10	
25 A	50 118 06	✓	2.2	10	
30 A	50 118 06	✓	2.2	10	
35 A	50 118 06		2.2	10	
40 A	50 118 06		2.2	10	
50 A	50 118 06		2.2	10	

A 2.00" (51 mm)
B 0.55" (14 mm)

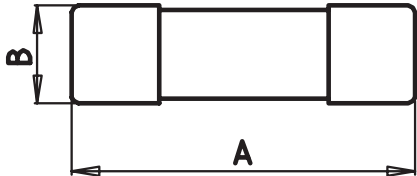




FUSES FOR SEMICONDUCTOR PROTECTION
CYLINDRICAL FUSES – EUROPEAN STANDARD

Size	Rated voltage	Class
14 x 51 mm	DC 700 V	aR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
10 A	50 201 06	✓	2.2	10	
12 A	50 201 06	✓	2.2	10	
16 A	50 201 06	✓	2.2	10	
20 A	50 201 06	✓	2.2	10	
12 A	50 201 06	✓	2.2	10	
25 A	50 201 06	✓	2.2	10	
32 A	50 201 06	✓	2.2	10	
40 A	50 201 06	✓	2.2	10	
50 A	50 201 06	✓	2.2	10	



A	2.00" (51 mm)
B	0.55" (14 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
22 x 58 mm

Rated voltage
AC 500 V (IEC) · AC 600 V (UL)

Class
aR

Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
12 A	50 060 06	50 061 06		5.5	10	
16 A	50 060 06	50 061 06		5.5	10	
20 A	50 060 06	50 061 06		5.5	10	
25 A	50 060 06	50 061 06		5.5	10	
32 A	50 060 06	50 061 06		5.5	10	
40 A	50 060 06	50 061 06		5.5	10	
50 A	50 060 06	50 061 06		5.5	10	
63 A	50 060 06	50 061 06		5.5	10	
80 A	50 060 06	50 061 06		5.5	10	
100 A	50 060 06	50 061 06		5.5	10	

Size
22 x 58 mm

Rated voltage
AC 690 V (IEC) · AC 700 V (UL)

Class
gR

Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
12 A	50 140 06	50 142 06	✓	5.5	10	
16 A	50 140 06	50 142 06	✓	5.5	10	
20 A	50 140 06	50 142 06	✓	5.5	10	
25 A	50 140 06	50 142 06	✓	5.5	10	
32 A	50 140 06	50 142 06	✓	5.5	10	
40 A	50 140 06	50 142 06	✓	5.5	10	
50 A	50 140 06	50 142 06	✓	5.5	10	
63 A	50 140 06	50 142 06	✓	5.5	10	
80 A	50 140 06	50 142 06	✓	5.5	10	
100 A	50 140 06	50 142 06	✓	5.5	10	

without striker pin

A 2.28" (58 mm)

B 0.87" (22 mm)

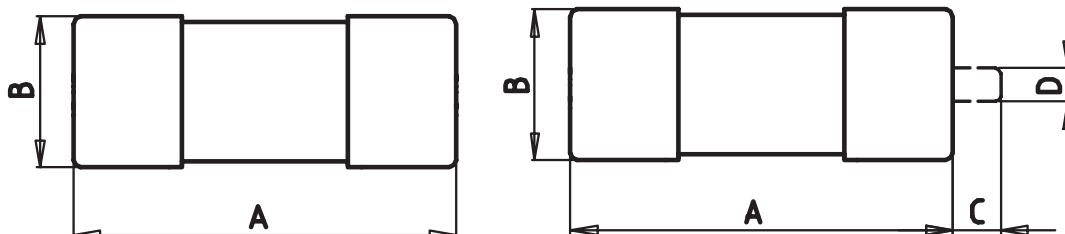
with striker pin

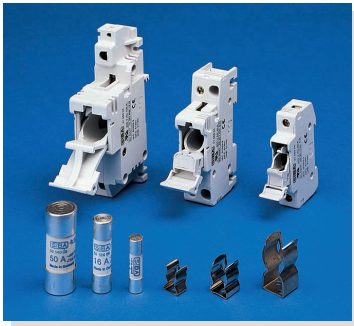
A 2.28" (58 mm)

B 0.87" (22 mm)

C_{min} 0.28" (7 mm)

D 0.20" (4.9 mm)

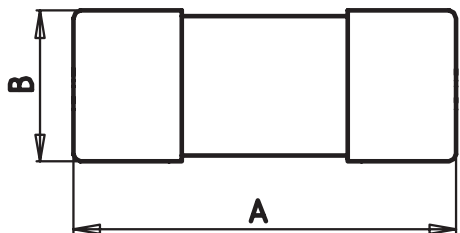




FUSES FOR SEMICONDUCTOR PROTECTION
CYLINDRICAL FUSES – EUROPEAN STANDARD

Size 22 x 58 mm	Rated voltage AC 690 V	Class gRL
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Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
25 A	50 140 34		5.5	10	
30 A	50 140 34		5.5	10	
32 A	50 140 34		5.5	10	
35 A	50 140 34		5.5	10	
50 A	50 140 34		5.5	10	
63 A	50 140 34		5.5	10	
80 A	50 140 34		5.5	10	
100 A	50 140 34		5.5	10	



A	2.28" (58 mm)
B	0.87" (22 mm)



FUSES FOR SEMICONDUCTOR PROTECTION

CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
27 x 60 mm

Rated voltage
AC 660 V

Class
aR

Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
20 A	50 193 20	50 194 20		6.0	10	
25 A	50 193 20	50 194 20		6.0	10	
32 A	50 193 20	50 194 20		6.0	10	
40 A	50 193 20	50 194 20		6.0	10	
50 A	50 193 20	50 194 20		6.0	10	
63 A	50 193 20	50 194 20		6.0	10	
100 A	50 193 20	50 194 20		6.0	10	
125 A	50 193 20	50 194 20		6.0	10	
200 A	50 193 20	50 194 20		6.0	10	
250 A	50 193 20	50 194 20		6.0	10	

Size
27 x 60 mm

Rated voltage
AC 1000 V

Class
aR

Rated current	Part No.	Part No. with striker pin	UL Rec.	Weight (kg/100)	Pack	
32 A	50 196 20	50 197 20		6.0	10	
40 A	50 196 20	50 197 20		6.0	10	
50 A	50 196 20	50 197 20		6.0	10	
63 A	50 196 20	50 197 20		6.0	10	
80 A	50 196 20	50 197 20		6.0	10	
100 A	50 196 20	50 197 20		6.0	10	
125 A	50 196 20	50 197 20		6.0	10	
160 A	50 196 20	50 197 20		6.0	10	
170 A	50 196 20	50 197 20		6.0	10	

without striker pin

A 2.36" (60 mm)

B 1.06" (27 mm)

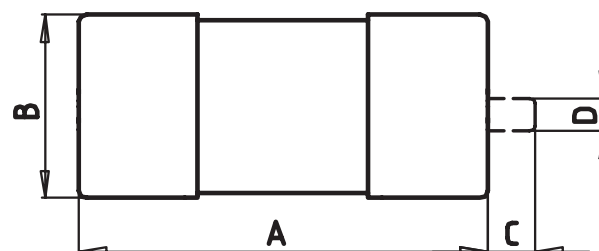
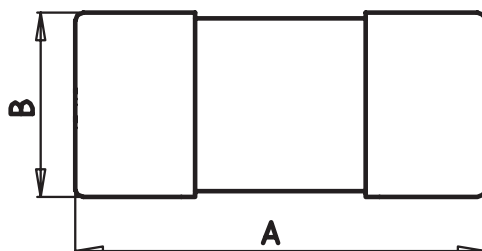
with striker pin

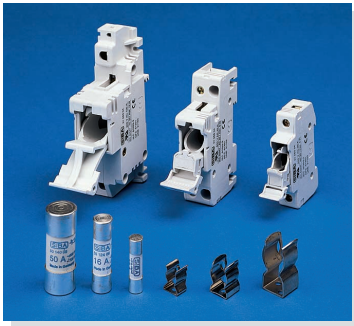
A 2.36" (60 mm)

B 1.06" (27 mm)

C_{min} 0.28" (7 mm)

D 0.20" (4.9 mm)





FUSES FOR SEMICONDUCTOR PROTECTION

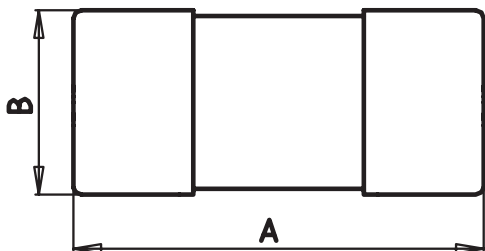
CYLINDRICAL FUSES – EUROPEAN STANDARD

Size
27 x 60 mm

Rated voltage
AC 660 V

Class
gR

Rated current	Part No.	UL Rec.	Weight (kg/100)	Pack	
8 A	50 190 06		6.0	10	
10 A	50 190 06		6.0	10	
12 A	50 190 06		6.0	10	
16 A	50 190 06		6.0	10	
20 A	50 190 06		6.0	10	
25 A	50 190 06		6.0	10	
32 A	50 190 06		6.0	10	
40 A	50 190 06		6.0	10	
50 A	50 190 06		6.0	10	
63 A	50 190 06		6.0	10	
80 A	50 190 06		6.0	10	
100 A	50 190 06		6.0	10	
110 A	50 190 06		6.0	10	



without striker pin
A 2.36" (60 mm)
B 1.06" (27 mm)

Size
5 x 20 mm

 Rated voltage
AC 250 V
Ceramic tube

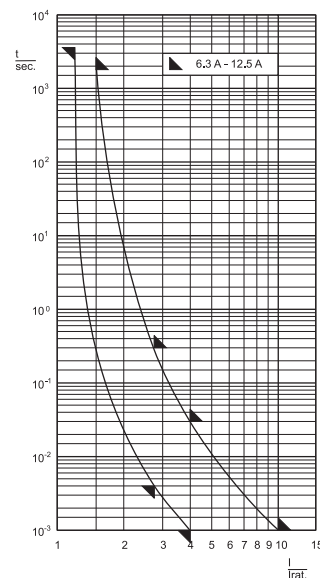
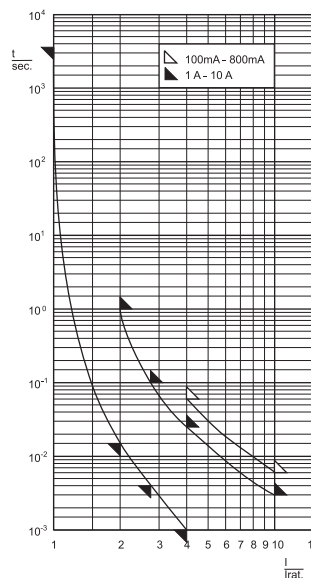
Rated current	Part No.	Max. voltage drop mV	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value A ² s	Rated breaking capacity
100 mA	70 001 40	4000	0.4	0.0016	0.0023	
125 mA	70 001 40	3500	0.5	0.0024	0.0034	
160 mA	70 001 40	1300	0.3	0.004	0.0056	
200 mA	70 001 40	1100	0.3	0.008	0.011	
250 mA	70 001 40	1000	0.3	0.019	0.027	
315 mA	70 001 40	900	0.3	0.03	0.042	
400 mA	70 001 40	850	0.4	0.065	0.09	
500 mA	70 001 40	800	0.4	0.12	0.17	
630 mA	70 001 40	700	0.5	0.17	0.24	300 kA at AC 250 V cos phi < 0.2
800 mA	70 001 40	600	0.5	0.26	0.36	
1 A	70 001 40	750	0.8	0.17	0.26	
1.25 A	70 001 40	750	1.0	0.26	0.39	
1.6 A	70 001 40	700	1.2	0.31	0.51	
2 A	70 001 40	650	1.3	0.64	1	
2.5 A	70 001 40	600	1.5	0.88	1.5	
3.15 A	70 001 40	550	1.8	1.6	2.7	
4 A	70 001 40	500	2.0	3.2	5.4	
5 A	70 001 40	500	2.4	5.9	10	
6.3 A	70 001 40	450	2.8	10	17	1500 kA at AC 250 V
8 A	70 001 40	400	3.2	19	32	
10 A	70 001 40	400	4.0	30	54	
6.3 A	70 007 40	250	2.8	1.6	4.8	300 kA at AC 250 V cos phi < 0.2
8 A	70 007 40	250	3.0	4.5	14	
10 A	70 007 40	200	3.4	8.8	26	
12.5 A	70 007 40	200	4.0	15	44	

Pre-arcing time limits**Part No. 70 001 40**

Rated current	1.0 I_{rat}	2.0 I_{rat}	2.75 I_{rat}	4 I_{rat}	10 I_{rat}
160 mA ▼ 800 mA	> 1 h	> 1 h	> 1 h	< 60 ms	< 6 ms
1 A ▼ 5 A		15 ms ▼ 1 s	4 ms ▼ 100 ms	1 ms ▼ 25 ms	< 3 ms

Part No. 70 007 40

Rated current	1.2 I_{rat}	1.5 I_{rat}	2.75 I_{rat}	4 I_{rat}	10 I_{rat}
6.3 A ▼ 20 A	> 1 h	< 30 min	4 ms ▼ 300 ms	1 ms ▼ 30 ms	< 1 ms



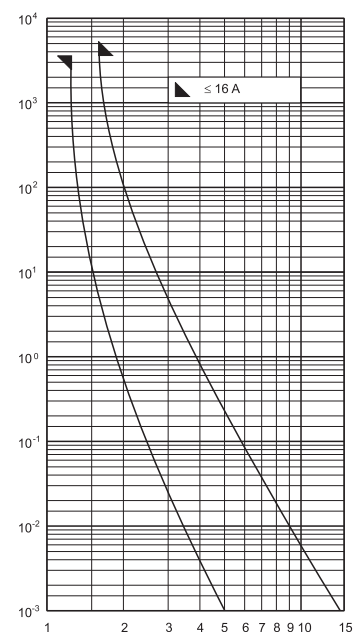
Size
6.35 x 32 mm

 Rated voltage
AC 400 V

 Operating class
gRL

 Rated breaking capacity
100 kA

Rated current	Part No. without striker	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value A ² s
16 A	70 065 84	2.3	20	120



Size
6.35 x 32 mm

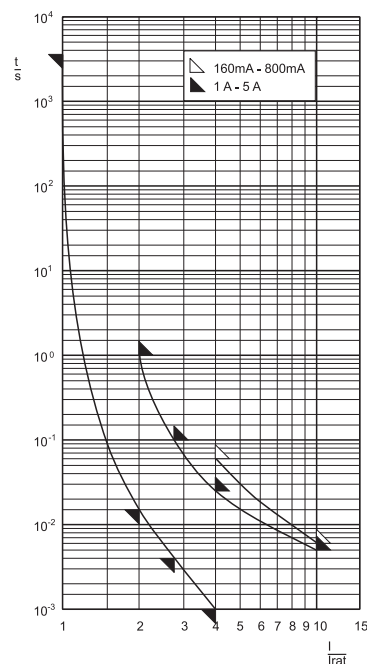
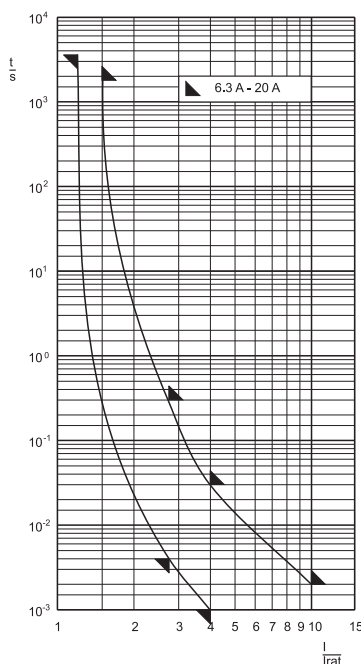
Rated Voltage
AC 500/700 V

Ceramic tube

Rated current	Part No.	Max. voltage drop mV	Pre-arcing I^2t -value A ² s	Total I^2t -value A ² s	Rated breaking capacity	Rated voltage
160 mA	70 125 40	2,000	0.004	0.014		
200 mA	70 125 40	1,600	0.008	0.03		
250 mA	70 125 40	1,500	0.024	0.08		
315 mA	70 125 40	1,350	0.035	0.12		
400 mA	70 125 40	1,030	0.07	0.24	50 kA at AC 700 V cos phi < 0.2	AC 700 V
500 mA	70 125 40	950	0.14	0.48		
630 mA	70 125 40	860	0.14	0.5		
800 mA	70 125 40	760	0.22	0.8		
1 A	70 125 40	1,100	0.14	0.5		
1.25 A	70 125 40	1,000	0.22	0.8		
1.6 A	70 125 40	900	0.31	1.1		
2 A	70 125 40	800	0.64	2.2		
2.5 A	70 125 40	800	1.2	3		
3.15 A	70 125 40	700	2	5		
4 A	70 125 40	500	5	13		
5 A	70 125 40	400	10	25	50 kA at AC 500 V cos phi < 0.2	AC 500 V
6.3 A	70 125 40	400	3	14		
8 A	70 125 40	350	6.5	30		
10 A	70 125 40	350	12	55		
12.5 A	70 125 40	300	18	80		
16 A	70 125 40	300	31	140		
20 A	70 125 40	300	46	200		

Pre-arcing time limits

Rated current	1.0 I_{rat}	2.0 I_{rat}	2.75 I_{rat}	4 I_{rat}	10 I_{rat}
160 mA ▼ 800 mA	> 1 h	> 1 h	> 1 h	< 60 ms	< 6 ms
1 A ▼ 5 A		15 ms ▼ 1 s	4 ms ▼ 100 ms	1 ms ▼ 25 ms	< 5 ms
Rated current	1.2 I_{rat}	1.5 I_{rat}	2.75 I_{rat}	4 I_{rat}	10 I_{rat}
6.3 A ▼ 20 A	> 1 h	< 30 min	4 ms ▼ 300 ms	1 ms ▼ 30 ms	< 2 ms



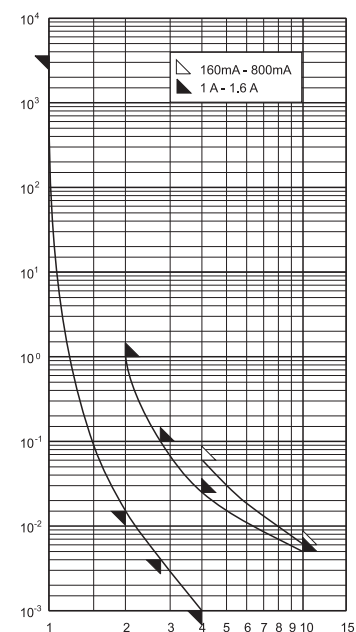
Size
6.35 x 32 mm

Rated voltage
AC/DC 1000 V

Rated current	Part No. without striker	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 600 V A ² s	Rated breaking capacity
315 mA	70 172 40	0.7	0.35	0.35	50 kA at AC 1000 V cos phi < 0.19 50 kA at DC 1000 V L/R = 1 ms
500 mA	70 172 40	0.8	0.14	1.5	
1.6 A	70 172 40	1.9	0.31	3	

Pre-arcing time limits

Rated current	1.0 I _{rat}	2.0 I _{rat}	2.75 I _{rat}	4 I _{rat}	10 I _{rat}
315 mA ▼ 500 mA	> 1 h	> 1 h	> 1 h	< 60 ms	< 6 ms
1.6 A		15 ms ▼ 1 s	4 ms ▼ 100 ms	1 ms ▼ 25 ms	< 5 ms



Size
10 x 38 mm

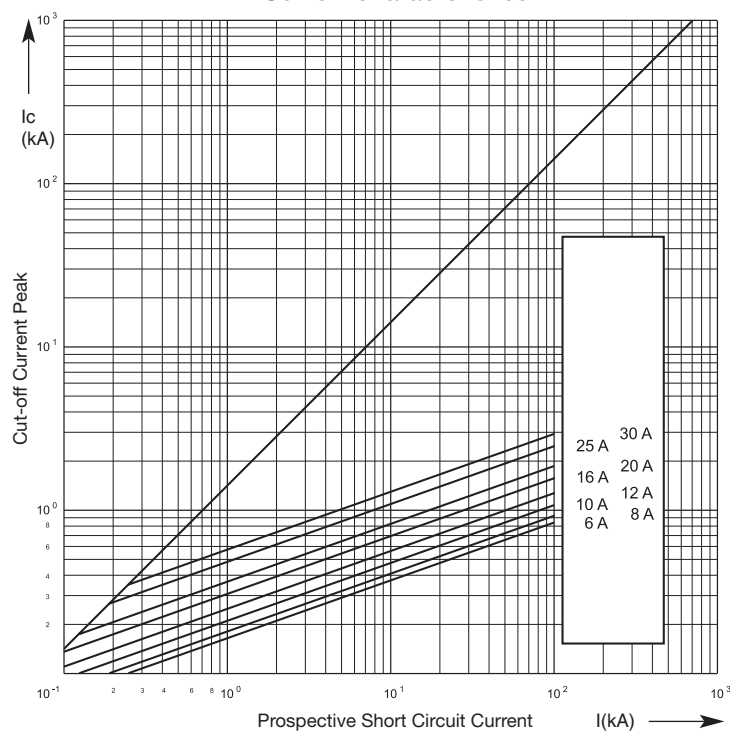
 Rated voltage
AC 500 V

 Operating class
gRL

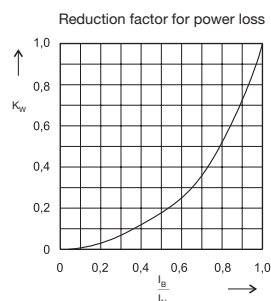
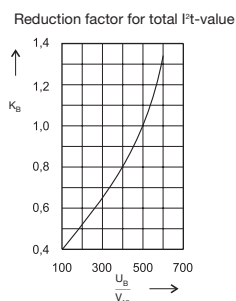
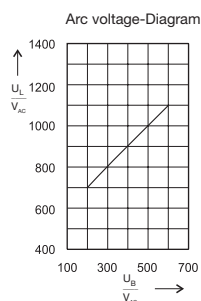
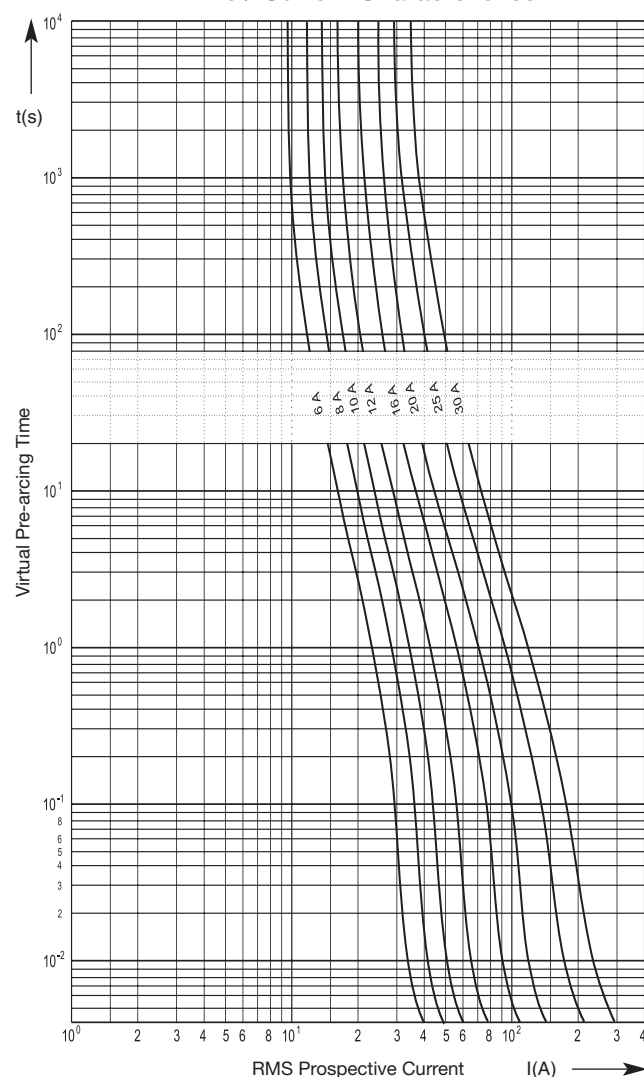
 Rated breaking capacity
100 kA

Rated current	Part No. without striker	Power Loss	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 500 V A ² s	
6 A	60 034 34	1	2.5	20	
8 A	60 034 34	1.3	3.3	36	
10 A	60 034 34	1.1	5.1	41	
12 A	60 034 34	1.9	8.7	69	
16 A	60 034 34	2.4	17	130	
20 A	60 034 34	3.5	29	240	
25 A	60 034 34	3.8	66	530	
30 A	60 034 34	4.3	120	950	

Cut-off-characteristics



Time / Current Characteristics



Size
10 x 38 mm

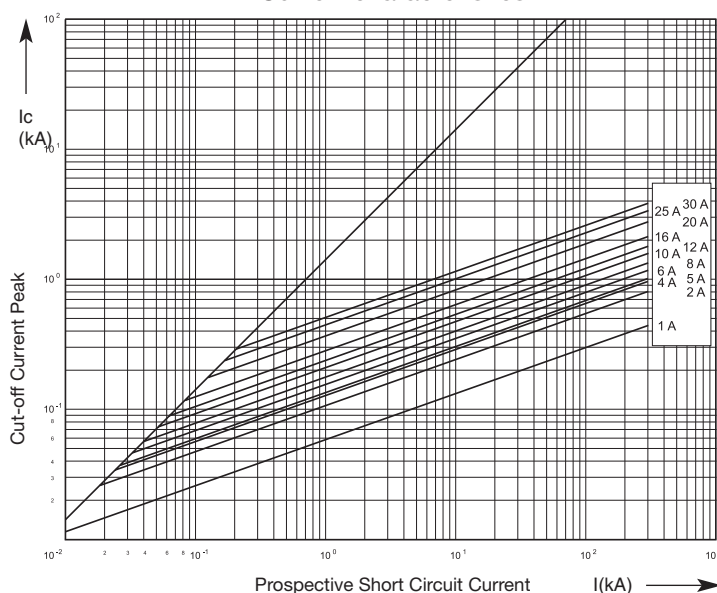
Rated voltage
AC 600 V

Operating class
aR

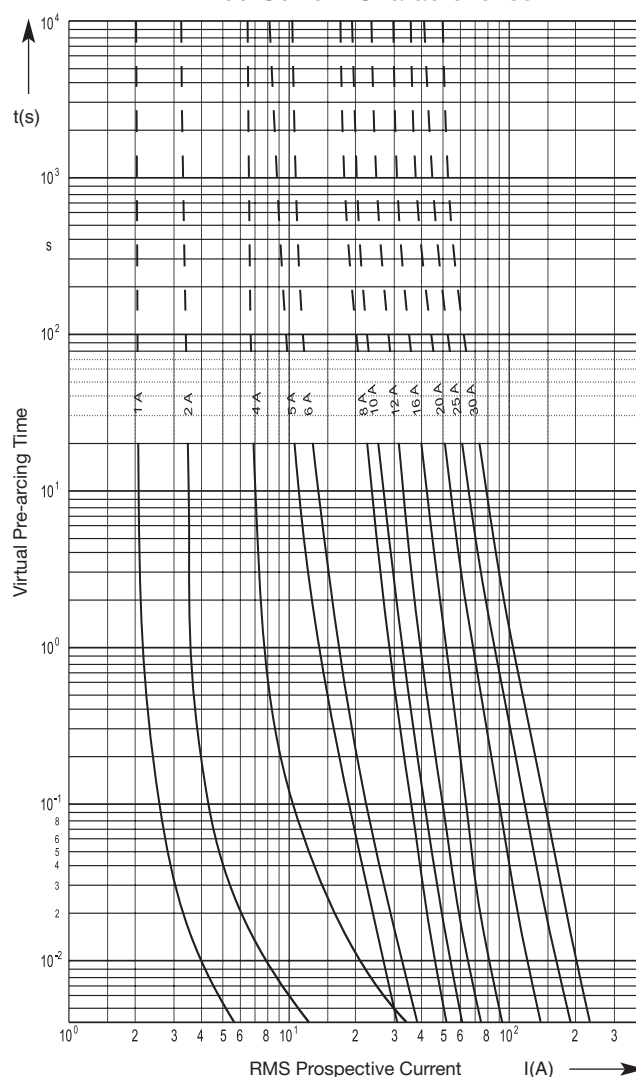
Rated breaking capacity
300 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 600 V A ² s
1 A	60 033 05	1	0.1	0.9
2 A	60 033 05	1.8	0.64	5.8
4 A	60 033 05	1.1	1.1	6
5 A	60 033 05	1.4	1.3	12
6 A	60 033 05	1.6	2.0	18
8 A	60 033 05	1.8	3	28
10 A	60 033 05	2.1	5.1	48
12 A	60 033 05	2.5	7.4	63
16 A	60 033 05	3	13	120
20 A	60 033 05	3.6	29	200
25 A	60 033 05	4.5	52	420
30 A	60 033 05	5.8	81	730

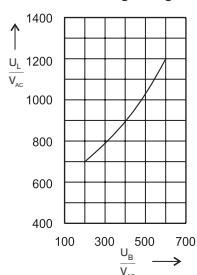
Cut-off-characteristics



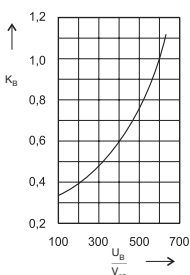
Time / Current Characteristics



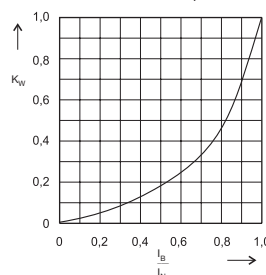
Arc voltage-Diagram



Reduction factor for total I²t-value



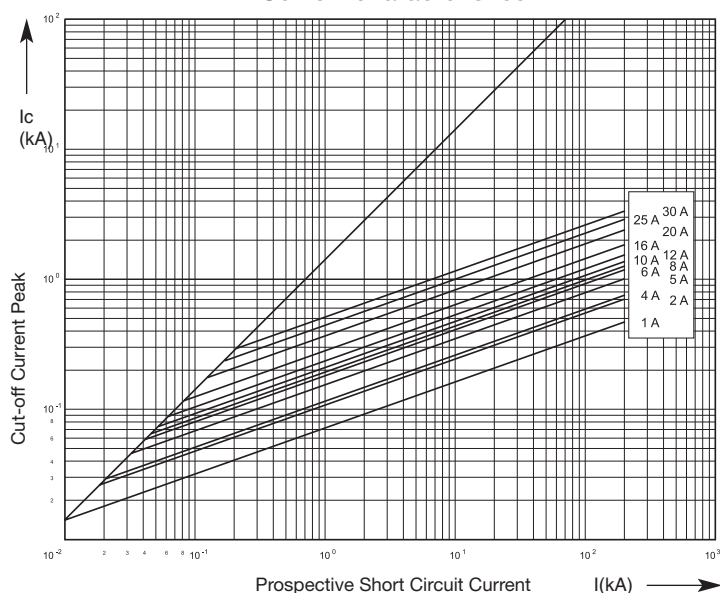
Reduction factor for power loss



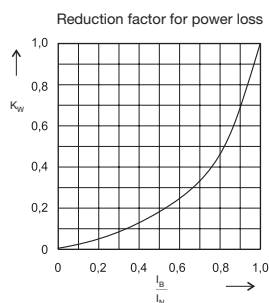
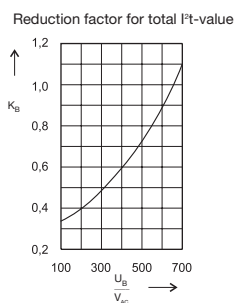
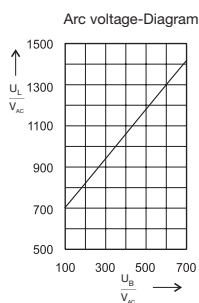
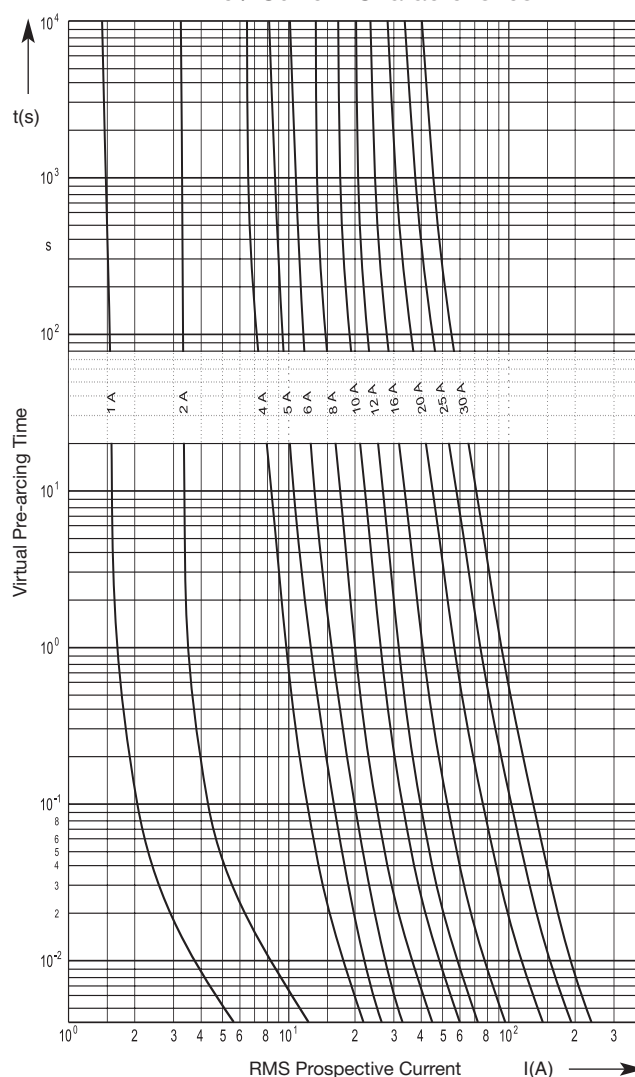
Size **10 x 38 mm** Rated voltage **AC 660 V (IEC) · AC 700 V (UL)** Operating class **gR** Rated breaking capacity **200 kA**

Rated current	Part No.	Power loss W	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 660 V A ² s	
1 A	50 179 06	1.0	0.93	1.6	
2 A	50 179 06	1.8	0.64	8	
4 A	50 179 06	1.1	0.8	10	
5 A	50 179 06	1.5	2.0	25	
6 A	50 179 06	1.8	3.0	38	
8 A	50 179 06	1.8	3.1	39	
10 A	50 179 06	2.3	5.1	64	
12 A	50 179 06	2.8	7.4	93	
16 A	50 179 06	3.7	13.1	164	
20 A	50 179 06	4.7	29	360	
25 A	50 179 06	5.4	52	650	
30 A	50 179 06	6.4	81	1,010	

Cut-off-characteristics



Time / Current Characteristics



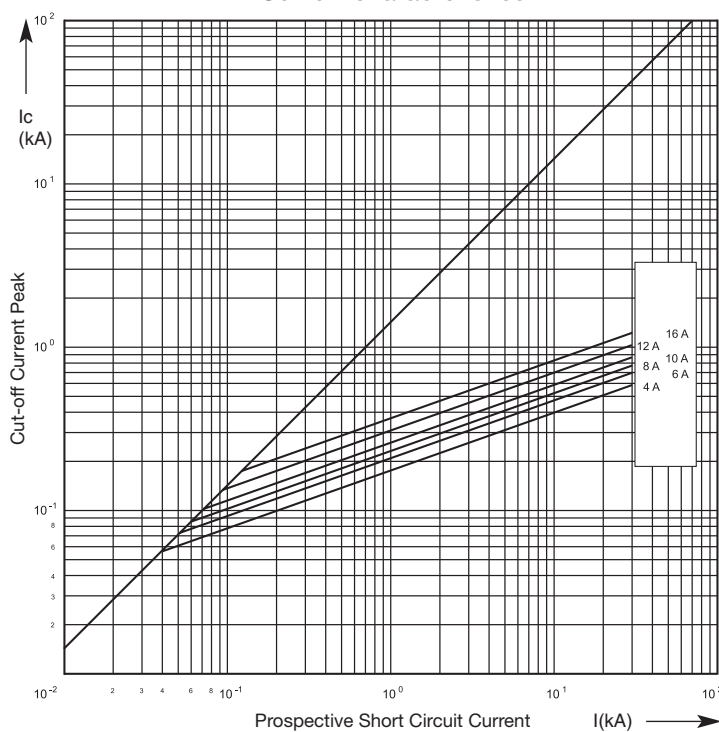
Size
10 x 38 mm

Rated voltage
AC/DC 1000 V

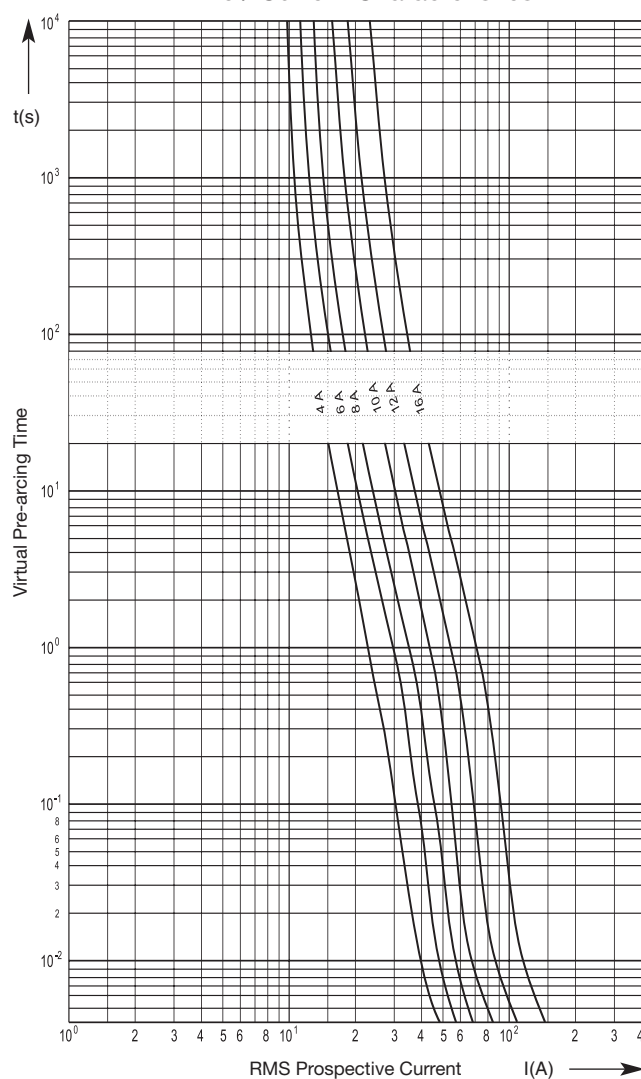
Rated breaking capacity
30 kA (cos phi 0.5 / L/R = 1 ms)

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ AC 1000 V A ² s	Total I ² t-value @ DC 1000 V A ² s	
4 A	50 199 06	0.5	3	35	18	
6 A	50 199 06	0.7	5	55	28	
8 A	50 199 06	1.1	7	79	40	
10 A	50 199 06	1.5	10	106	53	
12 A	50 199 06	1.6	17	180	90	
16 A	50 199 06	2.1	30	320	160	

Cut-off-characteristics



Time / Current Characteristics



Size
14 x 51 mm

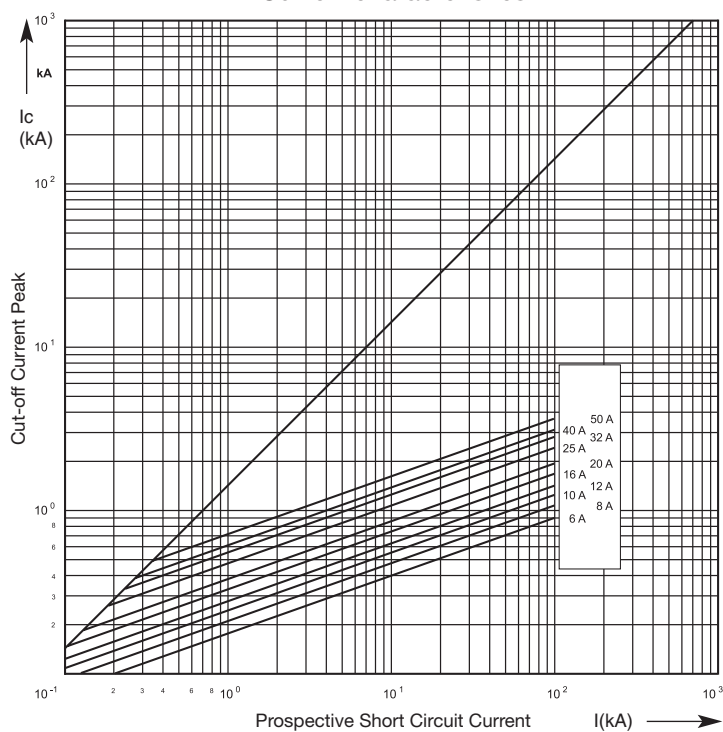
 Rated voltage
AC 600 V

 Operating class
aR

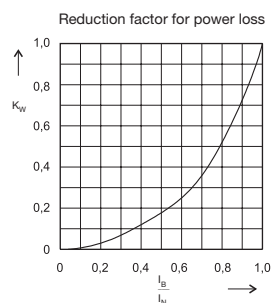
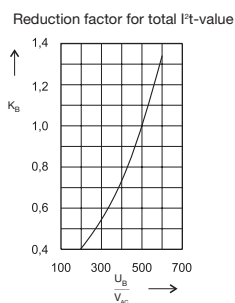
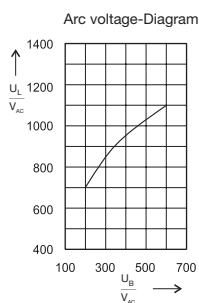
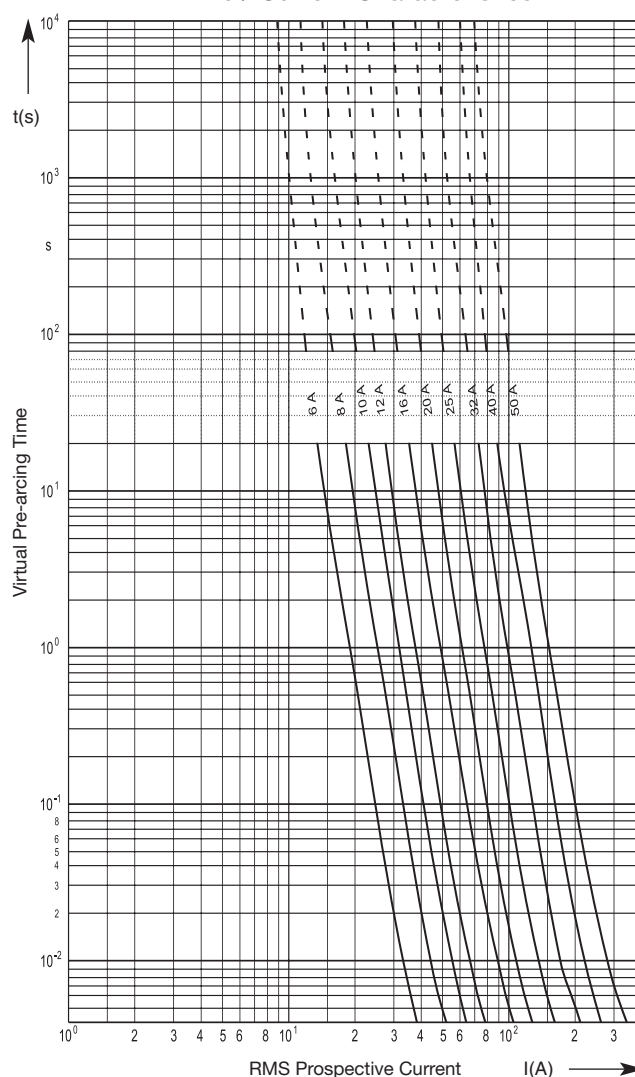
 Rated breaking capacity
100 kA

Rated current	Part No.	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 500 V A ² s
6 A	50 058 06	50 059 06	1.3	3	18
8 A	50 058 06	50 059 06	1.7	5	27
10 A	50 058 06	50 059 06	2.4	8	48
12 A	50 058 06	50 059 06	2.5	12	93
16 A	50 058 06	50 059 06	4.0	21	150
20 A	50 058 06	50 059 06	4.6	32	250
25 A	50 058 06	50 059 06	6.4	63	400
32 A	50 058 06	50 059 06	8.2	104	680
40 A	50 058 06	50 059 06	9.1	140	1,200
50 A	50 058 06	50 059 06	12.0	230	1,600

Cut-off-characteristics



Time / Current Characteristics



Size
14 x 51 mm

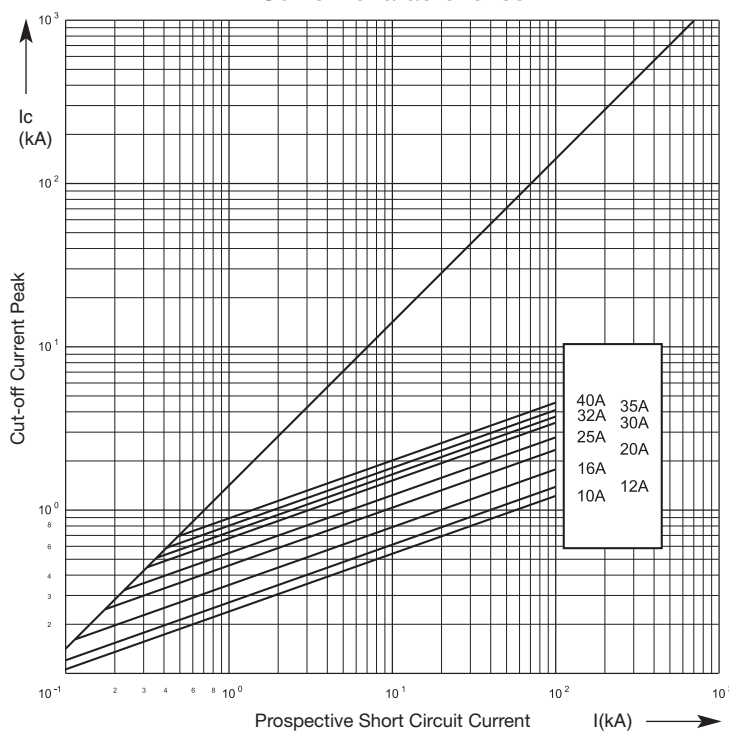
Rated voltage
AC 690 V

Operating class
gRL

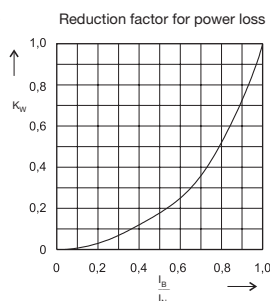
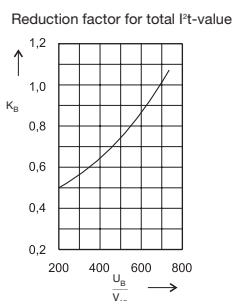
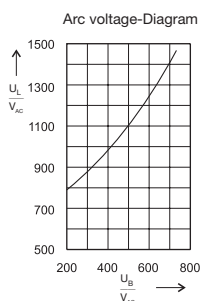
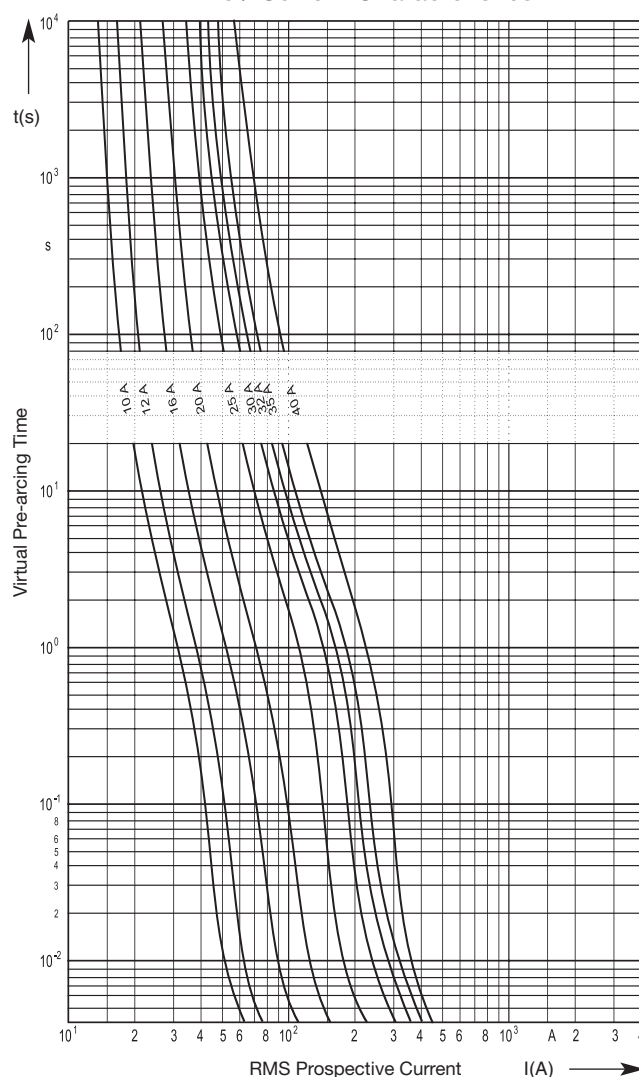
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s
10 A	50 124 34	1.9	8	60
12 A	50 124 34	2.3	12	90
16 A	50 124 34	2.8	25	190
20 A	50 124 34	3.0	46	340
25 A	50 124 34	3.2	100	740
30 A	50 124 34	3.8	190	1,400
32 A	50 124 34	4.0	250	1,900
35 A	50 124 34	4.2	370	2,800
40 A	50 124 34	4.4	420	3,100

Cut-off-characteristics



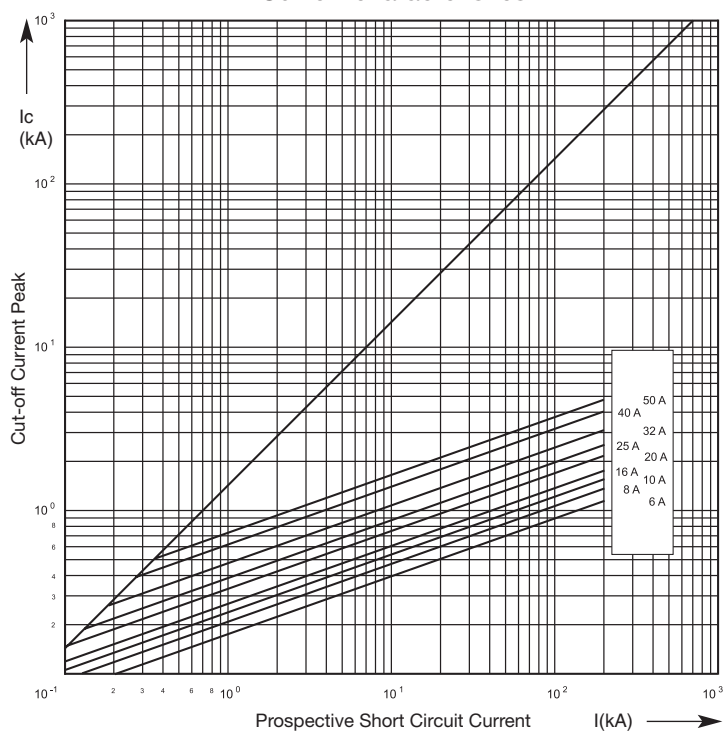
Time / Current Characteristics



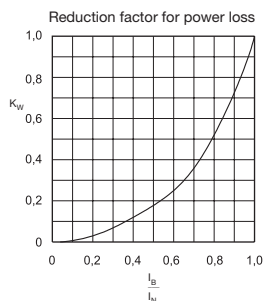
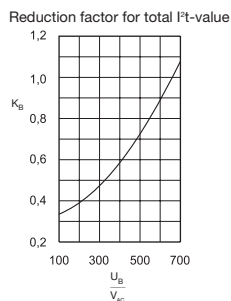
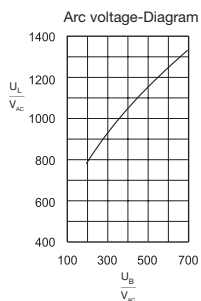
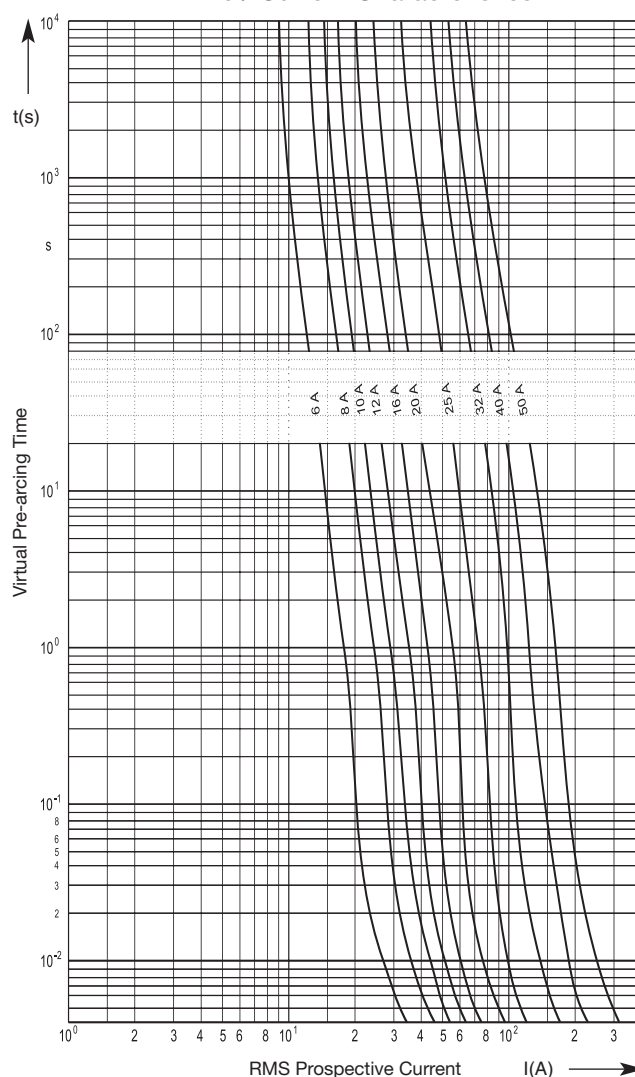
Size **14 x 51 mm** Rated voltage **AC 690 V (IEC) · AC 700 V (UL)** Operating class **gR** Rated breaking capacity **200 kA**

Rated current	Part No. without striker pin	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
6 A	50 124 06	50 126 06	1.3	2.9	18
8 A	50 124 06	50 126 06	1.7	5.1	28
10 A	50 124 06	50 126 06	2.6	7.7	39
12 A	50 124 06	50 126 06	3.1	8.1	75
16 A	50 124 06	50 126 06	4.7	11	115
20 A	50 124 06	50 126 06	6.0	21	190
25 A	50 124 06	50 126 06	7.6	32	340
32 A	50 124 06	50 126 06	9.5	63	620
40 A	50 124 06	50 126 06	10.0	140	1,050
50 A	50 124 06	50 126 06	12.0	250	1,900

Cut-off-characteristics



Time / Current Characteristics



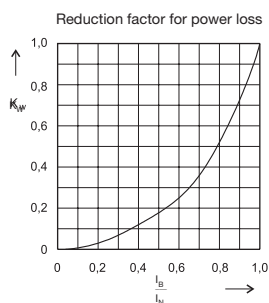
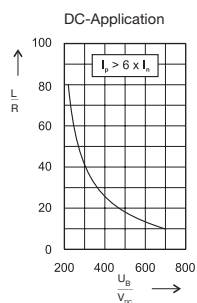
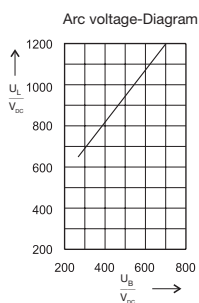
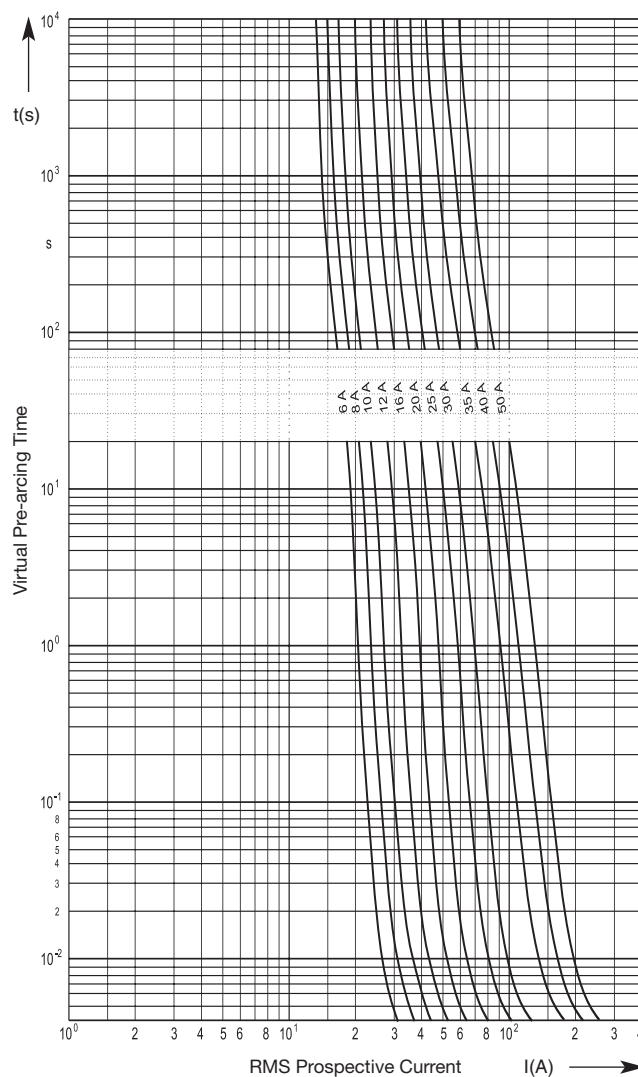
Size
14 x 51 mm

Rated voltage
DC 700 V

Rated breaking capacity
50 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 700 V A ² s
6 A	50 118 06	1.3	2.0	12
8 A	50 118 06	1.7	2.9	17
10 A	50 118 06	2.6	3.9	25
12 A	50 118 06	3.1	6.5	41
16 A	50 118 06	4.7	8.0	52
20 A	50 118 06	6.0	12	70
25 A	50 118 06	7.6	20	130
30 A	50 118 06	9.8	32	190
35 A	50 118 06	10.3	72	430
40 A	50 118 06	11.2	103	620
50 A	50 118 06	12.6	128	770

Time / Current Characteristics



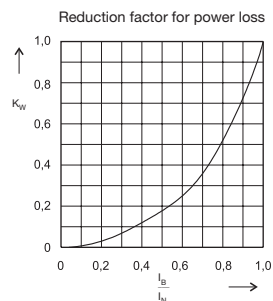
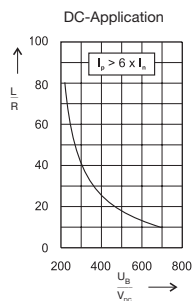
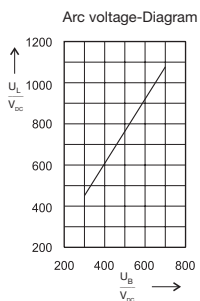
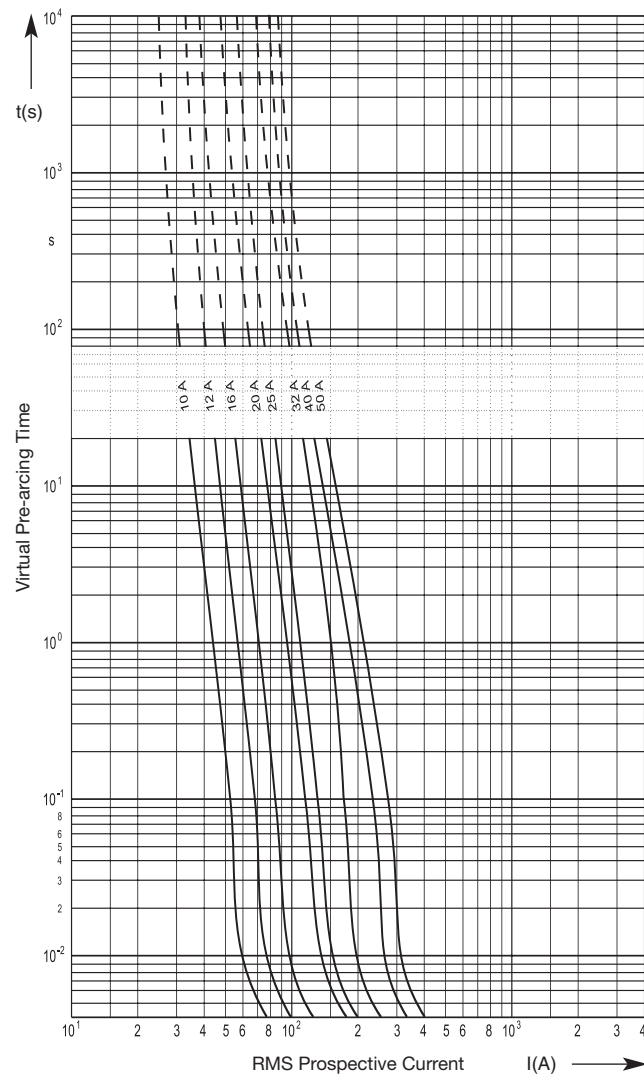
Size
14 x 51 mm

 Rated voltage
DC 700 V

 Rated breaking capacity
30 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 700 V A ² s	
10 A	50 201 06	1.1	12	67	
12 A	50 201 06	1.2	20	120	
16 A	50 201 06	2.0	32	190	
20 A	50 201 06	2.3	63	360	
25 A	50 201 06	3.1	82	480	
32 A	50 201 06	4.1	130	740	
40 A	50 201 06	4.6	250	1,460	
50 A	50 201 06	7.0	330	1,900	

Time / Current Characteristics



Size
22 x 58 mm

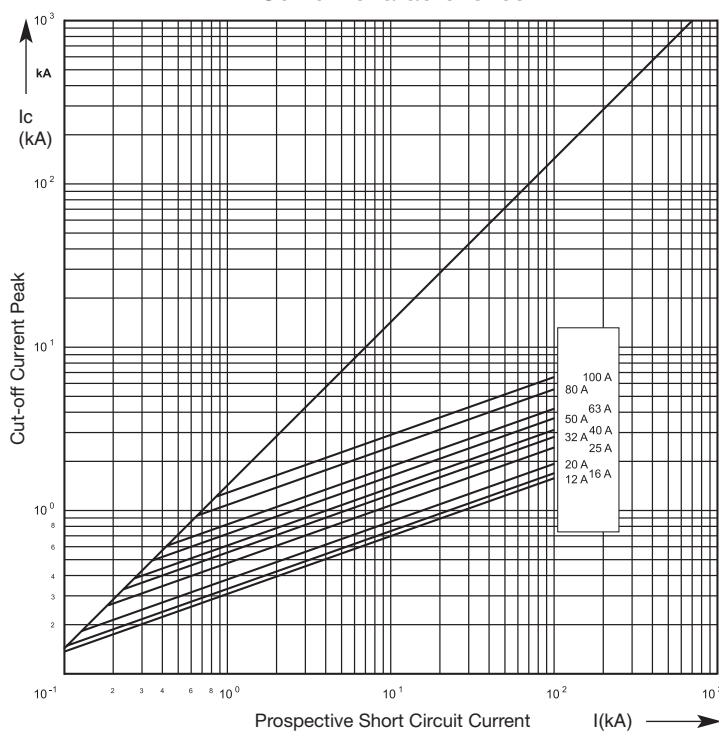
Rated voltage
AC 600 V

Operating class
aR

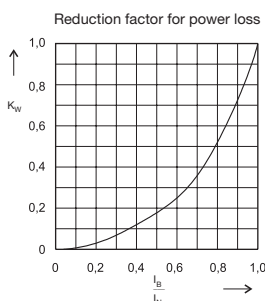
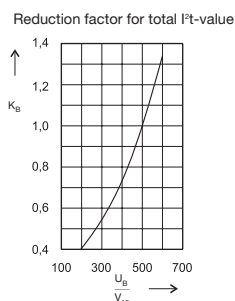
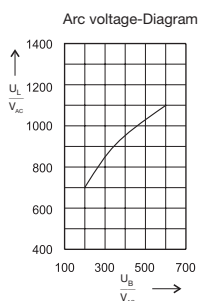
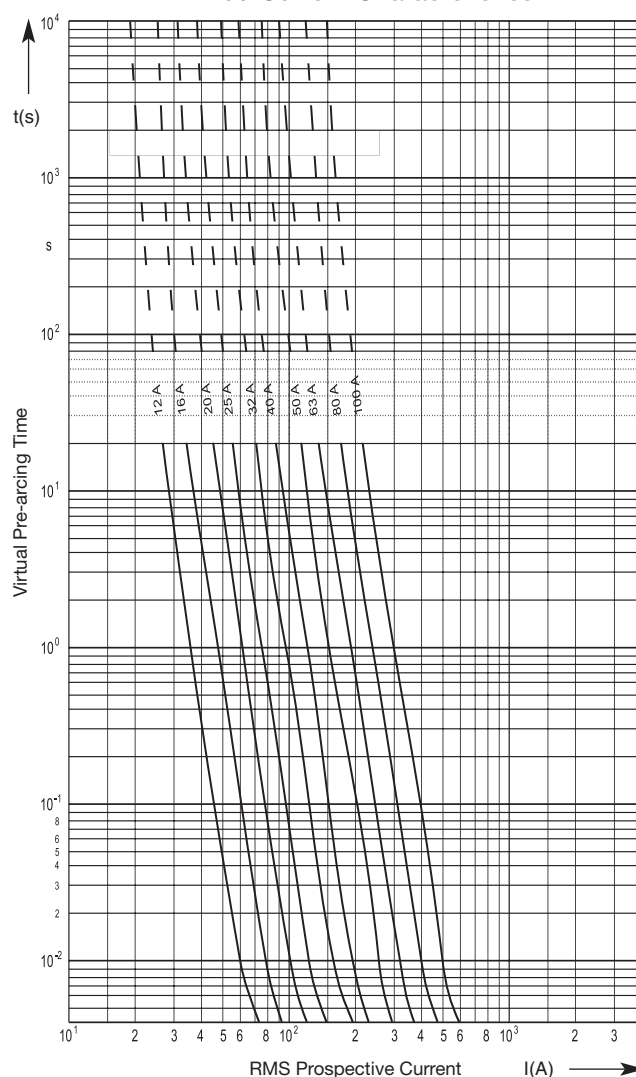
Rated breaking capacity
100 kA

Rated current	Part No.	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 500 V A ² s
12 A	50 060 06	50 061 06	2.1	16	93
16 A	50 060 06	50 061 06	3.6	21	170
20 A	50 060 06	50 061 06	4.6	32	250
25 A	50 060 06	50 061 06	5.3	63	400
32 A	50 060 06	50 061 06	8.2	104	730
40 A	50 060 06	50 061 06	8.6	140	1000
50 A	50 060 06	50 061 06	11	230	1800
63 A	50 060 06	50 061 06	15	350	2600
80 A	50 060 06	50 061 06	18	740	5000
100 A	50 060 06	50 061 06	20	1400	10000

Cut-off-characteristics



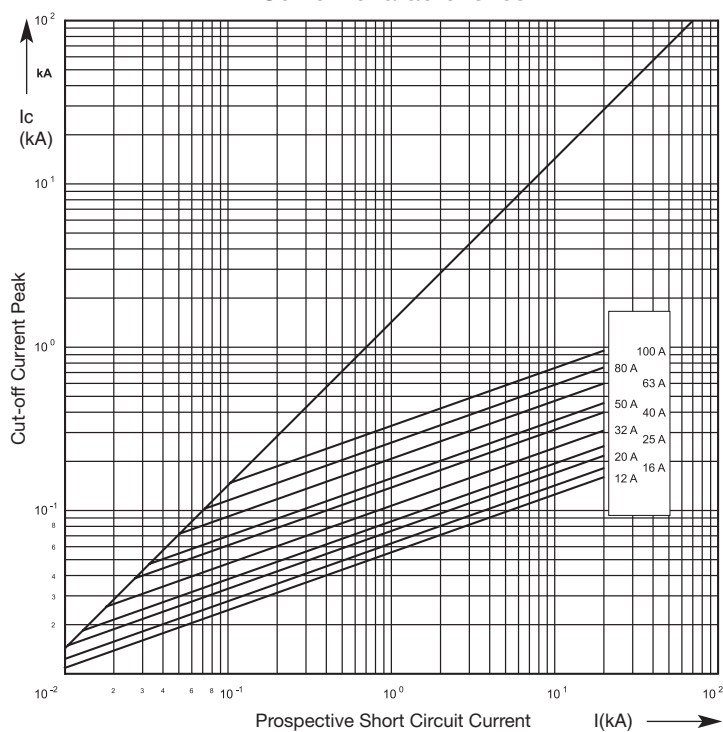
Time / Current Characteristics



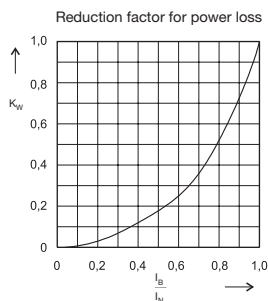
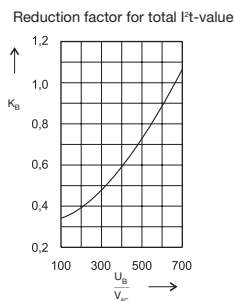
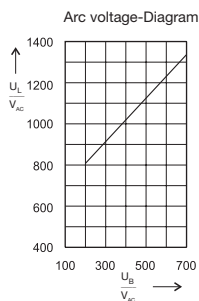
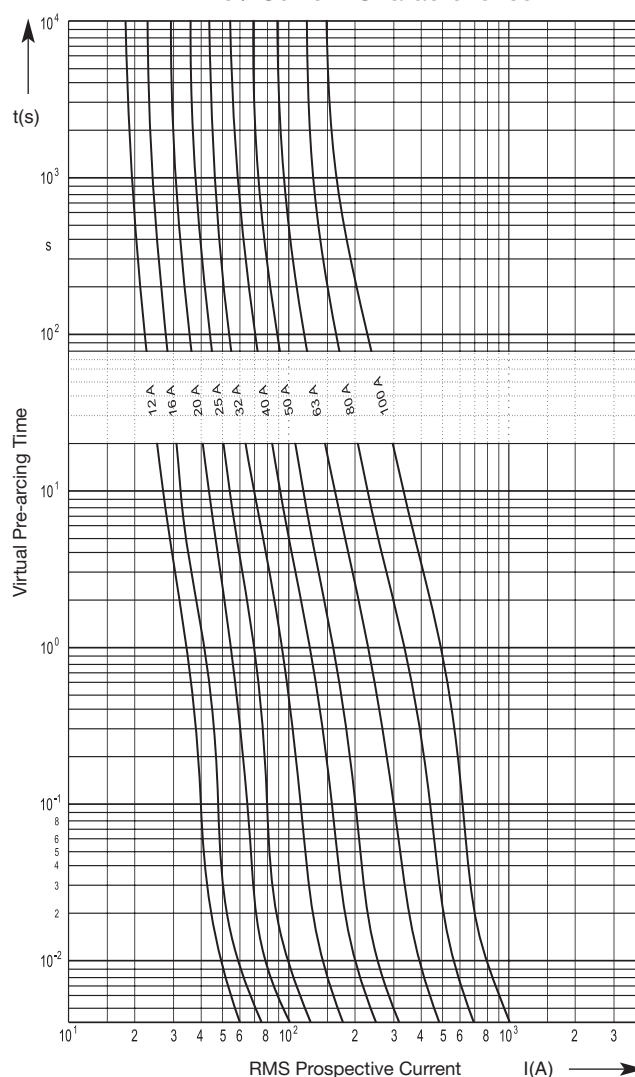
Size **22 x 58 mm** Rated voltage **AC 690 V (IEC) · AC 700 V (UL)** Operating class **gR** Rated breaking capacity **200 kA**

Rated current	Part No.	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
12 A	50 140 06	50 142 06	4.8	8	35
16 A	50 140 06	50 142 06	5.5	12	52
20 A	50 140 06	50 142 06	6.0	21	91
25 A	50 140 06	50 142 06	7.2	32	140
32 A	50 140 06	50 142 06	9.6	63	315
40 A	50 140 06	50 142 06	12	140	610
50 A	50 140 06	50 142 06	15	210	910
63 A	50 140 06	50 142 06	16	510	2,260
80 A	50 140 06	50 142 06	18	1,000	4,400
100 A	50 140 06	50 142 06	19	2,050	8,900

Cut-off-characteristics



Time / Current Characteristics



Size
22 x 58 mm

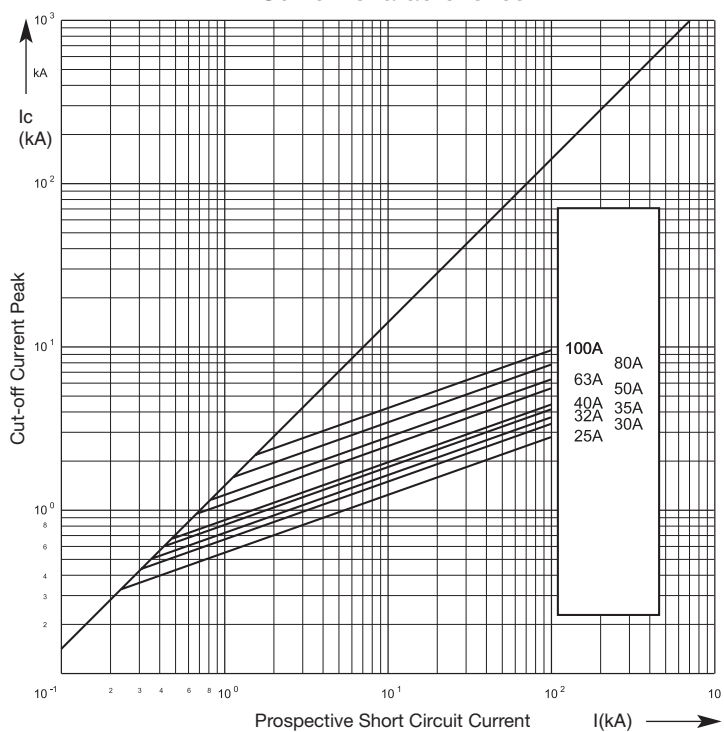
Rated voltage
AC 690 V

Operating class
gRL

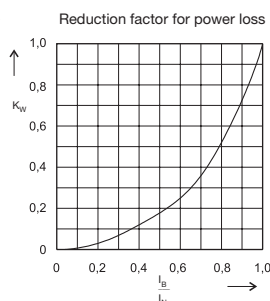
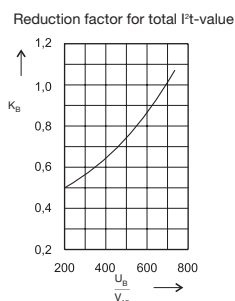
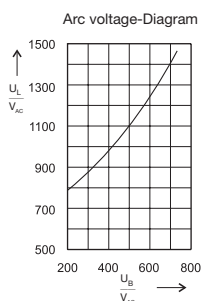
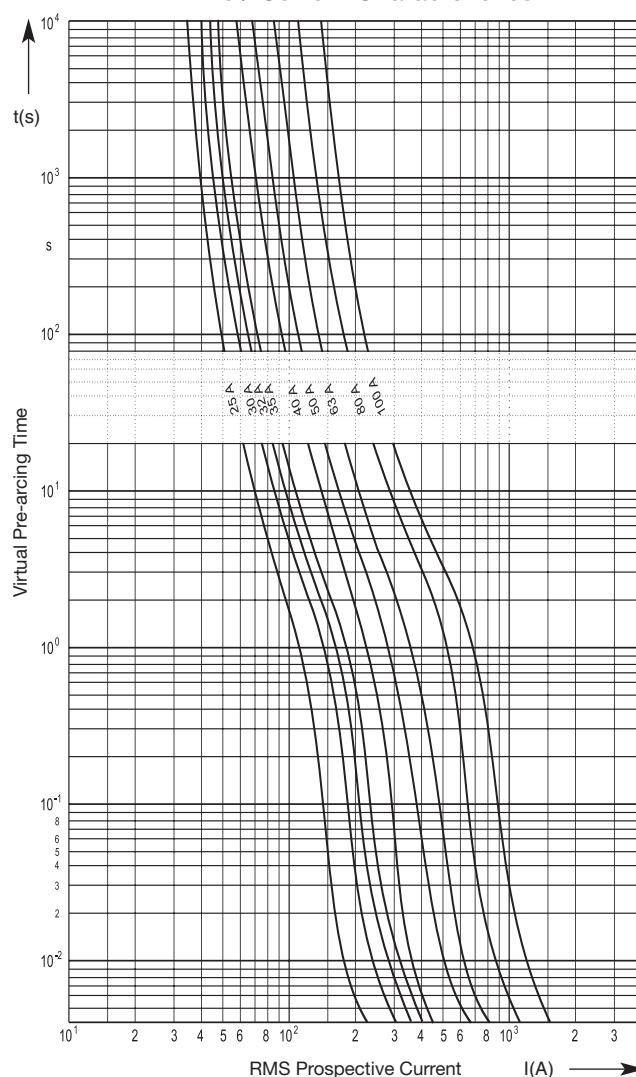
Rated breaking capacity
100 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 690 V A ² s
25 A	50 140 34	3.6	100	800
30 A	50 140 34	4.6	190	1,500
32 A	50 140 34	4.8	250	2,000
35 A	50 140 34	5.0	370	3,000
40 A	50 140 34	5.2	420	3,400
50 A	50 140 34	5.4	870	7,000
63 A	50 140 34	6.8	1,300	10,500
80 A	50 140 34	7.5	2,500	20,000
100 A	50 140 34	7.7	4,600	37,000

Cut-off-characteristics



Time / Current Characteristics



Size
27 x 60 mm

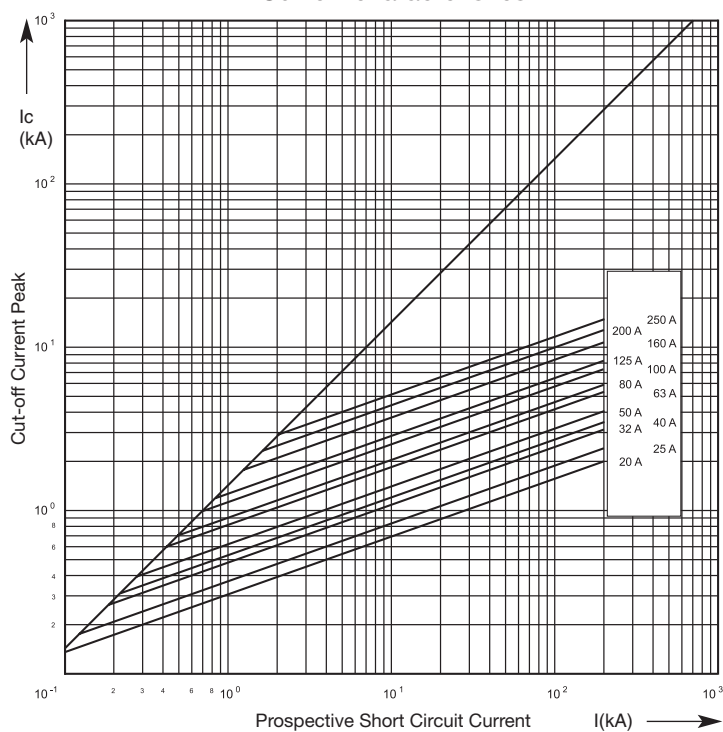
 Rated voltage
AC 660 V

 Operating class
aR

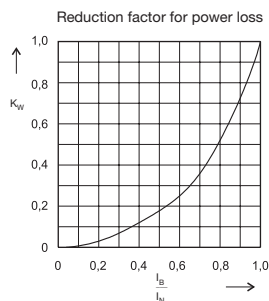
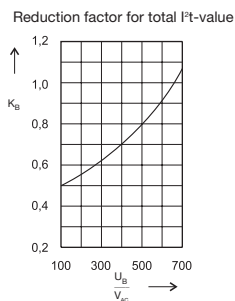
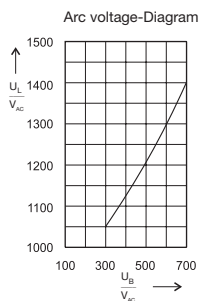
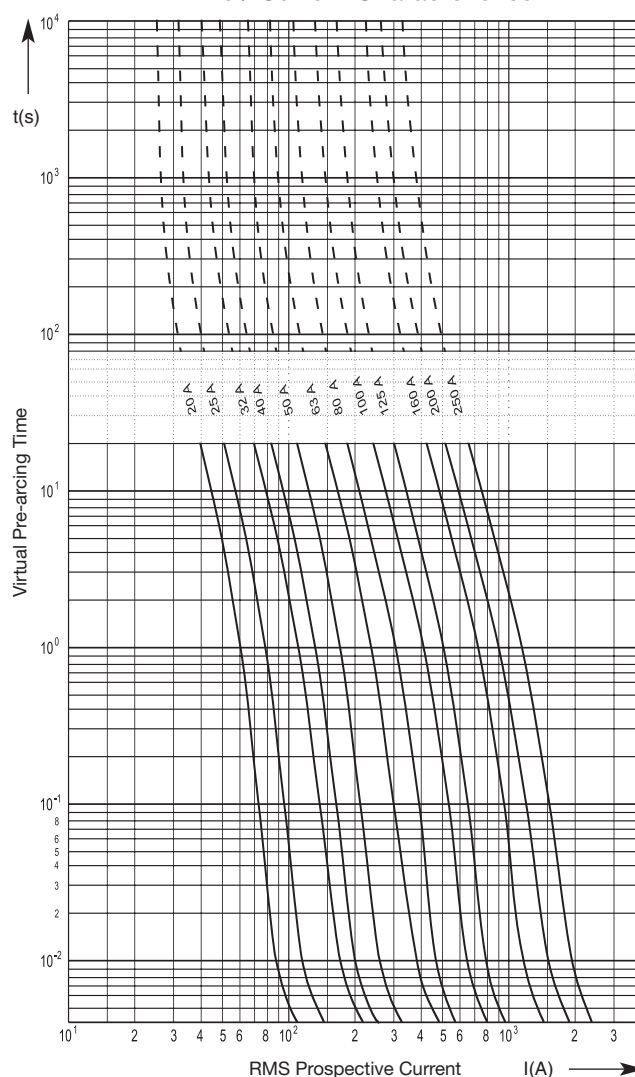
 Rated breaking capacity
200 kA

Rated current	Part No.	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 660 V A ² s
20 A	50 193 20	50 194 20	8	17	100
25 A	50 193 20	50 194 20	9	30	180
32 A	50 193 20	50 194 20	10	67	400
40 A	50 193 20	50 194 20	13	90	550
50 A	50 193 20	50 194 20	15	150	900
63 A	50 193 20	50 194 20	16	330	2,000
80 A	50 193 20	50 194 20	22	472	2,900
100 A	50 193 20	50 194 20	25	850	5,400
125 A	50 193 20	50 194 20	30	1,310	7,900
160 A	50 193 20	50 194 20	32	2,950	17,700
200 A	50 193 20	50 194 20	37	5,000	30,000
250 A	50 193 20	50 194 20	43	8,100	49,000

Cut-off-characteristics



Time / Current Characteristics



Size
27 x 60 mm

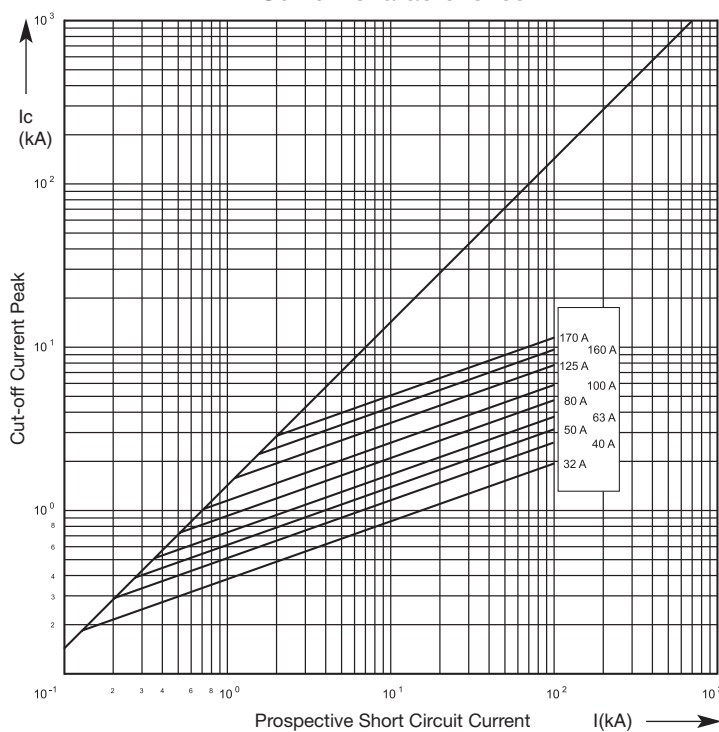
Rated voltage
AC 1000 V

Operating class
aR

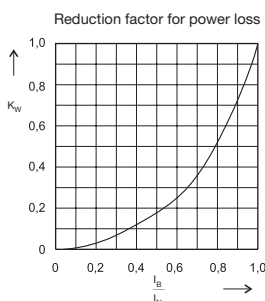
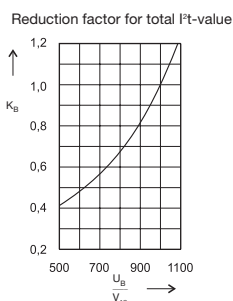
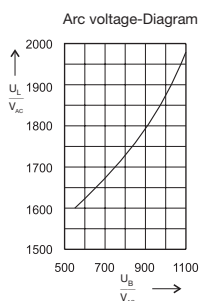
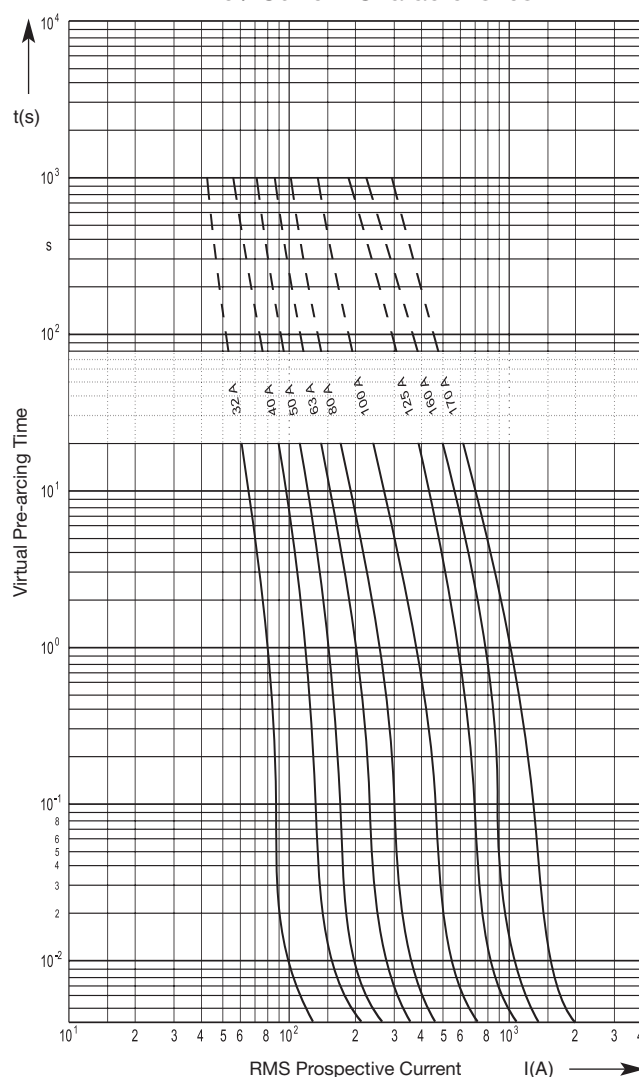
Rated breaking capacity
100 kA

Rated current	Part No.	Part No. with striker pin	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 1000 V A ² s
32 A	50 196 20	50 197 20	17	32	210
40 A	50 196 20	50 197 20	17	82	530
50 A	50 196 20	50 197 20	20	141	920
63 A	50 196 20	50 197 20	22	250	1,630
80 A	50 196 20	50 197 20	24	512	3,330
100 A	50 196 20	50 197 20	26	1,000	6,500
125 A	50 196 20	50 197 20	26	2,260	14,700
160 A	50 196 20	50 197 20	34	4,600	30,000
170 A	50 196 20	50 197 20	30	7,790	50,600

Cut-off-characteristics



Time / Current Characteristics



Size
27 x 60 mm

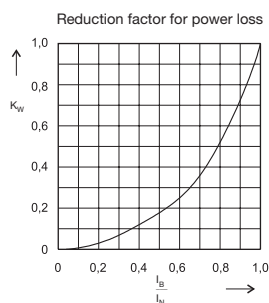
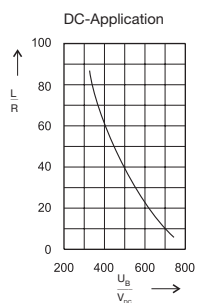
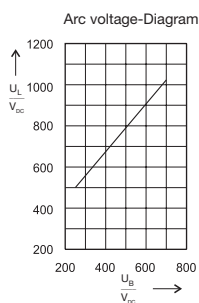
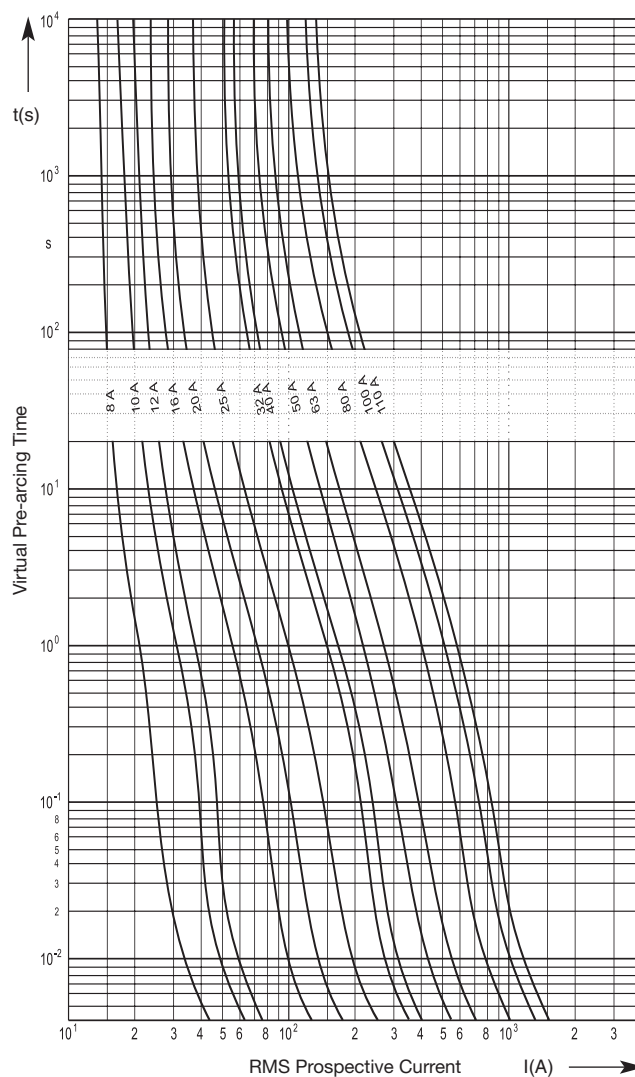
 Rated voltage
DC 660 V

 Operating class
gR

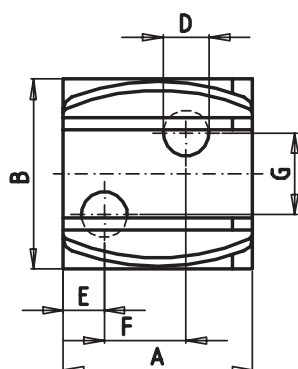
 Rated breaking capacity
50 kA

Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 600 V A ² s	
8 A	50 190 06	2.0	4	20	
10 A	50 190 06	2.2	8	40	
12 A	50 190 06	2.7	12	60	
16 A	50 190 06	3.1	32	160	
20 A	50 190 06	3.5	62	310	
25 A	50 190 06	3.9	130	650	
32 A	50 190 06	4.6	250	1,250	
40 A	50 190 06	6.6	420	2,100	
50 A	50 190 06	7.5	620	3,100	
63 A	50 190 06	8.9	1,200	6,000	
80 A	50 190 06	10.9	2,100	10,500	
100 A	50 190 06	13.5	3,500	17,500	
110 A	50 190 06	14.2	4,600	23,000	

Time / Current Characteristics



Fuse-clip



Power acceptance
4 W
61 017 01.2
size 10

A	0.50" (13 mm)
B	0.55" (14 mm)
C	0.70" (18 mm)
D	0.17" (4.2 mm)
E	0.20" (5 mm)

Power acceptance
6 W
61 001 01.2
size 14

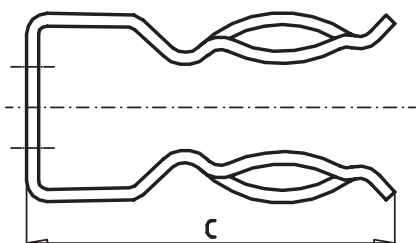
A	0.63" (16 mm)
B	0.63" (16 mm)
C	0.90" (23 mm)
D	0.17" (4.2 mm)
E	0.26" (6.5 mm)

Power acceptance
12 W
61 002 01.3
size 22

A	0.75" (19 mm)
B	1.06" (27 mm)
C	1.50" (38 mm)
D	0.18" (4.5 mm)
E	0.16" (4 mm)
F	0.30" (8 mm)
G	0.30" (8 mm)

Power acceptance
12 W
61 004 01.3
size 27

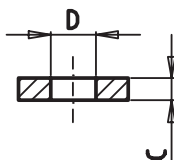
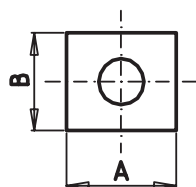
A	1.06" (27 mm)
B	2.30" (58.4 mm)
C	4.55" (115.6 mm)



Clamping plate

Part No.
63 017 01

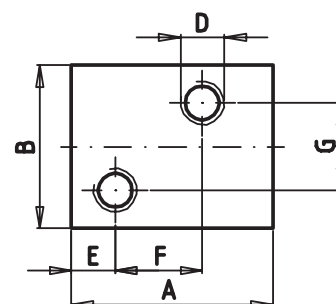
A	0.40" (10 mm)
B	0.35" (9 mm)
C	0.08" (2 mm)
D	0.17" (4.2 mm)



To use with fuse clips 61 017 01.2

Part No.
63 002 01

A	0.73" (18.5 mm)
B	0.60" (15 mm)
C	0.12" (3 mm)
D	M4
E	0.16" (4 mm)
F	0.30" (8 mm)
G	0.30" (8 mm)

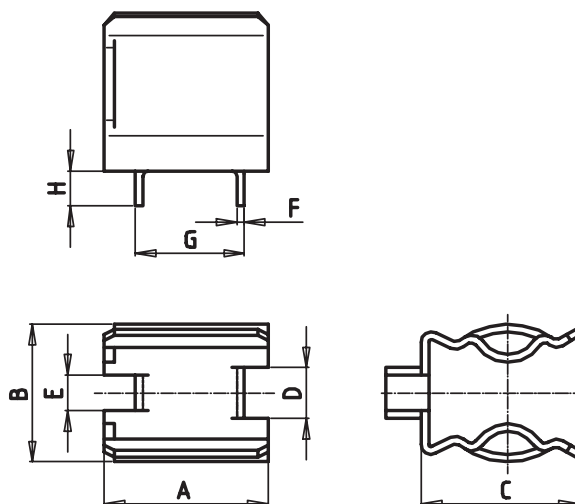


To use with fuse clips 61 002 01.3

Fuse-clip

Power acceptance
6 W
58 058 06
size 14

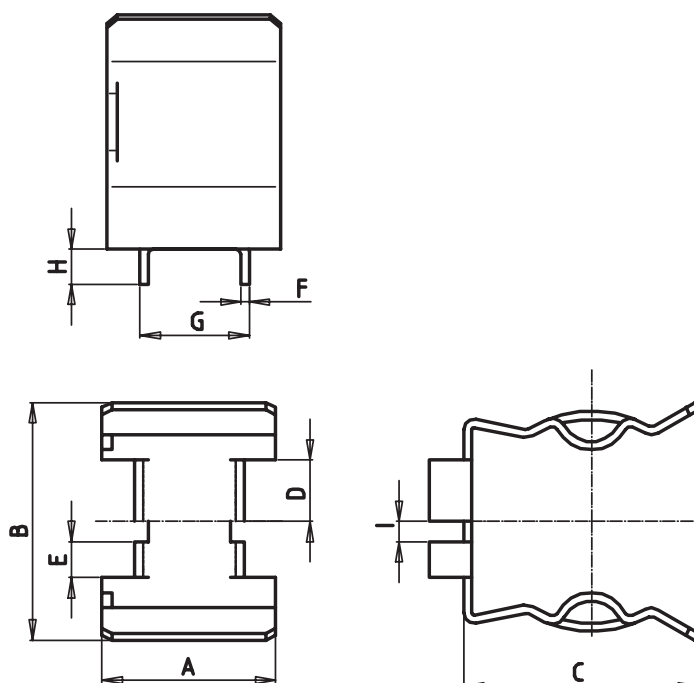
A	0.63" (16 mm)
B	0.55" (14 mm)
C	0.60" (15.5 mm)
D	0.20" (5 mm)
E	0.14" (3.5 mm)
F	0.03" (0.75 mm)
G	0.42" (10.7 mm)
H	0.14" (3.5 mm)



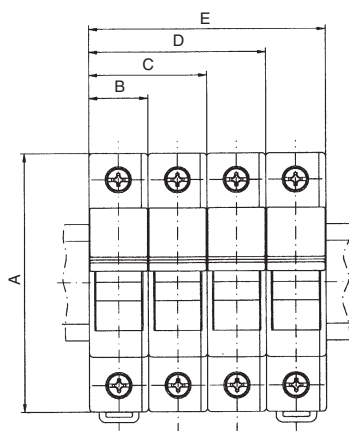
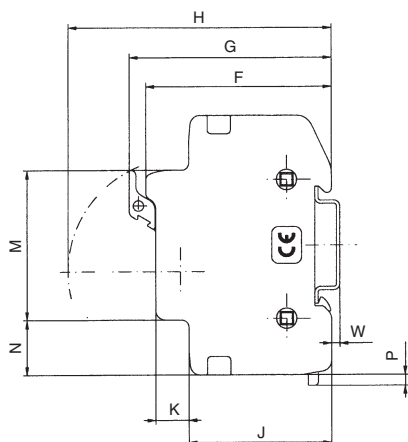
Fuse-clip

Power acceptance
12 W
58 060 06
size 22

A	0.67" (17 mm)
B	0.87" (22 mm)
C	0.90" (23 mm)
D	0.24" (6 mm)
E	0.14" (3.5 mm)
F	0.03" (0.75 mm)
G	0.42" (10.7 mm)
H	0.14" (3.5 mm)



ZS-Modul isolated fuse base for fuse links with cylindrical contact caps



Size 10 x 38

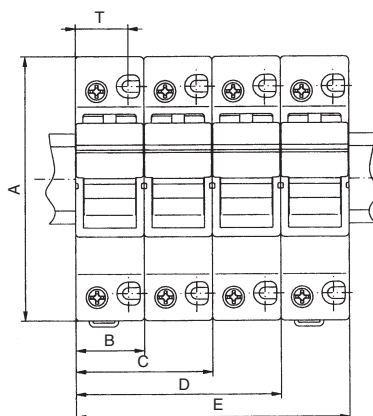
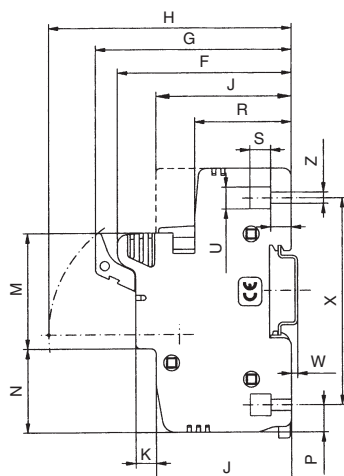
Part No.	51 063 04.DC for 1000 V DC	
	51 063 04	51 063 04.L 1 pol.
	51 063 04.2	51 063 04.2L 2 pol.
	51 063 04.3	51 063 04.3L 3 pol.



L= Diode indicator

Power acceptance: **4 W**

A	3.07" (78 mm)	H	3.13" (79.5 mm)
B	0.70" (17.8 mm)	J	1.69" (43 mm)
C	1.40" (35.6 mm)	K	0.40" (10 mm)
D	2.10" (53.4 mm)	M	1.77" (45 mm)
E	2.80" (71.2 mm)	N	0.65" (16.5 mm)
F	2.20" (56 mm)	P	0.13" (3.2 mm)
G	2.40" (61 mm)	W	0.10" (2.5 mm)



Size 14 x 51

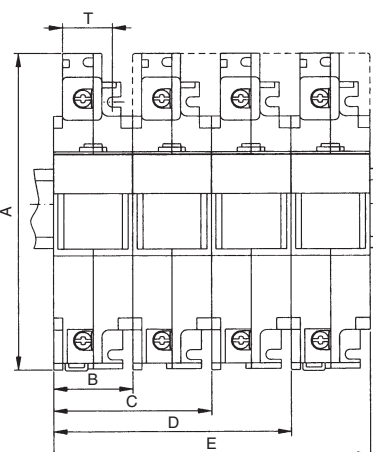
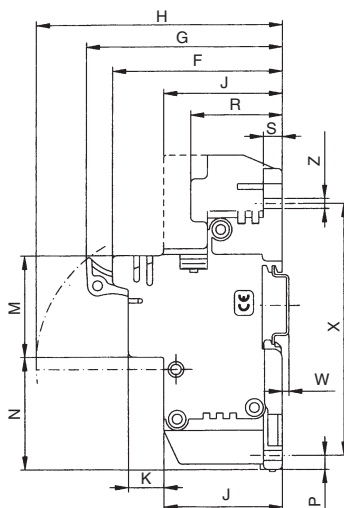
Part No.	51 058 04	51 058 04.S 1 pol.
	51 058 04.2	51 058 04.2S 2 pol.
	51 058 04.3	51 058 04.3S 3 pol.



S= Microswitch

Power acceptance: **6 W**

A	4.04" (102.5 mm)	M	1.77" (45 mm)
B	1.04" (26.5 mm)	N	1.28" (32.5 mm)
C	2.10" (53 mm)	P	0.40" (10.5 mm)
D	3.13" (79.5 mm)	R	1.48" (37.5 mm)
E	4.17" (106 mm)	S	0.30" (8 mm)
F	2.66" (67.5 mm)	T	0.80" (20.5 mm)
G	3.00" (76 mm)	U Ø	0.33" (8.5 mm)
H	3.70" (94.2 mm)	W	0.1" (2.5 mm)
J	2.07" (52.5 mm)	X	3.17" (80.5 mm)
K	0.30" (8 mm)	Z Ø	0.17" (4.4 mm)



Size 22 x 58

Part No.	51 060 04	51 063 04.S 1 pol.
	51 060 04.2	51 063 04.2S 2 pol.
	51 060 04.3	51 063 04.3S 3 pol.



S= Microswitch

Power acceptance: **12 W**

A	5.50" (140 mm)	M	1.77" (45 mm)
B	1.40" (35.6 mm)	N	2.00" (50.5 mm)
C	2.80" (71.2 mm)	P	0.30" (7.5 mm)
D	4.20" (106.8 mm)	R	1.57" (40 mm)
E	5.60" (142.4 mm)	S	0.30" (8 mm)
F	2.97" (75.5 mm)	T	1.06" (27 mm)
G	3.44" (87.5 mm)	W	0.10" (2.5 mm)
H	4.35" (110.5 mm)	X	4.30" (109.5 mm)
J	2.10" (53 mm)	Z Ø	0.17" (4.4 mm)
K	0.63" (16 mm)		

LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM



SIBA NH Fuse-links with top and center indicator are available in a large variety of voltage ratings, body sizes and operating classes:

Sizes: **000, 00, 0, 1, 2, 3 and 4**

Voltage ratings: AC 400 / 500 / 690 /
1000 / 1500 V

Operation class: **gG:** General Purpose
Cable and
Line protection

gB: For general application

aM: Motor circuit short
circuit protection

gTr: General Purpose
Transformer Protection

gTF: For general application

Standards: IEC 60269-1-2 / EN 60269-1-2
DIN VDE 0636 part 201
DIN VDE 0636 part 2011
DIN 43620

Approvals: Germany, Austria, Switzerland

Features / Benefits

- ▶ Combination indicator (top and center) for easy identification of blown fuses
- ▶ High interrupting rating up to 120 kA
- ▶ Voltage ratings AC 400 - 1500 V
- ▶ Operation classes gG / gB / aM / gTr / gTF available for all applications
- ▶ Fuse bases and accessories available, made of sheet steel base plate with ceramic support
- ▶ Low power losses and temperatures
- ▶ All fuse links are entirely corrosionresistant
- ▶ Removal tags: Standard design in metal, insulated removal tags available for increased safety



LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

Selection Guide

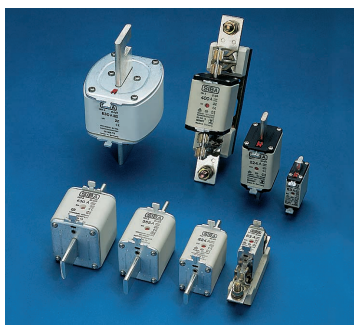
gG - General Application

Size	Rated Voltage AC V	Removal Tags	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
000	500	metal	combi indicator	20 000 13	NH 6	NH 25
00	500	metal	combi indicator	20 001 13	NH 6	NH 25
0	500	metal	combi indicator	20 002 13	NH 7	NH 25
1	500	metal	combi indicator	20 003 13	NH 7	NH 26
2	500	metal	combi indicator	20 004 13	NH 8	NH 26
3	500	metal	combi indicator	20 005 13	NH 8	NH 26
4	500	metal	top indicator	20 006 13	NH 9	NH 27
4	500	metal	top indicator	20 228 13	NH 9	NH 27
4a	500	metal	top indicator	20 120 13	NH 9	NH 27
000	500	insulated	combi indicator	20 438 13	NH 12	NH 25
00	500	insulated	combi indicator	20 439 13	NH 12	NH 25
1	500	insulated	combi indicator	20 441 13	NH 13	NH 26
2	500	insulated	combi indicator	20 442 13	NH 13	NH 26
3	500	insulated	combi indicator	20 443 13	NH 14	NH 26
000	690	metal	combi indicator	20 477 13	NH 6	NH 29
00	690	metal	combi indicator	20 209 13	NH 6	NH 29
0	690	metal	combi indicator	20 210 13	NH 7	NH 29
1	690	metal	combi indicator	20 211 13	NH 7	NH 30
2	690	metal	combi indicator	20 212 13	NH 8	NH 30
3	690	metal	combi indicator	20 213 13	NH 8	NH 30
4	690	metal	top indicator	20 225 13	NH 9	NH 31
4a	690	metal	top indicator	20 227 13	NH 9	NH 31
000	690	insulated	combi indicator	20 452 13	NH 12	NH 29
00	690	insulated	combi indicator	20 453 13	NH 12	NH 29
1	690	insulated	combi indicator	20 455 13	NH 13	NH 30
2	690	insulated	combi indicator	20 456 13	NH 13	NH 30

Selection Guide

gB - General Application

Size	Rated Voltage AC V	Removal Tags	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
000	1000	metal	top indicator	20 386 03	NH 16	NH 33
00	1000	metal	top indicator	20 389 03	NH 16	NH 33



LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

Selection Guide

aM - Motor Circuit Protection

Size	Rated Voltage AC V	Removal Tags	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
000	690	metal	combi indicator	20 477 08	NH 17	NH 35
00	690	metal	combi indicator	20 209 08	NH 17	NH 35
0	690	metal	combi indicator	20 210 08	NH 17	NH 35
1	690	metal	combi indicator	20 211 08	NH 18	NH 36
2	690	metal	combi indicator	20 212 08	NH 18	NH 36
3	690	metal	combi indicator	20 213 08	NH 19	NH 36
4	690	metal	top indicator	20 225 08	NH 19	NH 37
4a	690	metal	top indicator	20 227 08	NH 19	NH 37
000	1000	metal	top indicator	20 386 08	NH 21	NH 39
00	1000	metal	top indicator	20 389 08	NH 21	NH 39

Selection Guide

gTr - Transformer Protection

Size	Rated Voltage AC V	Removal Tags	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
2	400	metal	combi indicator	20 004 15	NH 22	NH 40
3	400	metal	combi indicator	20 005 15	NH 22	NH 40
4a	400	metal	top indicator	20 120 15	NH 23	NH 40

Selection Guide

gTF - General Application

Size	Rated Voltage AC V	Removal Tags	Indicator Type	Part No.	Selector Guide Page	Techn. Data Page
3	1500	metal	top indicator	20 246 02	NH 24	NH 42



LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

Selection Guide

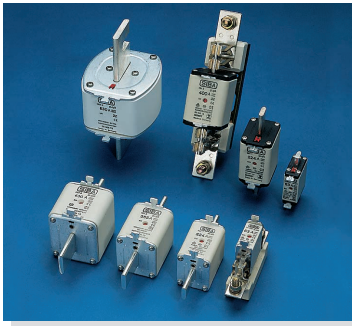
Knife Links

Size	Removal Tags	Part No.	Techn. Data Page
00	metal	24 001 02	NH 43
0	metal	24 002 02	NH 43
1	metal	24 003 02	NH 43
2	metal	24 004 02	NH 43
3	metal	24 005 02	NH 43
4	metal	24 006 02	NH 43
4a	metal	24 006 07	NH 43
00	insulated	24 080 02	NH 43
0	insulated	24 176 02	NH 43
1	insulated	24 158 02	NH 43
2	insulated	24 159 02	NH 43
3	insulated	24 160 02	NH 43

Selection Guide

Fuse Bases 500/660/690 V

Size	No. of Poles		Part No.	Techn. Data Page
00	1	Fuse base	21 001 01	NH 44
00		External wall	25 001 01	NH 44/45
00		Partition wall	25 001 03-2	NH 44
00	3	Fuse base	21 001 03	NH 44
0	1	Fuse base	21 002 04	NH 46
0		External wall	25 006 01	NH 46
1	1	Fuse base	21 003 01	NH 47
2	1	Fuse base	21 004 01	NH 47
3	1	Fuse base	21 005 01	NH 47
1		External wall	25 003 01	NH 47
2		Partition wall	25 004 01	NH 47
3		Partition wall	25 005 01	NH 47
1		Contact insulating cover for Fuse Base size 1	21 003 01.26	NH 47
2		Contact insulating cover for Fuse Base size 2	21 004 01.26	NH 47
3		Contact insulating cover for Fuse Base size 3	21 005 01.26	NH 47
1	3	Fuse base	21 003 03	NH 48
2	3	Fuse base	21 004 03	NH 48
1		External wall	25 003 01	NH 48
2		External wall	25 004 01	NH 48
4	1	Fuse base	21 006 01	NH 49
4	1	Fuse base	21 006 05	NH 49
4a	1	Fuse base	21 120 02	NH 49



LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

Selection Guide

Fuse Bases 1000/1200/1500 V

Size	Rated Voltage AC V	Design	Part No.	Techn. Data Page	
000	1000		21 386 01	NH 50	
00	1000		21 389 01	NH 50	
3	1500		21 031 01	NH 50	

Selection Guide

Grip Handle

Size	Rated Voltage AC V	Design	Part No.	Techn. Data Page	
00 - 3	400 - 690	Standard	22 001 02	NH 51	
00 - 3	400 - 690	Protection by Leather Glove	22 001 05	NH 51	
4 + 4a	400 - 690	Standard 87 mm (3.43")	22 120 01	NH 51	
3	1500	Standard 120 mm (4.72")	22 031 01	NH 51	

LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gG GENERAL
 APPLICATION

 Size
000
**Metal Removal Tags
 with combi indicator**

 Standard
IEC 60269-2-1

 Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
2 A	20 000 13	0.11	10
4 A	20 000 13	0.11	10
6 A	20 000 13	0.11	10
10 A	20 000 13	0.11	10
16 A	20 000 13	0.11	10
20 A	20 000 13	0.11	10
25 A	20 000 13	0.11	10
32 A	20 000 13	0.11	10
35 A	20 000 13	0.11	10
40 A	20 000 13	0.11	10
50 A	20 000 13	0.11	10
63 A	20 000 13	0.11	10
80 A	20 000 13	0.11	10
100 A	20 000 13	0.11	10

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
6 A	20 477 13	0.11	3
10 A	20 477 13	0.11	3
16 A	20 477 13	0.11	3
20 A	20 477 13	0.11	3
25 A	20 477 13	0.11	3
32 A	20 477 13	0.11	3
35 A	20 477 13	0.11	3
40 A	20 477 13	0.11	3
50 A	20 477 13	0.11	3

 Size
00
**Metal Removal Tags
 with combi indicator**

 Standard
IEC 60269-2-1

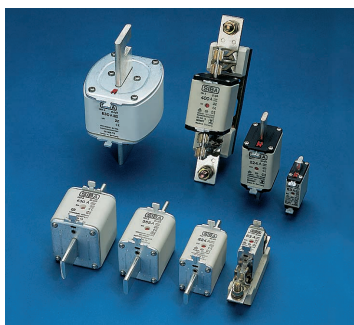
 Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
125 A	20 001 13	0.154	10
160 A	20 001 13	0.154	10

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
63 A	20 209 13	0.154	3
80 A	20 209 13	0.154	3
100 A	20 209 13	0.154	3
125 A	20 209 13	0.154	3

Dimensions see Page NH 10 + NH 11



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gG GENERAL APPLICATION

Size
0

**Metal Removal Tags
with combi indicator**

Standard
IEC 60269-2-1

Rated voltage AC 500 V

Rated current	Part No.	Weight (kg/1)	Pack
2 A	20 002 13	0.23	3
4 A	20 002 13	0.23	3
6 A	20 002 13	0.23	3
10 A	20 002 13	0.23	3
16 A	20 002 13	0.23	3
20 A	20 002 13	0.23	3
25 A	20 002 13	0.23	3
32 A	20 002 13	0.23	3
35 A	20 002 13	0.23	3
40 A	20 002 13	0.23	3
50 A	20 002 13	0.23	3
63 A	20 002 13	0.23	3
80 A	20 002 13	0.23	3
100 A	20 002 13	0.23	3
125 A	20 002 13	0.23	3
160 A	20 002 13	0.23	3

Rated voltage AC 690 V

Rated current	Part No.	Weight (kg/1)	Pack
6 A	20 210 13	0.23	3
10 A	20 210 13	0.23	3
16 A	20 210 13	0.23	3
20 A	20 210 13	0.23	3
25 A	20 210 13	0.23	3
32 A	20 210 13	0.23	3
35 A	20 210 13	0.23	3
40 A	20 210 13	0.23	3
50 A	20 210 13	0.23	3
63 A	20 210 13	0.23	3
80 A	20 210 13	0.23	3
100 A	20 210 13	0.23	3
125 A	20 210 13	0.23	3

Size
1

**Metal Removal Tags
with combi indicator**

Standard
IEC 60269-2-1

Rated voltage AC 500 V

Rated current	Part No.	Weight (kg/1)	Pack
16 A	20 003 13	0.28	3
20 A	20 003 13	0.28	3
25 A	20 003 13	0.28	3
32 A	20 003 13	0.28	3
35 A	20 003 13	0.28	3
40 A	20 003 13	0.28	3
50 A	20 003 13	0.28	3
63 A	20 003 13	0.28	3
80 A	20 003 13	0.28	3
100 A	20 003 13	0.28	3
125 A	20 003 13	0.28	3
160 A	20 003 13	0.28	3
200 A	20 003 13	0.44	3
224 A	20 003 13	0.44	3
250 A	20 003 13	0.44	3

Rated voltage AC 690 V

Rated current	Part No.	Weight (kg/1)	Pack
16 A	20 211 13	0.44	3
20 A	20 211 13	0.44	3
25 A	20 211 13	0.44	3
32 A	20 211 13	0.44	3
35 A	20 211 13	0.44	3
40 A	20 211 13	0.44	3
50 A	20 211 13	0.44	3
63 A	20 211 13	0.44	3
80 A	20 211 13	0.44	3
100 A	20 211 13	0.44	3
125 A	20 211 13	0.44	3
160 A	20 211 13	0.44	3
200 A	20 211 13	0.44	3
224 A	20 221 13	0.44	3
250 A	20 211 13	0.44	3

Dimensions see Page NH 10 + NH 11

LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gG GENERAL
 APPLICATION

 Size
2
**Metal Removal Tags
 with combi indicator**

 Standard
IEC 60269-2-1

 Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
35 A	20 004 13	0.28	3
40 A	20 004 13	0.28	3
50 A	20 004 13	0.28	3
63 A	20 004 13	0.28	3
80 A	20 004 13	0.28	3
100 A	20 004 13	0.28	3
125 A	20 004 13	0.28	3
160 A	20 004 13	0.28	3
200 A	20 004 13	0.48	3
224 A	20 004 13	0.48	3
250 A	20 004 13	0.48	3
300 A	20 004 13	0.65	3
315 A	20 004 13	0.65	3
355 A	20 004 13	0.65	3
400 A	20 004 13	0.65	3

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
35 A	20 212 13	0.48	3
40 A	20 212 13	0.48	3
50 A	20 212 13	0.48	3
63 A	20 212 13	0.48	3
80 A	20 212 13	0.48	3
100 A	20 212 13	0.48	3
125 A	20 212 13	0.48	3
160 A	20 212 13	0.48	3
200 A	20 212 13	0.48	3
224 A	20 212 13	0.65	3
250 A	20 212 13	0.65	3
300 A	20 212 13	0.65	3
315 A	20 212 13	0.65	3
355 A	20 212 13	0.65	3
400 A	20 212 13	0.65	3

 Size
3
**Metal Removal Tags
 with combi indicator**

 Standard
IEC 60269-2-1

 Rated voltage **AC 500 V**

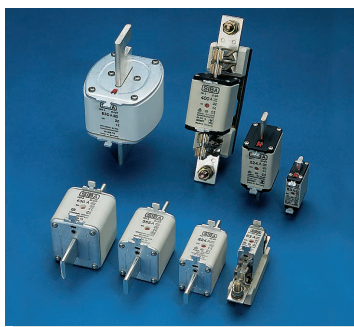
Rated current	Part No.	Weight (kg/1)	Pack
315 A	20 005 13	0.65	3
355 A	20 005 13	0.65	3
425 A	20 005 13	0.88	3
500 A	20 005 13	0.88	3
630 A	20 005 13	0.88	3

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
300 A	20 213 13	0.88	3
315 A	20 213 13	0.88	3
355 A	20 213 13	0.88	3
400 A	20 213 13	0.88	3
425 A	20 213 13	0.88	3
500 A	20 213 13*	1.27	3

* with Top indicator

Dimensions see Page NH 10 + NH 11



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

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Size
4

**Metal Removal Tags
with top indicator**

Standard
IEC 60269-2-1

Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 006 13	2.46	1
500 A	20 006 13	2.46	1
630 A	20 006 13	2.46	1
800 A	20 006 13	2.46	1
1000 A	20 006 13	2.46	1
1250 A	20 006 13	2.46	1
1600 A	20 228 13	3.20	1

Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 225 13	2.46	1
500 A	20 225 13	2.46	1
630 A	20 225 13	2.46	1
800 A	20 225 13	2.46	1

Size
4a

**Metal Removal Tags
with top indicator**

Standard
IEC 60269-2-1

Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 120 13	3.2	1
500 A	20 120 13	3.2	1
630 A	20 120 13	3.2	1
800 A	20 120 13	3.2	1
1000 A	20 120 13	3.2	1
1250 A	20 120 13	3.2	1
1600 A	20 120 13	3.2	1

Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 227 13	3.0	1
500 A	20 227 13	3.0	1
630 A	20 227 13	3.0	1
800 A	20 227 13	3.0	1

LOW VOLTAGE FUSES

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Dimensions Metal Removal Tags

Rated voltage AC 500 V

Standard IEC 60269-2-1

20 000 13

A _{max.}	2.13"	(54 mm)
B	0.60"	(15 mm)
C	1.85"	(47 mm)
D	0.80"	(20.5 mm)
E	1.60"	(40.5 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.05"	(52 mm)
I	0.28"	(7 mm)
L	3.07"	(78 mm)

20 001 13

A _{max.}	2.13"	(54 mm)
B	0.60"	(15 mm)
C	1.85"	(47 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.28"	(58 mm)
I	0.50"	(13 mm)
L	3.07"	(78 mm)

20 002 13

A _{max.}	2.80"	(71.5 mm)
B	0.60"	(15 mm)
C	2.56"	(65 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.28"	(58 mm)
I	0.50"	(13 mm)
L	4.92"	(125 mm)

20 003 13 ≤ 160 A

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.57"	(40 mm)
H	2.28"	(58 mm)
I	0.30"	(8 mm)
L	5.30"	(135 mm)

20 003 13 > 160 A

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.65"	(42 mm)
E	2.03"	(51.5 mm)
F	0.24"	(6 mm)
G	1.57"	(40 mm)
H	2.52"	(64 mm)
I	0.55"	(14 mm)
L	5.30"	(135 mm)

20 004 13 ≤ 160 A

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.90"	(48 mm)
H	2.48"	(63 mm)
I	0.24"	(8 mm)
L	5.90"	(150 mm)

20 004 13 200 - 250 A

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.65"	(42 mm)
E	2.03"	(51.5 mm)
F	0.24"	(6 mm)
G	1.90"	(48 mm)
H	2.83"	(72 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 004 13 > 250 A

A _{max.}	2.95"	(75 mm)
B	1.02"	(26 mm)
C	2.56"	(65 mm)
D	2.10"	(53 mm)
E	2.32"	(59 mm)
F	0.24"	(6 mm)
G	1.90"	(48 mm)
H	2.83"	(72 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 005 13 ≤ 400 A

A _{max.}	2.95"	(75 mm)
B	1.02"	(26 mm)
C	2.56"	(65 mm)
D	2.10"	(53 mm)
E	2.32"	(59 mm)
F	0.24"	(6 mm)
G	2.36"	(60 mm)
H	3.27"	(83 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 005 13 > 400 A

A _{max.}	2.95"	(75 mm)
B	1.26"	(32 mm)
C	2.56"	(65 mm)
D	2.56"	(65 mm)
E	2.90"	(73.5 mm)
F	0.24"	(6 mm)
G	2.36"	(60 mm)
H	3.40"	(86 mm)
I	0.67"	(17 mm)
L	5.90"	(150 mm)

20 006 13 400 A - 1250 A

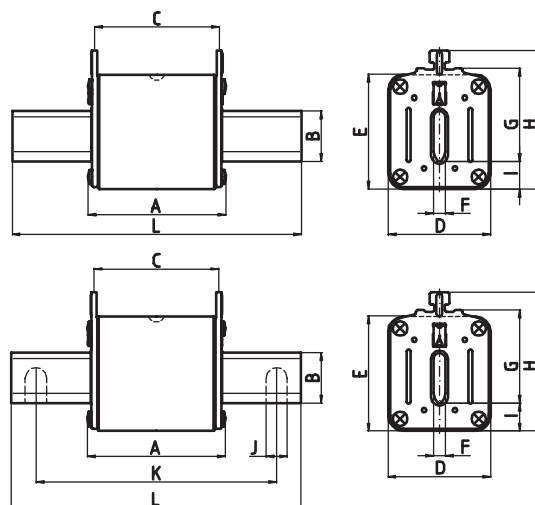
A _{max.}	3.54"	(90 mm)
B	1.97"	(50 mm)
C	2.56"	(65 mm)
D	3.94"	(100 mm)
E	4.25"	(108 mm)
F	0.30"	(8 mm)
G	3.35"	(85 mm)
H	4.84"	(123 mm)
I	1.10"	(28 mm)
J	5.90"	(150 mm)
K	0.63"	(16 mm)
L	7.87"	(200 mm)

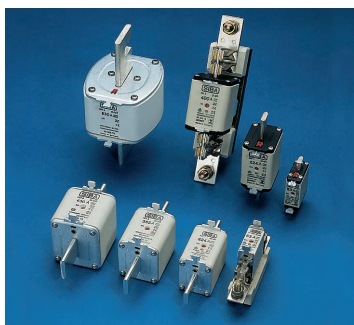
20 006 13 1600 A

A	3.54"	(100 mm)
B	1.97"	(50 mm)
C	3.42"	(87 mm)
D	3.54"	(100 mm)
E	4.25"	(108 mm)
F	0.30"	(8 mm)
G	3.35"	(85 mm)
H	4.84"	(123 mm)
I	1.10"	(28 mm)
J	5.90"	(150 mm)
K	0.63"	(16 mm)
L	7.87"	(200 mm)

20 120 13

A _{max.}	3.94"	(100 mm)
B	1.97"	(50 mm)
C	3.43"	(87 mm)
D	3.94"	(100 mm)
E	4.25"	(108 mm)
F	0.24"	(6 mm)
G	3.35"	(85 mm)
H	4.84"	(123 mm)
I	1.10"	(28 mm)
J	-	
K	-	
L	7.87"	(200 mm)





LOW VOLTAGE FUSES
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Dimensions
Metal Removal Tags

Rated voltage
AC 690 V

Standard
IEC 60269-2-1

20 477 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

20 209 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)

20 210 13

A _{max.}	2.80" (71.5 mm)
B	0.60" (15 mm)
C	2.56" (65 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	4.92" (125 mm)

20 211 13

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)

20 212 13
≤ 200 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 212 13
> 200 A

A _{max.}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 213 13
≤ 315 A

A _{max.}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.27" (83 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 213 13
355 - 425 A

A _{max.}	2.95" (75 mm)
B	1.26" (32 mm)
C	2.56" (65 mm)
D	2.56" (65 mm)
E	2.90" (73.5 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.40" (86 mm)
I	0.67" (17 mm)
L	5.90" (150 mm)

20 213 13
≥ 500 A

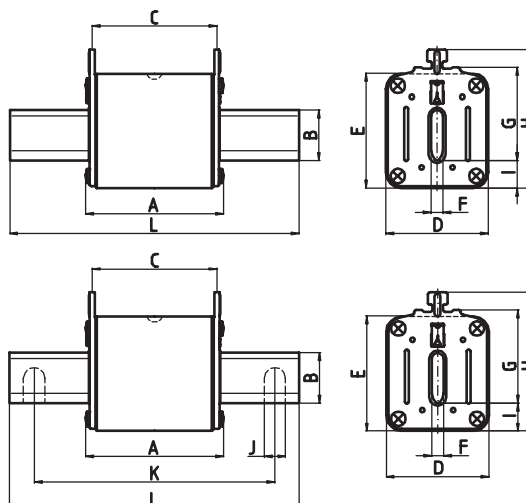
A _{max.}	2.95" (75 mm)
B	1.26" (32 mm)
C	2.56" (65 mm)
D	2.87" (73 mm)
E	2.87" (73 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.40" (86 mm)
I	0.63" (16 mm)
L	5.90" (150 mm)

20 225 13

A _{max.}	3.54" (90 mm)
B	1.97" (50 mm)
C	2.56" (65 mm)
D	3.94" (100 mm)
E	4.25" (108 mm)
F	0.30" (8 mm)
G	3.35" (85 mm)
H	4.84" (123 mm)
I	1.10" (28 mm)
J	5.90" (150 mm)
K	0.63" (16 mm)
L	7.87" (200 mm)

20 227 13

A _{max.}	3.94" (100 mm)
B	1.97" (50 mm)
C	3.43" (87 mm)
D	3.94" (100 mm)
E	4.25" (108 mm)
F	0.24" (6 mm)
G	3.35" (85 mm)
H	4.84" (123 mm)
I	1.10" (28 mm)
J	–
K	–
L	7.87" (200 mm)



LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

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 Size
000
Insulated Removal Tags
with combi indicator

 Standard
IEC 60269-2-1

 Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
2 A	20 438 13	0.12	10
4 A	20 438 13	0.12	10
6 A	20 438 13	0.12	10
10 A	20 438 13	0.12	10
16 A	20 438 13	0.12	10
20 A	20 438 13	0.12	10
25 A	20 438 13	0.12	10
32 A	20 438 13	0.12	10
35 A	20 438 13	0.12	10
40 A	20 438 13	0.12	10
50 A	20 438 13	0.12	10
63 A	20 438 13	0.12	10
80 A	20 438 13	0.12	10
100 A	20 438 13	0.12	10

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
2 A	20 452 13	0.12	10
4 A	20 452 13	0.12	10
6 A	20 452 13	0.12	10
10 A	20 452 13	0.12	10
16 A	20 452 13	0.12	10
20 A	20 452 13	0.12	10
25 A	20 452 13	0.12	10
32 A	20 452 13	0.12	10
35 A	20 452 13	0.12	10
40 A	20 452 13	0.12	10
50 A	20 452 13	0.12	10

 Size
00
Insulated Removal Tags
with combi indicator

 Standard
IEC 60269-2-1

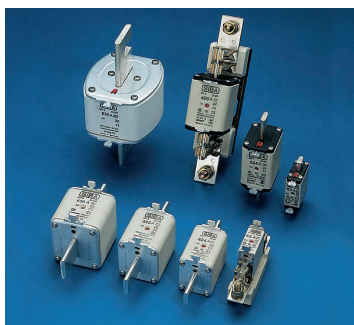
 Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
125 A	20 439 13	0.154	10
160 A	20 439 13	0.154	10

 Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
63 A	20 453 13	0.154	10
80 A	20 453 13	0.154	10
100 A	20 453 13	0.154	10
125 A	20 453 13	0.154	10

Dimensions see Page NH 15



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

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Size
1

**Insulated Removal Tags
with combi indicator**

Standard
IEC 60269-2-1

Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
16 A	20 441 13	0.28	3
20 A	20 441 13	0.28	3
25 A	20 441 13	0.28	3
32 A	20 441 13	0.28	3
35 A	20 441 13	0.28	3
40 A	20 441 13	0.28	3
50 A	20 441 13	0.28	3
63 A	20 441 13	0.28	3
80 A	20 441 13	0.28	3
100 A	20 441 13	0.28	3
125 A	20 441 13	0.28	3
160 A	20 441 13	0.28	3
200 A	20 441 13	0.44	3
224 A	20 441 13	0.44	3
250 A	20 441 13	0.44	3

Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
16 A	20 455 13	0.44	3
20 A	20 455 13	0.44	3
25 A	20 455 13	0.44	3
32 A	20 455 13	0.44	3
35 A	20 455 13	0.44	3
40 A	20 455 13	0.44	3
50 A	20 455 13	0.44	3
63 A	20 455 13	0.44	3
80 A	20 455 13	0.44	3
100 A	20 455 13	0.44	3
125 A	20 455 13	0.44	3
160 A	20 455 13	0.44	3
200 A	20 455 13	0.44	3

Size
2

**Insulated Removal Tags
with combi indicator**

Standard
IEC 60269-2-1

Rated voltage **AC 500 V**

Rated current	Part No.	Weight (kg/1)	Pack
35 A	20 442 13	0.28	3
40 A	20 442 13	0.28	3
50 A	20 442 13	0.28	3
63 A	20 442 13	0.28	3
80 A	20 442 13	0.28	3
100 A	20 442 13	0.28	3
125 A	20 442 13	0.28	3
160 A	20 442 13	0.28	3
200 A	20 442 13	0.48	3
224 A	20 442 13	0.48	3
250 A	20 442 13	0.48	3
300 A	20 442 13	0.65	3
315 A	20 442 13	0.65	3
355 A	20 442 13	0.65	3
400 A	20 442 13	0.65	3

Rated voltage **AC 690 V**

Rated current	Part No.	Weight (kg/1)	Pack
35 A	20 456 13	0.48	3
40 A	20 456 13	0.48	3
50 A	20 456 13	0.48	3
63 A	20 456 13	0.48	3
80 A	20 456 13	0.48	3
100 A	20 456 13	0.48	3
125 A	20 456 13	0.48	3
160 A	20 456 13	0.48	3
200 A	20 456 13	0.48	3
224 A	20 456 13	0.65	3
250 A	20 456 13	0.65	3
300 A	20 456 13	0.65	3
315 A	20 456 13	0.65	3

Dimensions see Page NH 15

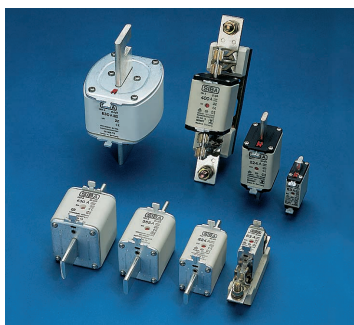
LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gG GENERAL
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Size	Rated voltage	Insulated Removal Tags	Standard
3	AC 500 V	with combi indicator	IEC 60269-2-1

Rated current	Part No.	Weight (kg/1)	Pack	
300 A	20 443 13	0.88	3	
315 A	20 443 13	0.88	3	
355 A	20 443 13	0.88	3	
400 A	20 443 13	0.88	3	
425 A	20 443 13	0.88	3	
500 A	20 443 13	0.88	3	
630 A	20 443 13	0.88	3	

Dimensions see Page NH 15



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gG GENERAL APPLICATION

Dimensions
Insulated Removal Tags

Standard
IEC 60269-2-1

20 438 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

20 439 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)

20 441 13
≤ 160 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.28" (58 mm)
I	0.30" (8 mm)
L	5.30" (135 mm)

20 441 13
> 160 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)

20 442 13
≤ 160 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.48" (63 mm)
I	0.24" (6 mm)
L	5.90" (150 mm)

20 442 13
200 - 250 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 442 13
> 250 A

A _{max.}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 443 13

A _{max.}	2.95" (75 mm)
B	1.26" (32 mm)
C	2.56" (65 mm)
D	2.56" (65 mm)
E	2.90" (73.5 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.40" (86 mm)
I	0.67" (17 mm)
L	5.90" (150 mm)

20 452 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	0.80" (20.5 mm)
E	1.60" (40.5 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.05" (52 mm)
I	0.28" (7 mm)
L	3.07" (78 mm)

20 453 13

A _{max.}	2.13" (54 mm)
B	0.60" (15 mm)
C	1.85" (47 mm)
D	1.16" (29.5 mm)
E	1.80" (46 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
H	2.28" (58 mm)
I	0.50" (13 mm)
L	3.07" (78 mm)

20 455 13

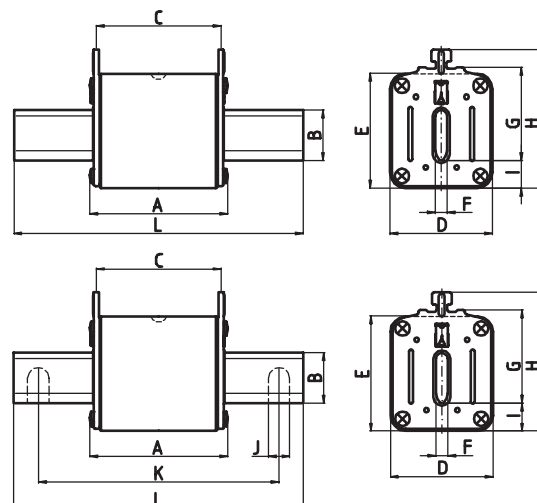
A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.57" (40 mm)
H	2.52" (64 mm)
I	0.55" (14 mm)
L	5.30" (135 mm)

20 456 13
≤ 200 A

A _{max.}	2.95" (75 mm)
B	0.80" (20 mm)
C	2.56" (65 mm)
D	1.65" (42 mm)
E	2.03" (51.5 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

20 456 13
> 200 A

A _{max.}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)



LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gB GENERAL
 APPLICATION

Size 000 **Rated voltage AC 1000 V** **Metal Removal Tags with top indicator**

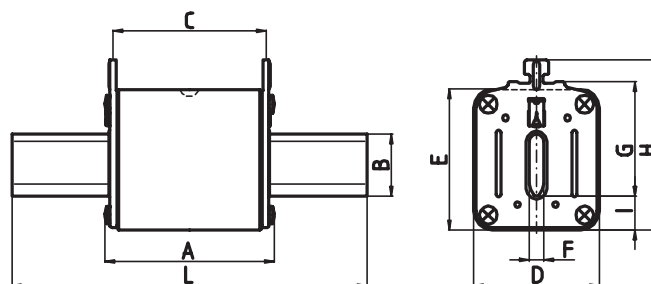
Rated current	Part No.	Weight (kg/1)	Pack
6 A	20 386 03	0.18	3
10 A	20 386 03	0.18	3
16 A	20 386 03	0.18	3
20 A	20 386 03	0.18	3
25 A	20 386 03	0.18	3
35 A	20 386 03	0.18	3
50 A	20 386 03	0.18	3
63 A	20 386 03	0.18	3
80 A	20 386 03	0.18	3
100 A	20 386 03	0.18	3

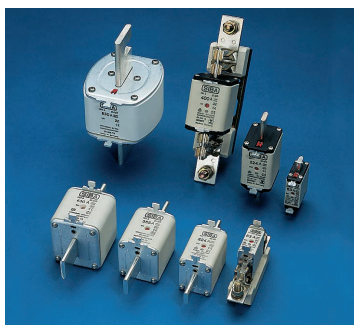
Size 00 **Rated voltage AC 1000 V** **Metal Removal Tags with top indicator**

Rated current	Part No.	Weight (kg/1)	Pack
6 A	20 389 03	0.28	3
20 A	20 389 03	0.28	3
25 A	20 389 03	0.28	3
35 A	20 389 03	0.28	3
50 A	20 389 03	0.28	3
63 A	20 389 03	0.28	3
50 A	20 389 03	0.28	3
80 A	20 389 03	0.28	3
100 A	20 389 03	0.28	3
125 A	20 389 03	0.28	3
160 A	20 389 03	0.28	3

20 389 03
20 386 03

A_{max.} 3.66" (93 mm)	A_{max.} 3.39" (86 mm)
B 0.60" (15 mm)	B 0.60" (15 mm)
C 3.35" (85 mm)	C 3.07" (78 mm)
D 1.16" (29.5 mm)	D 0.80" (20.5 mm)
E 1.81" (46 mm)	E 1.60" (40.5 mm)
F 0.24" (6 mm)	F 0.24" (6 mm)
G 1.38" (35 mm)	G 1.38" (35 mm)
H 2.28" (58 mm)	H 2.05" (52 mm)
I 0.50" (13 mm)	I 0.28" (7 mm)
L 4.61" (117 mm)	L 4.33" (110 mm)





LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

aM MOTOR CIRCUIT
PROTECTION

Size 000 **Rated voltage AC 690 V** **Metal Removal Tags with combi indicator** **Standard IEC 60269-2**

Rated current	Part No.	Weight (kg/1)	Pack	
16 A	20 477 08	0.11	3	
20 A	20 477 08	0.11	3	
25 A	20 477 08	0.11	3	
35 A	20 477 08	0.11	3	
50 A	20 477 08	0.11	3	

Size 00 **Rated voltage AC 690 V** **Metal Removal Tags with combi indicator** **Standard IEC 60269-2**

Rated current	Part No.	Weight (kg/1)	Pack	
63 A	20 209 08	0.154	3	
80 A	20 209 08	0.154	3	
100 A	20 209 08	0.154	3	
125 A	20 209 08	0.154	3	

Size 0 **Rated voltage AC 690 V** **Metal Removal Tags with combi indicator** **Standard IEC 60269-2**

Rated current	Part No.	Weight (kg/1)	Pack	
16 A	20 210 08	0.23	3	
20 A	20 210 08	0.23	3	
25 A	20 210 08	0.23	3	
35 A	20 210 08	0.23	3	
50 A	20 210 08	0.23	3	
63 A	20 210 08	0.23	3	
80 A	20 210 08	0.23	3	
100 A	20 210 08	0.23	3	
125 A	20 210 08	0.23	3	
160 A	20 210 08	0.23	3	

Dimensions see Page NH 20

LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

aM MOTOR CIRCUIT
 PROTECTION

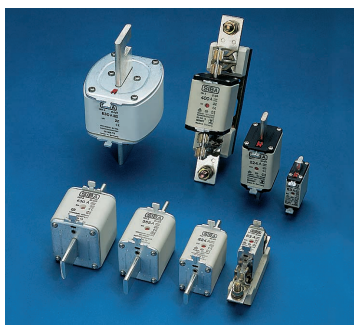
Size 1 **Rated voltage**
AC 690 V **Metal Removal Tags**
with combi indicator
Standard
IEC 60269-2

Rated current	Part No.	Weight (kg/1)	Pack	
16 A	20 211 08	0.44	3	
20 A	20 211 08	0.44	3	
25 A	20 211 08	0.44	3	
35 A	20 211 08	0.44	3	
50 A	20 211 08	0.44	3	
63 A	20 211 08	0.44	3	
80 A	20 211 08	0.44	3	
100 A	20 211 08	0.44	3	
125 A	20 211 08	0.44	3	
160 A	20 211 08	0.44	3	
200 A	20 211 08	0.44	3	
250 A	20 211 08	0.44	3	

Size 2 **Rated voltage**
AC 690 V **Metal Removal Tags**
with combi indicator
Standard
IEC 60269-2

Rated current	Part No.	Weight (kg/1)	Pack	
35 A	20 212 08	0.48	3	
50 A	20 212 08	0.48	3	
63 A	20 212 08	0.48	3	
80 A	20 212 08	0.48	3	
100 A	20 212 08	0.48	3	
125 A	20 212 08	0.48	3	
160 A	20 212 08	0.48	3	
200 A	20 212 08	0.48	3	
250 A	20 212 08	0.65	3	
315 A	20 212 08	0.65	3	
355 A	20 212 08	0.65	3	
400 A	20 212 08	0.65	3	

Dimensions see Page NH 20



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

aM MOTOR CIRCUIT
PROTECTION

Size 3	Rated voltage AC 660/690 V	Metal Removal Tags with combi indicator	Standard IEC 60269-2
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Rated current	Part No.	Weight (kg/1)	Pack
315 A	20 213 08	0.65	3
400 A	20 213 08	0.88	1
500 A	20 213 08*	1.27	1
630 A	20 213 08*	1.27	1

* with top indicator

Size 4	Rated voltage AC 690 V	Metal Removal Tags with top indicator	Standard IEC 60269-2
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Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 225 08	2.46	1
500 A	20 225 08	2.46	1
630 A	20 225 08	2.46	1
800 A	20 225 08	2.46	1
1000 A	20 225 08	2.46	1

Size 4a	Rated voltage AC 690 V	Metal Removal Tags with top indicator	Standard IEC 60269-2
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Rated current	Part No.	Weight (kg/1)	Pack
400 A	20 227 08	3.0	1
500 A	20 227 08	3.0	1
630 A	20 227 08	3.0	1
800 A	20 227 08	3.0	1
1000 A	20 227 08	3.0	1

Dimensions see Page NH 20

LOW VOLTAGE FUSES

EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

aM MOTOR CIRCUIT
PROTECTION


Dimensions Metal Removal Tags

Rated voltage AC 690 V

Standard IEC 60269-2

20 477 08

A _{max.}	2.13"	(54 mm)
B	0.60"	(15 mm)
C	1.85"	(47 mm)
D	0.80"	(20.5 mm)
E	1.60"	(40.5 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.05"	(52 mm)
I	0.28"	(7 mm)
L	3.07"	(78 mm)

20 209 08

A _{max.}	2.13"	(54 mm)
B	0.60"	(15 mm)
C	1.85"	(47 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.28"	(58 mm)
I	0.50"	(13 mm)
L	3.07"	(78 mm)

20 210 08

A _{max.}	2.80"	(71.5 mm)
B	0.60"	(15 mm)
C	2.56"	(65 mm)
D	1.16"	(29.5 mm)
E	1.80"	(46 mm)
F	0.24"	(6 mm)
G	1.38"	(35 mm)
H	2.28"	(58 mm)
I	0.50"	(13 mm)
L	4.92"	(125 mm)

20 211 08

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.65"	(42 mm)
E	2.03"	(51.5 mm)
F	0.24"	(6 mm)
G	1.57"	(40 mm)
H	2.52"	(64 mm)
I	0.55"	(14 mm)
L	5.30"	(135 mm)

20 212 08 ≤ 200 A

A _{max.}	2.95"	(75 mm)
B	0.80"	(20 mm)
C	2.56"	(65 mm)
D	1.65"	(42 mm)
E	2.03"	(51.5 mm)
F	0.24"	(6 mm)
G	1.90"	(48 mm)
H	2.83"	(72 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 212 08 ≥ 224 A

A _{max.}	2.95"	(75 mm)
B	1.02"	(26 mm)
C	2.56"	(65 mm)
D	2.10"	(53 mm)
E	2.32"	(59 mm)
F	0.24"	(6 mm)
G	1.90"	(48 mm)
H	2.83"	(72 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 213 08 ≤ 315 A

A _{max.}	2.95"	(75 mm)
B	1.02"	(26 mm)
C	2.56"	(65 mm)
D	2.10"	(53 mm)
E	2.32"	(59 mm)
F	0.24"	(6 mm)
G	2.36"	(60 mm)
H	3.27"	(83 mm)
I	0.55"	(14 mm)
L	5.90"	(150 mm)

20 213 08 400 A

A _{max.}	2.95"	(75 mm)
B	1.26"	(32 mm)
C	2.56"	(65 mm)
D	2.56"	(65 mm)
E	2.90"	(73.5 mm)
F	0.24"	(6 mm)
G	2.36"	(60 mm)
H	3.40"	(86 mm)
I	0.67"	(17 mm)
L	5.90"	(150 mm)

20 213 08 500 - 630 A

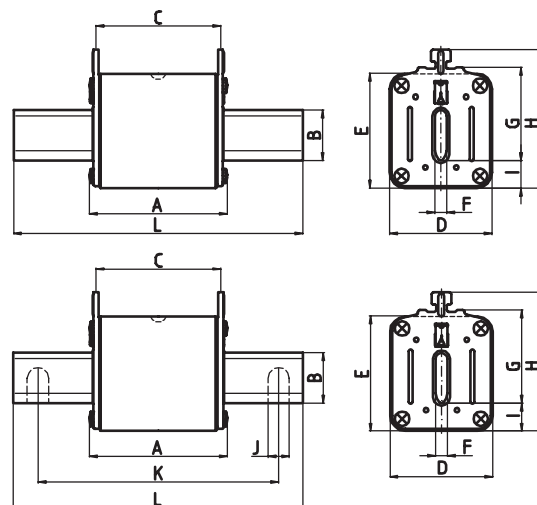
A _{max.}	2.95"	(75 mm)
B	1.26"	(32 mm)
C	2.56"	(65 mm)
D	2.87"	(73 mm)
E	2.87"	(73 mm)
F	0.24"	(6 mm)
G	2.36"	(60 mm)
H	3.40"	(86 mm)
I	0.63"	(16 mm)
L	5.90"	(150 mm)

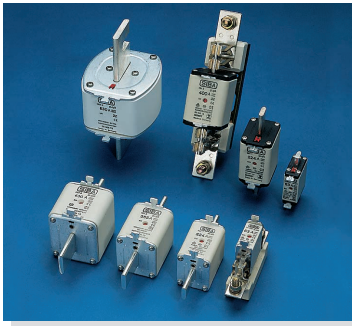
20 225 08

A _{max.}	3.54"	(90 mm)
B	1.97"	(50 mm)
C	2.56"	(65 mm)
D	3.94"	(100 mm)
E	4.25"	(108 mm)
F	0.30"	(8 mm)
G	3.35"	(85 mm)
H	4.84"	(123 mm)
I	1.10"	(28 mm)
J	5.90"	(150 mm)
K	0.63"	(16 mm)
L	7.87"	(200 mm)

20 227 08

A _{max.}	3.94"	(100 mm)
B	1.97"	(50 mm)
C	3.43"	(87 mm)
D	3.94"	(100 mm)
E	4.25"	(108 mm)
F	0.24"	(6 mm)
G	3.35"	(85 mm)
H	4.84"	(123 mm)
I	1.10"	(28 mm)
J	-	
K	-	
L	7.87"	(200 mm)





LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

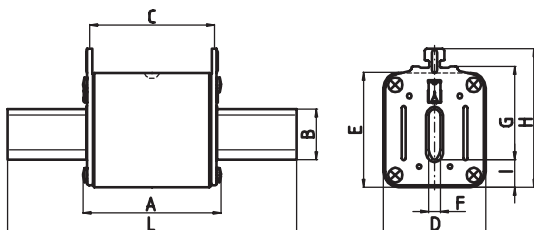
aM MOTOR CIRCUIT
PROTECTION

Size 000	Rated voltage AC 1000 V	Metal Removal Tags with top indicator	Standard IEC 60269-2
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Rated current	Part No.	Weight (kg/1)	Pack
16 A	20 386 08	0.18	3
20 A	20 386 08	0.18	3
25 A	20 386 08	0.18	3
35 A	20 386 08	0.18	3
50 A	20 386 08	0.18	3
63 A	20 386 08	0.18	3
80 A	20 386 08	0.18	3
100 A	20 386 08	0.18	3

Size 00	Rated voltage AC 1000 V	Metal Removal Tags with top indicator	Standard IEC 60269-2
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Rated current	Part No.	Weight (kg/1)	Pack
125 A	20 389 08	0.28	3
160 A	20 389 08	0.28	3



20 386 08	20 389 08
A_{max.} 3.39" (86 mm)	A_{max.} 3.66" (93 mm)
B 0.60" (15 mm)	B 0.60" (15 mm)
C 3.07" (78 mm)	C 3.35" (85 mm)
D 0.80" (20.5 mm)	D 1.16" (29.5 mm)
E 1.60" (40.5 mm)	E 1.81" (46 mm)
F 0.24" (6 mm)	F 0.24" (6 mm)
G 1.38" (35 mm)	G 1.38" (35 mm)
H 2.05" (52 mm)	H 2.28" (58 mm)
I 0.28" (7 mm)	I 0.50" (13 mm)
L 4.33" (110 mm)	L 4.61" (117 mm)

LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gTr TRANSFORMER
 PROTECTION

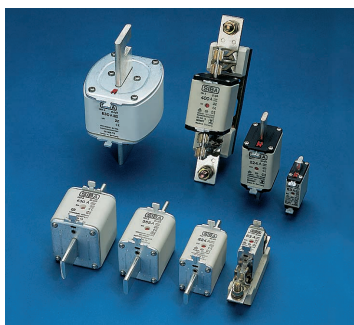

Size 2	Rated voltage AC 400 V	Metal Removal Tags with combi indicator	Standard VDE 0636/2011
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Rated current	Rated transformer capacity kVA	Part No.	Weight (kg/1)	Pack
72 A	50	20 004 15	0.65	3
108 A	75	20 004 15	0.65	3
144 A	100	20 004 15	0.65	3
180 A	125	20 004 15	0.65	3
231 A	160	20 004 15	0.65	3
289 A	200	20 004 15	0.65	3
361 A	250	20 004 15	0.65	3

Size 3	Rated voltage AC 400 V	Metal Removal Tags with combi indicator	Standard VDE 0636/2011
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Rated current	Rated transformer capacity kVA	Part No.	Weight (kg/1)	Pack
72 A	50	20 005 15	0.88	3
108 A	75	20 005 15	0.88	3
144 A	100	20 005 15	0.88	3
180 A	125	20 005 15	0.88	3
231 A	160	20 005 15	0.88	3
289 A	200	20 005 15	0.88	3
361 A	250	20 005 15	0.88	3
455 A	315	20 005 15	0.88	3
577 A	400	20 005 15	0.88	3
722 A	500	20 005 15*	0.88	3
909 A	630	20 005 15*	0.88	3

* with top indicator



LOW VOLTAGE FUSES
EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

gTr TRANSFORMER
PROTECTION

Size 4a **Rated voltage AC 400 V** **Metal Removal Tags with top indicator** **Standard VDE 0636/2011**

Rated current	Rated transformer capacity kVA	Part No.	Weight (kg/1)	Pack
72 A	50	20 120 15	3.0	1
108 A	75	20 120 15	3.0	1
144 A	100	20 120 15	3.0	1
180 A	125	20 120 15	3.0	1
231 A	160	20 120 15	3.0	1
289 A	200	20 120 15	3.0	1
361 A	250	20 120 15	3.0	1
455 A	315	20 120 15	3.0	1
577 A	400	20 120 15	3.0	1
722 A	500	20 120 15	3.0	1
909 A	630	20 120 15	3.0	1
1155 A	800	20 120 15	3.0	1
1443 A	1000	20 120 15	3.0	1

20 004 15

A _{max.}	2.95" (75 mm)
B	1.02" (26 mm)
C	2.56" (65 mm)
D	2.10" (53 mm)
E	2.32" (59 mm)
F	0.24" (6 mm)
G	1.90" (48 mm)
H	2.83" (72 mm)
I	0.55" (14 mm)
L	5.90" (150 mm)

**20 005 15
≤ 577 A**

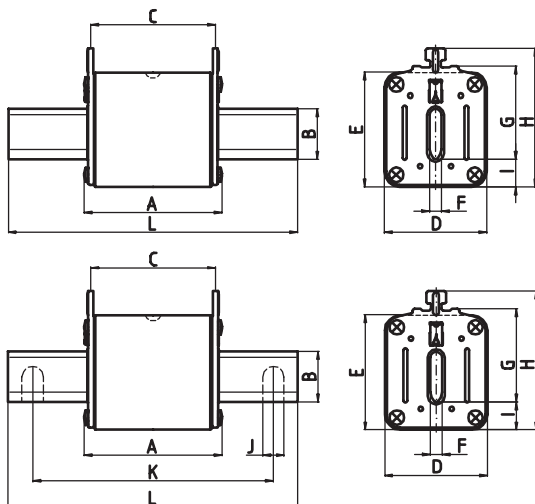
A _{max.}	2.95" (75 mm)
B	1.26" (32 mm)
C	2.56" (65 mm)
D	2.56" (65 mm)
E	2.90" (73.5 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.40" (86 mm)
I	0.67" (17 mm)
L	5.90" (150 mm)

**20 005 15
> 577 A**

A _{max.}	2.95" (75 mm)
B	1.26" (32 mm)
C	2.56" (65 mm)
D	2.87" (73 mm)
E	2.87" (73 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.40" (86 mm)
I	0.63" (16 mm)
L	5.90" (150 mm)

20 120 15

A _{max.}	3.94" (100 mm)
B	1.97" (50 mm)
C	3.43" (87 mm)
D	3.94" (100 mm)
E	4.25" (108 mm)
F	0.24" (6 mm)
G	3.35" (85 mm)
H	4.84" (123 mm)
I	1.10" (28 mm)
J	-
K	-
L	7.87" (200 mm)



LOW VOLTAGE FUSES
 EUROPEAN NH KNIFE-BLADE FUSE SYSTEM

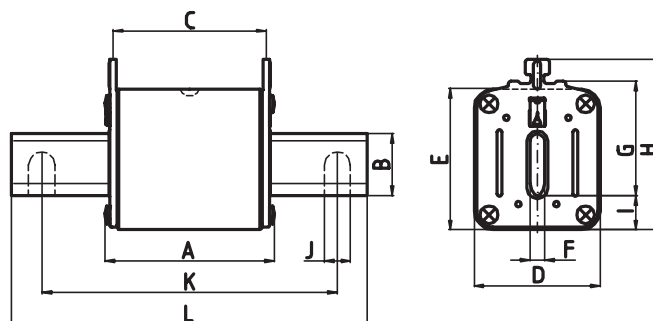
gTF GENERAL
 APPLICATION


Size **3** Rated voltage **AC 1500 V** Metal Removal Tags

Rated current	Part No.	Weight (kg/1)	Pack	
6 A	20 246 02	1.35	1	
10 A	20 246 02	1.35	1	
16 A	20 246 02	1.35	1	
20 A	20 246 02	1.35	1	
25 A	20 246 02	1.35	1	
36 A	20 246 02	1.35	1	
50 A	20 246 02	1.35	1	
63 A	20 246 02	1.35	1	
80 A	20 246 02	1.35	1	
100 A	20 246 02	1.35	1	
125 A	20 246 02	1.35	1	
160 A	20 246 02	1.35	1	
200 A	20 246 02	1.35	1	
250 A	20 246 02	1.35	1	
315 A	20 246 02	1.35	1	

20 246 02

A	5.12" (130 mm)
B	1.26" (32 mm)
C	4.72" (120 mm)
D	2.40" (61 mm)
E	2.72" (69 mm)
F	0.24" (6 mm)
G	2.36" (60 mm)
H	3.20" (81 mm)
I	0.47" (12 mm)
L	8.07" (205 mm)



Size 000	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
6 A	20 000 13/20 438 13	1.4	36	75	130	
10 A	20 000 13/20 438 13	1.2	230	320	560	
16 A	20 000 13/20 438 13	1.6	420	490	810	
20 A	20 000 13/20 438 13	1.8	760	910	1,480	
25 A	20 000 13/20 438 13	2.3	1,440	1,780	2,890	
32 A	20 000 13/20 438 13	3.1	2,600	3,360	5,630	
35 A	20 000 13/20 438 13	3.8	3,100	4,770	7,610	
40 A	20 000 13/20 438 13	4.0	4,700	6,750	11,300	
50 A	20 000 13/20 438 13	4.0	5,900	8,340	13,600	
63 A	20 000 13/20 438 13	4.5	10,300	16,200	26,400	
80 A	20 000 13/20 438 13	5.4	17,300	27,200	45,500	
100 A	20 000 13/20 438 13	6.5	28,900	45,500	88,600	

Size 00	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
125 A	20 001 13/20 439 13	8.2	44,400	78,600	127,500	
160 A	20 001 13/20 439 13	11.2	78,500	139,600	226,600	

Size 0	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
6 A	20 002 13	1.6	36	75	130	
10 A	20 002 13	1.3	230	320	560	
16 A	20 002 13	2.0	420	490	810	
20 A	20 002 13	2.3	760	910	1,480	
25 A	20 002 13	2.8	1,440	1,780	2,890	
32 A	20 002 13	3.5	2,600	3,360	5,630	
35 A	20 002 13	4.1	3,100	4,770	7,610	
40 A	20 002 13	4.1	4,700	6,750	11,300	
50 A	20 002 13	5.3	5,900	8,340	13,600	
63 A	20 002 13	6.0	10,300	16,200	26,400	
80 A	20 002 13	6.9	17,300	27,200	45,500	
100 A	20 002 13	8.0	28,900	45,500	88,600	
125 A	20 002 13	10.3	44,400	78,600	127,500	
160 A	20 002 13	13.5	78,500	139,600	226,600	

Size 1	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
16 A	20 003 13/20 441 13	1.9	420	490	810	
20 A	20 003 13/20 441 13	2.2	760	910	1,480	
25 A	20 003 13/20 441 13	2.6	1,440	1,780	2,890	
32 A	20 003 13/20 441 13	3.5	2,600	3,360	5,630	
35 A	20 003 13/20 441 13	3.9	3,100	4,770	7,610	
40 A	20 003 13/20 441 13	4.3	4,700	6,750	11,300	
50 A	20 003 13/20 441 13	5.1	5,900	8,340	13,600	
63 A	20 003 13/20 441 13	5.8	10,300	16,200	26,400	
80 A	20 003 13/20 441 13	6.5	17,300	27,200	45,500	
100 A	20 003 13/20 441 13	7.8	28,900	45,500	88,600	
125 A	20 003 13/20 441 13	10.0	44,400	78,600	127,500	
160 A	20 003 13/20 441 13	12.8	78,500	139,600	226,600	
200 A	20 003 13/20 441 13	15.0	157,600	248,200	390,900	
224 A	20 003 13/20 441 13	16.2	194,800	297,600	483,400	
250 A	20 003 13/20 441 13	17.9	240,800	368,000	616,000	

Size 2	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
35 A	20 004 13/20 442 13	3.9	3,100	4,770	7,610	
40 A	20 004 13/20 442 13	4.3	4,700	6,750	11,300	
50 A	20 004 13/20 442 13	5.1	5,900	8,340	13,600	
63 A	20 004 13/20 442 13	5.8	10,300	16,200	26,400	
80 A	20 004 13/20 442 13	6.5	17,300	27,200	45,500	
100 A	20 004 13/20 442 13	7.8	28,900	45,500	88,600	
125 A	20 004 13/20 442 13	10.0	44,400	78,600	127,500	
160 A	20 004 13/20 442 13	12.8	78,500	139,600	226,600	
200 A	20 004 13/20 442 13	15.5	157,600	248,200	390,900	
224 A	20 004 13/20 442 13	16.4	194,800	297,600	483,400	
250 A	20 004 13/20 442 13	18.0	240,800	368,000	616,000	
315 A	20 004 13/20 442 13	21.5	513,000	716,000	1,164,000	
355 A	20 004 13/20 442 13	23.7	616,000	859,000	1,483,000	
400 A	20 004 13/20 442 13	29.5	859,000	1,236,000	2,008,000	

Size 3	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
315 A	20 005 13/20 443 13	21.5	513,000	716,000	1,164,000	
355 A	20 005 13/20 443 13	23.7	616,000	859,000	1,483,000	
400 A	20 005 13/20 443 13	29.5	859,000	1,236,000	2,008,000	
500 A	20 005 13/20 443 13	38.0	1,130,000	1,670,000	2,800,000	
630 A	20 005 13/20 443 13	46.0	1,950,000	2,980,000	4,840,000	

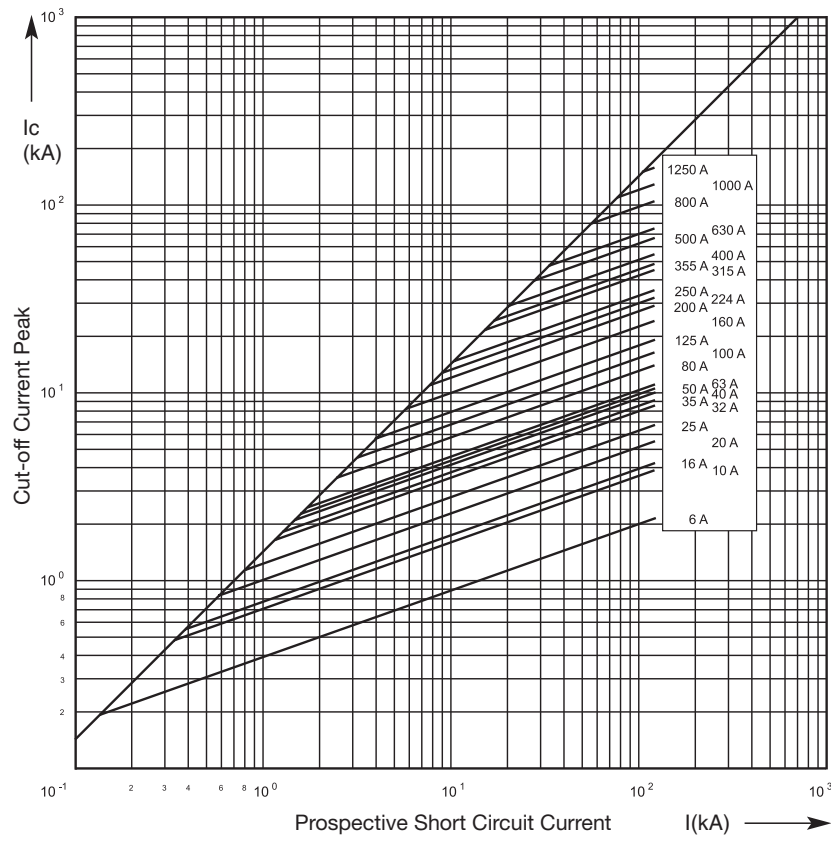
Size 4	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
400 A	20 006 13	26	859,000	1,236,000	2,008,000	
500 A	20 006 13	38	1,130,000	1,670,000	2,800,000	
630 A	20 006 13	49	1,950,000	2,980,000	4,840,000	
800 A	20 006 13	66	3,700,000	5,450,000	8,900,000	
1000 A	20 006 13	78	5,800,000	8,900,000	14,400,000	
1250 A	20 006 13	95	11,000,000	16,200,000	27,200,000	
1600 A	20 228 13	138	14,000,000	20,700,000	33,600,000	

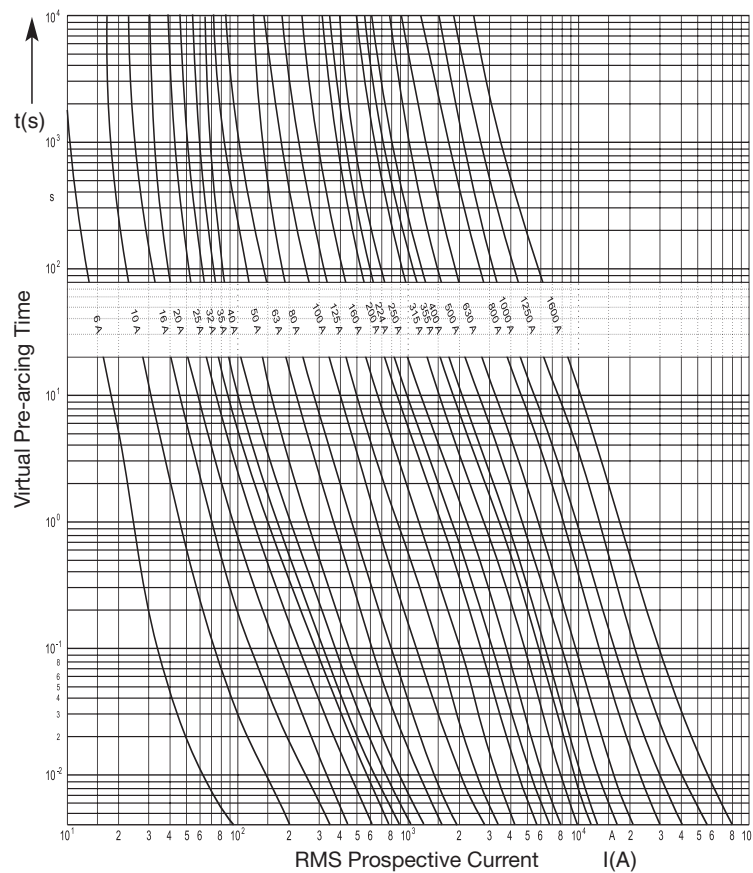
Size 4a	Rated voltage AC 500 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	
400 A	20 120 13	34	859,000	1,236,000	2,008,000	
500 A	20 120 13	41	1,130,000	1,670,000	2,800,000	
630 A	20 120 13	49	1,950,000	2,980,000	4,840,000	
800 A	20 120 13	70	3,700,000	5,450,000	8,900,000	
1000 A	20 120 13	83	5,800,000	8,900,000	14,400,000	
1250 A	20 120 13	104	11,000,000	16,200,000	27,200,000	
1600 A	20 120 13	138	14,000,000	20,700,000	33,600,000	

Cut-off-characteristics



Time / Current Characteristics



Size 000	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
16 A	20 477 13/20 452 13	1.9	420	490	810	920
20 A	20 477 13/20 452 13	2.35	760	910	1,480	1,670
25 A	20 477 13/20 452 13	2.75	1,440	1,780	2,890	2,890
32 A	20 477 13/20 452 13	3.6	2,600	3,360	5,630	5,630
35 A	20 477 13/20 452 13	4	3,100	4,770	7,610	7,610
40 A	20 477 13/20 452 13	4.4	4,700	6,750	11,300	12,800
50 A	20 477 13/20 452 13	5	5,900	8,340	13,600	15,300

Size 00	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
63 A	20 209 13/20 453 13	5.6	10,300	16,200	26,400	30,700
80 A	20 209 13/20 453 13	6.3	17,300	27,200	45,500	51,400
100 A	20 209 13/20 453 13	7.3	28,900	45,500	88,600	97,000
125 A	20 209 13/20 453 13	10.5	44,400	78,600	127,500	157,600

Size 0	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
16 A	20 210 13	2.1	420	490	810	920
20 A	20 210 13	2.6	760	910	1,480	1,670
25 A	20 210 13	3.0	1,440	1,780	2,890	2,890
32 A	20 210 13	3.7	2,600	3,360	5,630	5,630
35 A	20 210 13	4.3	3,100	4,770	7,610	7,610
40 A	20 210 13	5.0	4,700	6,750	11,300	12,800
50 A	20 210 13	5.6	5,900	8,340	13,600	15,300
63 A	20 210 13	6.5	10,300	16,200	26,400	30,700
80 A	20 210 13	7.6	17,300	27,200	45,500	51,400
100 A	20 210 13	8.9	28,900	45,500	88,600	97,000
125 A	20 210 13	11.4	44,400	78,600	127,500	157,600

Size 1	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
16 A	20 211 13/20 455 13	2.0	420	490	810	920
20 A	20 211 13/20 455 13	2.4	760	910	1,480	1,670
25 A	20 211 13/20 455 13	2.8	1,440	1,780	2,890	2,890
32 A	20 211 13/20 455 13	3.8	2,600	3,360	5,630	5,630
35 A	20 211 13/20 455 13	4.2	3,100	4,770	7,610	7,610
40 A	20 211 13/20 455 13	4.7	4,700	6,750	11,300	12,800
50 A	20 211 13/20 455 13	5.5	5,900	8,340	13,600	15,300
63 A	20 211 13/20 455 13	6.3	10,300	16,200	26,400	30,700
80 A	20 211 13/20 455 13	7.3	17,300	27,200	45,500	51,400
100 A	20 211 13/20 455 13	8.6	28,900	45,500	88,600	97,000
125 A	20 211 13/20 455 13	11.0	44,400	78,600	127,500	157,600
160 A	20 211 13/20 455 13	14.0	78,500	139,600	226,600	280,200
200 A	20 211 13/20 455 13	16.5	157,600	248,200	390,900	483,400
250 A	20 211 13/20 455 13	20.1	240,800	368,000	616,000	761,000

Size 2	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
35 A	20 212 13/20 456 13	4.2	3,100	4,770	7,610	7,610
40 A	20 212 13/20 456 13	4.7	4,700	6,750	11,300	12,800
50 A	20 212 13/20 456 13	5.5	5,900	8,340	13,600	15,300
63 A	20 212 13/20 456 13	6.3	10,300	16,200	26,400	30,700
80 A	20 212 13/20 456 13	7.3	17,300	27,200	45,500	51,400
100 A	20 212 13/20 456 13	8.6	28,900	45,500	88,600	97,000
125 A	20 212 13/20 456 13	11.0	44,400	78,600	127,500	157,600
160 A	20 212 13/20 456 13	14.0	78,500	139,600	226,600	280,200
200 A	20 212 13/20 456 13	16.5	157,600	248,200	390,900	483,400
224 A	20 212 13/20 456 13	18.1	194,800	297,600	483,400	615,000
250 A	20 212 13/20 456 13	20.2	240,800	368,000	616,000	761,000
315 A	20 212 13/20 456 13	24.1	513,000	716,000	1,164,000	1,438,000
355 A	20 212 13	28.6	616,000	859,000	1,483,000	1,725,000
400 A	20 212 13	32.0	859,000	1,236,000	2,008,000	2,558,000

Size 3	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
315 A	20 213 13	24.1	513,000	716,000	1,164,000	1,438,000
355 A	20 213 13	28.5	616,000	859,000	1,483,000	1,725,000
400 A	20 213 13	31.8	859,000	1,236,000	2,008,000	2,558,000
500 A	20 213 13	42.0	1,113,000	1,670,000	2,800,000	3,360,000

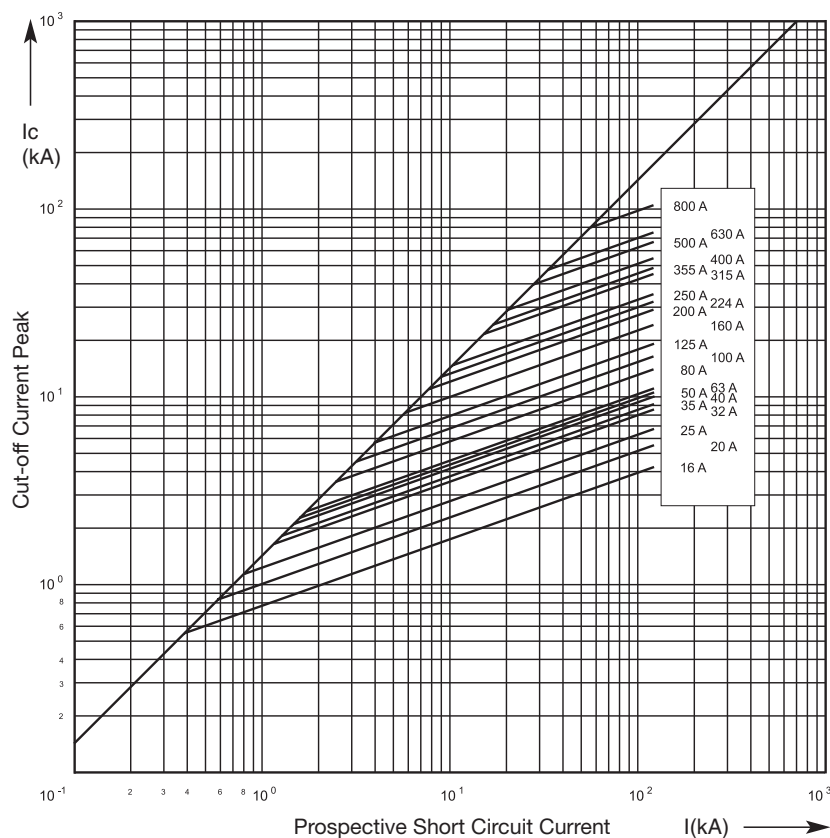
Size 4	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I²t-value A²s	Total I²t-value @ 254 V A²s	Total I²t-value @ 440 V A²s	Total I²t-value @ 500 V A²s
400 A	20 225 13	32	859,000	1,236,000	2,008,000	2,558,000
500 A	20 225 13	42	1,113,000	1,670,000	2,800,000	3,360,000
630 A	20 225 13	51	1,950,000	2,980,000	4,840,000	6,000,000
800 A	20 225 13	65	3,700,000	5,450,000	8,900,000	11,300,000

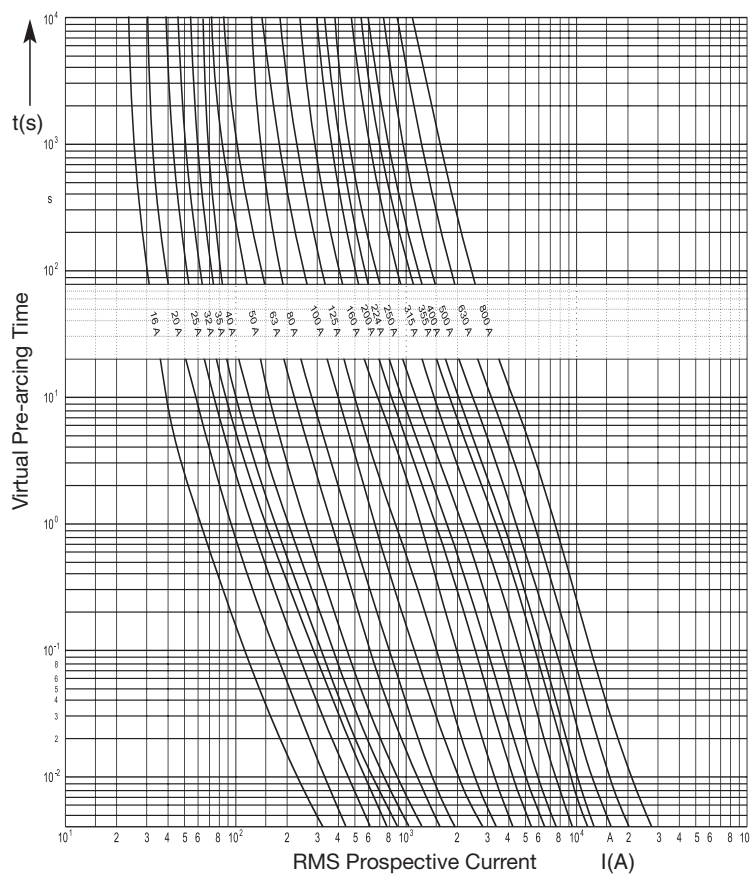
Size 4a	Rated voltage AC 690 V	Operating class gG	Rated breaking capacity 120 kA	Standard IEC 60269-2-1
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Rated current	Part No.	Power loss W	Pre-arcing I²t-value A²s	Total I²t-value @ 254 V A²s	Total I²t-value @ 440 V A²s	Total I²t-value @ 500 V A²s
400 A	20 227 13	36	859,000	1,236,000	2,008,000	2,558,000
500 A	20 227 13	44	1,113,000	1,670,000	2,800,000	3,360,000
630 A	20 227 13	56	1,950,000	2,980,000	4,840,000	6,000,000
800 A	20 227 13	70	3,700,000	5,450,000	8,900,000	11,300,000

Cut-off-characteristics



Time / Current Characteristics



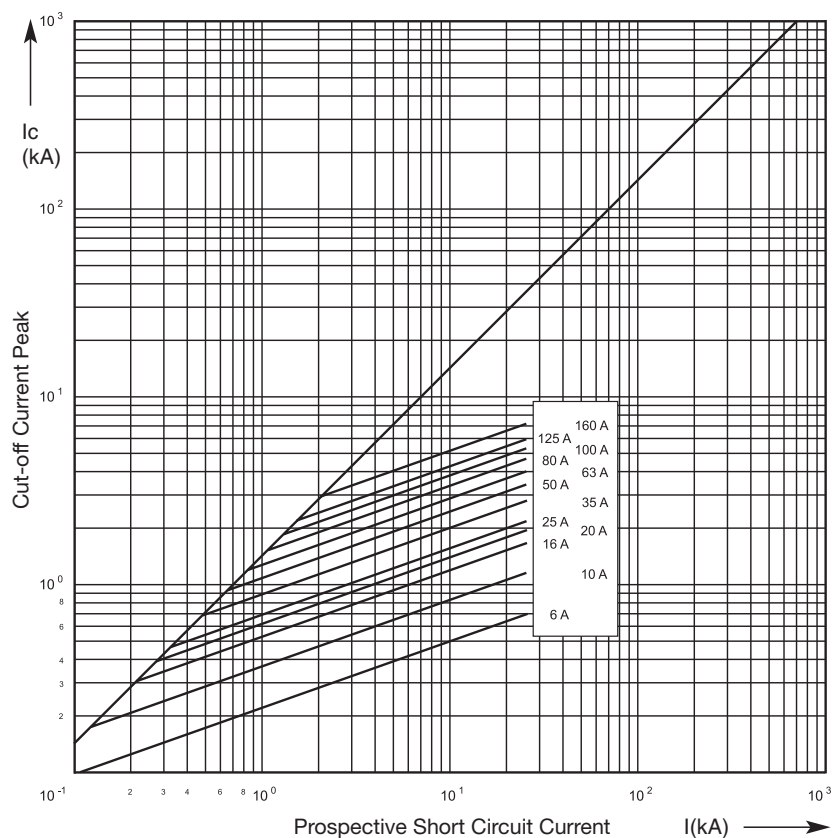
Size 000	Rated voltage AC 1000 V	Operating class gB	Rated breaking capacity 25 kA
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Rated current	Part No.	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 760 V A ² s	
6 A	20 386 03	6	18	
10 A	20 386 03	31	93	
16 A	20 386 03	83	250	
20 A	20 386 03	145	435	
25 A	20 386 03	210	630	
35 A	20 386 03	440	1,320	
50 A	20 386 03	870	2,610	
63 A	20 386 03	1,350	4,050	
80 A	20 386 03	2,300	6,900	
100 A	20 386 03	3,300	9,900	

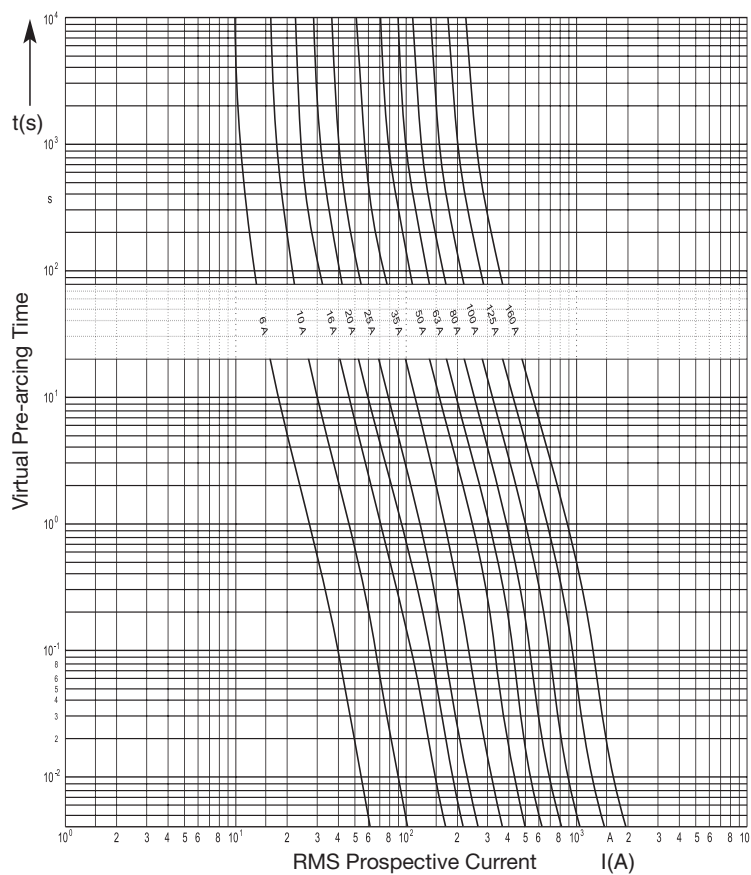
Size 00	Rated voltage AC 1000 V	Operating class gB	Rated breaking capacity 25 kA
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Rated current	Part No.	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 760 V A ² s	
6 A	20 389 03	6	18	
10 A	20 389 03	31	93	
16 A	20 389 03	83	250	
20 A	20 389 03	145	435	
25 A	20 389 03	210	630	
35 A	20 389 03	440	1,320	
50 A	20 389 03	870	2,610	
63 A	20 389 03	1,350	4,050	
80 A	20 389 03	2,300	6,900	
100 A	20 389 03	3,300	9,900	
125 A	20 389 03	4,700	14,100	
160 A	20 389 03	8,300	24,900	

Cut-off-characteristics



Time / Current Characteristics



Size 000	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A²s	Total I ² t-value @ 254 V A²s	Total I ² t-value @ 440 V A²s	Total I ² t-value @ 500 V A²s
16 A	20 477 08	0.8	476	780	950	1,280
20 A	20 477 08	1.0	921	1,500	1,850	2,500
25 A	20 477 08	1.4	1,441	2,400	2,880	3,900
35 A	20 477 08	1.8	2,820	4,700	5,640	7,600
50 A	20 477 08	2.4	7,290	12,000	14,600	19,700

Size 00	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A²s	Total I ² t-value @ 254 V A²s	Total I ² t-value @ 440 V A²s	Total I ² t-value @ 500 V A²s
63 A	20 209 08	3.2	10,400	17,200	20,800	28,100
80 A	20 209 08	4.2	17,800	29,400	35,600	48,100
100 A	20 209 08	5.2	29,100	48,000	58,200	78,600
125 A	20 209 08	6.6	46,700	77,000	93,400	126,000

Size 0	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A²s	Total I ² t-value @ 254 V A²s	Total I ² t-value @ 440 V A²s	Total I ² t-value @ 500 V A²s
16 A	20 210 08	1.1	476	780	950	1,280
20 A	20 210 08	1.2	921	1,500	1,850	2,500
25 A	20 210 08	1.5	1,441	2,400	2,880	3,900
35 A	20 210 08	2.3	2,820	4,700	5,640	7,600
50 A	20 210 08	2.6	7,290	12,000	14,600	19,700
63 A	20 210 08	4.0	10,400	17,200	20,800	28,100
80 A	20 210 08	5.1	17,800	29,400	35,600	48,100
100 A	20 210 08	6.4	29,100	48,000	58,200	78,600
125 A	20 210 08	8.1	46,700	77,000	93,400	126,000
160 A	20 210 08	10.7	74,600	124,000	149,000	202,000

Size 1	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
16 A	20 211 08	1.0	476	780	950	1,280
20 A	20 211 08	1.1	921	1,500	1,850	2,500
25 A	20 211 08	1.4	1,441	2,400	2,880	3,900
35 A	20 211 08	2.1	2,820	4,700	5,640	7,600
50 A	20 211 08	2.4	7,290	12,000	14,600	19,700
63 A	20 211 08	3.8	10,400	17,200	20,800	28,100
80 A	20 211 08	4.8	17,800	29,400	35,600	48,100
100 A	20 211 08	6.1	29,100	48,000	58,200	78,600
125 A	20 211 08	7.8	46,700	77,000	93,400	126,000
160 A	20 211 08	10.4	74,600	124,000	149,000	202,000
200 A	20 211 08	13.7	111,000	183,000	222,000	300,000
224 A	20 211 08	16.0	132,000	218,000	264,000	357,000
250 A	20 211 08	18.2	167,000	276,000	334,000	451,000

Size 2	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
35 A	20 212 08	2.3	2,820	4,700	5,640	7,600
50 A	20 212 08	3.1	7,290	12,000	14,600	19,700
63 A	20 212 08	4.2	10,400	17,200	20,800	28,100
80 A	20 212 08	5.3	17,800	29,400	35,600	48,100
100 A	20 212 08	6.7	29,100	48,000	58,200	78,600
125 A	20 212 08	8.5	46,700	77,000	93,400	126,000
160 A	20 212 08	11.4	74,600	124,000	149,000	202,000
200 A	20 212 08	15.1	111,000	183,000	222,000	300,000
224 A	20 212 08	17.6	132,000	218,000	264,000	357,000
250 A	20 212 08	20.0	167,000	276,000	334,000	451,000
315 A	20 212 08	23.9	298,000	492,000	596,000	805,000
355 A	20 212 08	25.0	446,000	740,000	892,000	1,210,000
400 A	20 212 08	27.3	623,000	1,030,000	1,246,000	1,680,000

Size 3	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
315 A	20 213 08	24.5	298,000	492,000	596,000	805,000
400 A	20 213 08	28.0	623,000	1,030,000	1,246,000	1,680,000
500 A	20 213 08	34.5	829,000	1,370,000	1,658,000	2,240,000
630 A	20 213 08	39.7	1,470,000	2,245,000	2,940,000	3,970,000

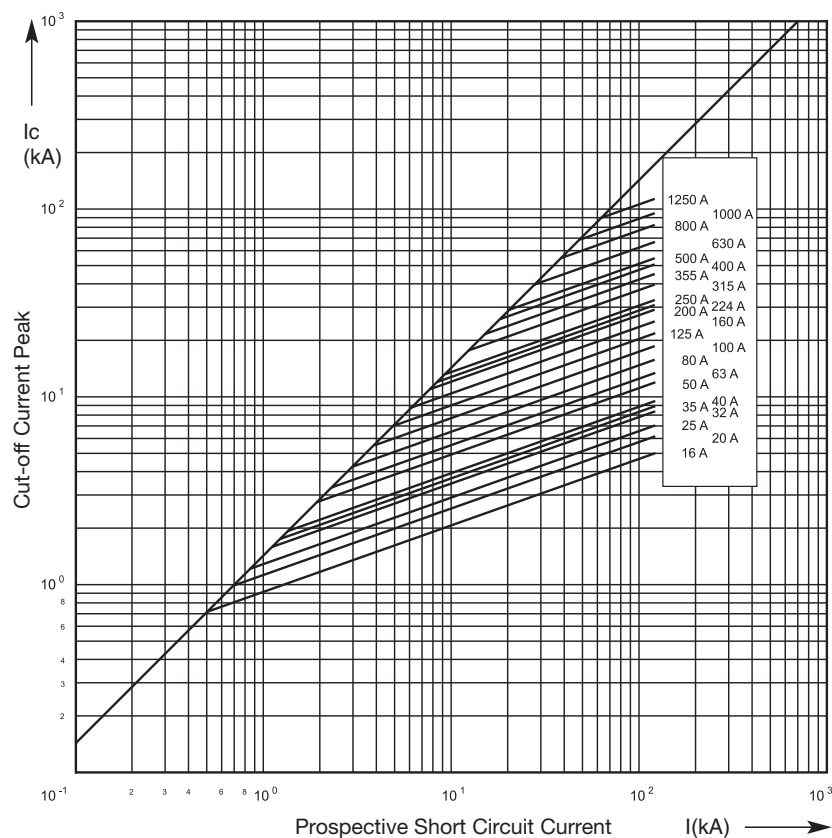
Size 4	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
400 A	20 225 08	31	623,000	1,030,000	1,246,000	1,680,000
500 A	20 225 08	40	829,000	1,370,000	1,658,000	2,240,000
630 A	20 225 08	48	1,470,000	2,245,000	2,940,000	3,970,000
800 A	20 225 08	58	2,780,000	4,590,000	5,560,000	7,510,000
1000 A	20 225 08	71	4,510,000	7,460,000	9,020,000	12,200,000

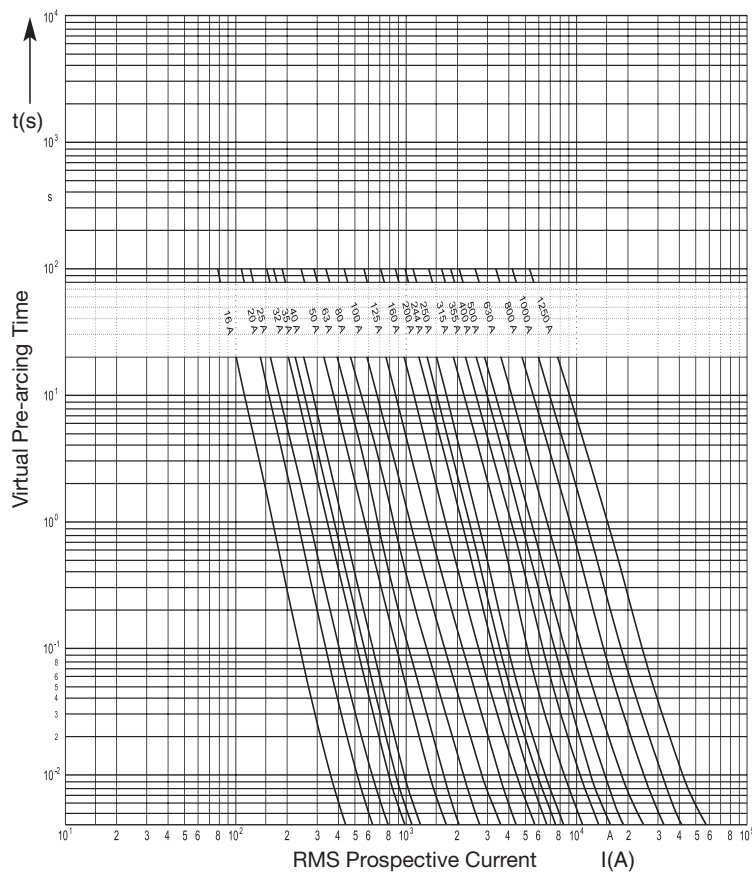
Size 4a	Rated voltage AC 690 V	Operating class aM	Rated breaking capacity 120 kA	Standard IEC 60269-2
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Rated current	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 440 V A ² s	Total I ² t-value @ 500 V A ² s
400 A	20 227 08	34	623,000	1,030,000	1,246,000	1,680,000
500 A	20 227 08	44	829,000	1,370,000	1,658,000	2,240,000
630 A	20 227 08	53	1,470,000	2,245,000	2,940,000	3,970,000
800 A	20 227 08	64	2,780,000	4,590,000	5,560,000	7,510,000
1000 A	20 227 08	78	4,510,000	7,460,000	9,020,000	12,200,000

Cut-off-characteristics



Time / Current Characteristics

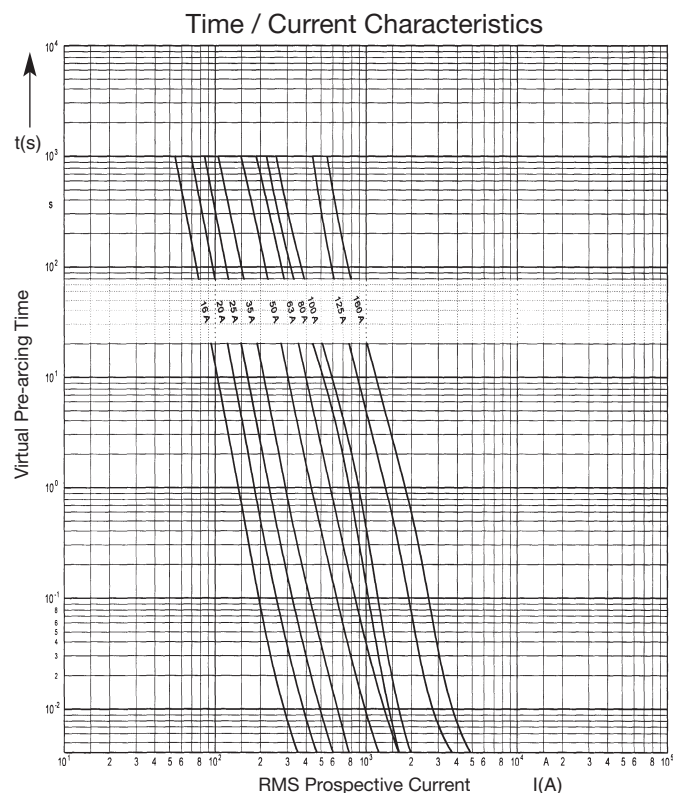
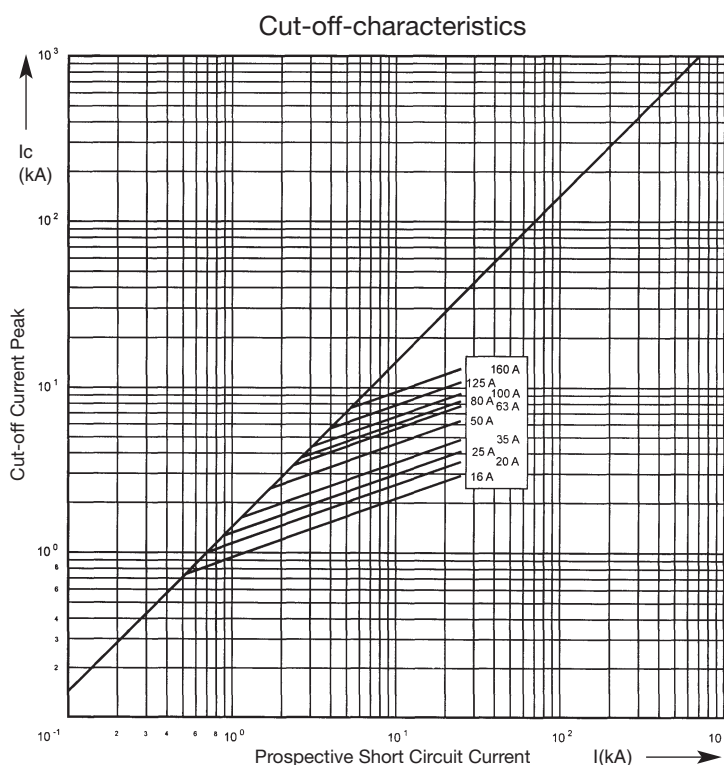


Size 000	Rated voltage AC 1000 V	Operating class aM	Rated breaking capacity	Standard IEC 60269-2
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Rated current	Part No.	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 760 V A ² s	
16 A	20 386 08	520	2,100	
20 A	20 386 08	930	3,700	
25 A	20 386 08	1,450	5,800	
35 A	20 386 08	2,450	9,800	
50 A	20 386 08	5,500	22,000	
63 A	20 386 08	10,500	42,000	
80 A	20 386 08	13,000	52,000	
100 A	20 386 08	19,000	76,000	

Size 00	Rated voltage AC 1000 V	Operating class aM	Rated breaking capacity	Standard IEC 60269-2
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Rated current	Part No.	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 760 V A ² s	
125 A	20 389 08	30,000	120,000	
160 A	20 389 08	53,000	212,000	



Size 2	Rated voltage AC 400 V	Operating class gTr	Rated breaking capacity 100 kA		Standard VDE 0636/2011	
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Rated current	Rated transformer capacity kVA	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 400 V A ² s
72 A	50	20 004 15	8.5	6,950	10,950	15,800
108 A	75	20 004 15	11.0	18,900	30,700	44,000
144 A	100	20 004 15	13.0	35,700	58,000	84,000
180 A	125	20 004 15	15.0	76,000	124,000	173,000
231 A	160	20 004 15	17.5	139,600	227,000	326,000
289 A	200	20 004 15	21.5	226,600	368,000	514,000
361 A	250	20 004 15	26.5	415,400	695,000	970,000

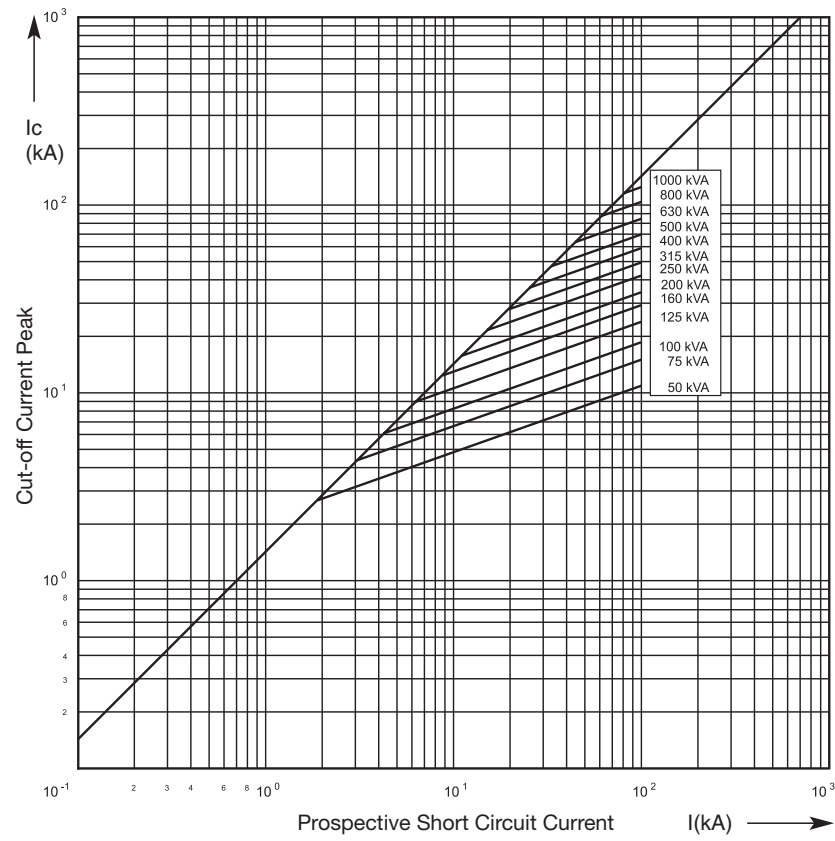
Size 3	Rated voltage AC 400 V	Operating class gTr	Rated breaking capacity 100 kA		Standard VDE 0636/2011	
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Rated current	Rated transformer capacity kVA	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 400 V A ² s
72 A	50	20 005 15	8.5	6,950	10,950	15,800
108 A	75	20 005 15	11.0	18,900	30,700	44,000
144 A	100	20 005 15	13.0	35,700	58,000	84,000
180 A	125	20 005 15	15.0	76,000	124,000	173,000
231 A	160	20 005 15	16.8	139,600	227,000	326,000
289 A	200	20 005 15	20.7	226,600	368,000	514,000
361 A	250	20 005 15	25.5	415,400	695,000	970,000
455 A	315	20 005 15	31.0	738,600	1,200,000	1,674,000
577 A	400	20 005 15	36.0	1,247,000	2,133,000	2,976,000
722 A	500	20 005 15	49.0	2,199,000	3,570,000	4,982,000
909 A	630	20 005 15	69.0	3,910,000	6,348,000	9,000,000

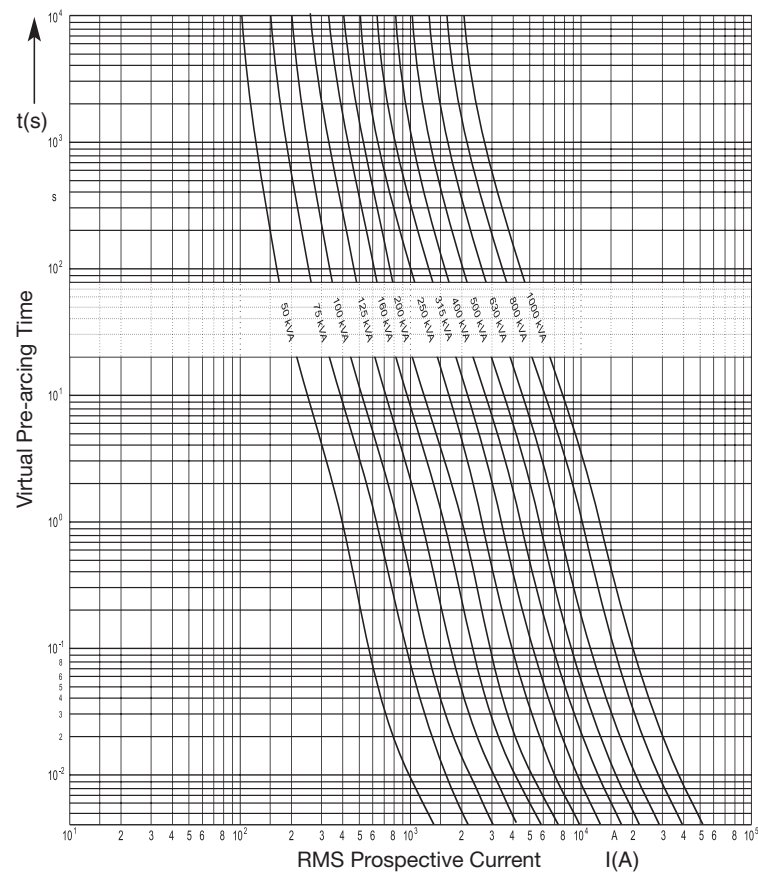
Size 4a	Rated voltage AC 400 V	Operating class gTr	Rated breaking capacity 100 kA		Standard VDE 0636/2011	
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Rated current	Rated transformer capacity kVA	Part No.	Power loss W	Pre-arcing I ² t-value A ² s	Total I ² t-value @ 254 V A ² s	Total I ² t-value @ 400 V A ² s
72 A	50	20 120 15	8.5	6,950	10,950	15,800
108 A	75	20 120 15	11.0	18,900	30,700	44,000
144 A	100	20 120 15	13.0	35,700	58,000	84,000
180 A	125	20 120 15	15.0	76,000	124,000	173,000
231 A	160	20 120 15	17.5	139,600	227,000	326,000
289 A	200	20 120 15	21.5	226,600	368,000	514,000
361 A	250	20 120 15	27.0	415,400	695,000	970,000
455 A	315	20 120 15	33.0	738,600	1,200,000	1,674,000
577 A	400	20 120 15	38.0	1,247,000	2,133,000	2,976,000
722 A	500	20 120 15	51.0	2,199,000	3,570,000	4,982,000
909 A	630	20 120 15	72.0	3,910,000	6,348,000	9,000,000
1155 A	800	20 120 15	86.0	7,613,000	12,362,000	16,737,000
1443 A	1000	20 120 15	110.0	13,135,000	21,330,000	29,770,000

Cut-off-characteristics



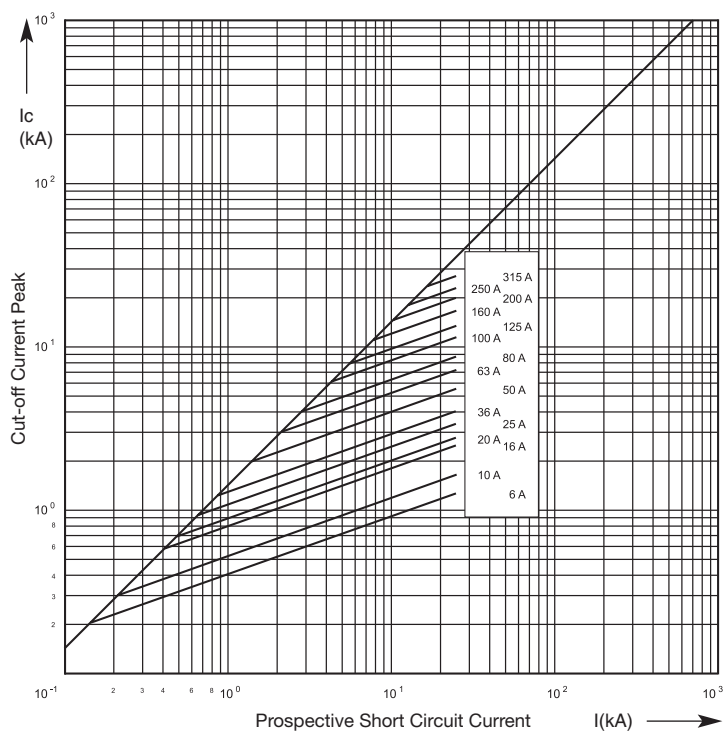
Time / Current Characteristics



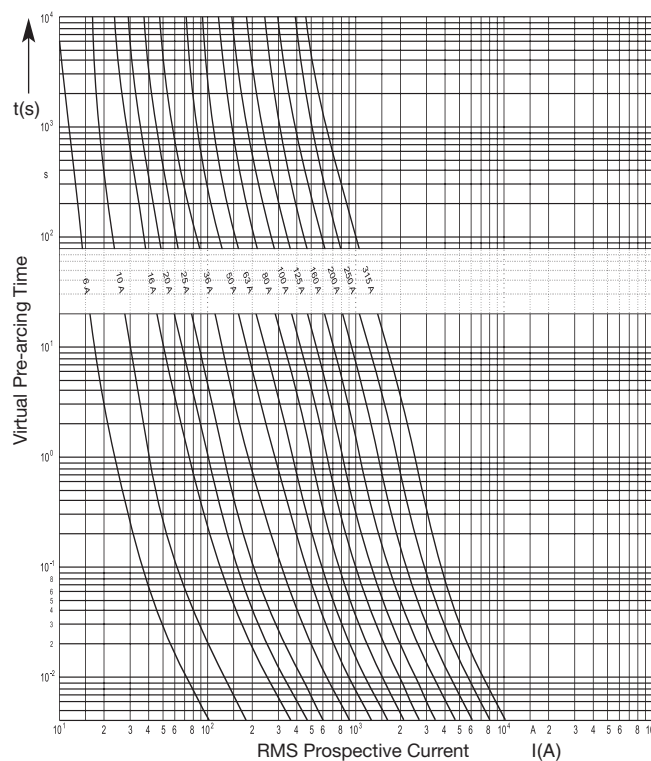
Size
3
Rated voltage
AC 1500 V
Operating class
gTF
Rated breaking capacity
25 kA

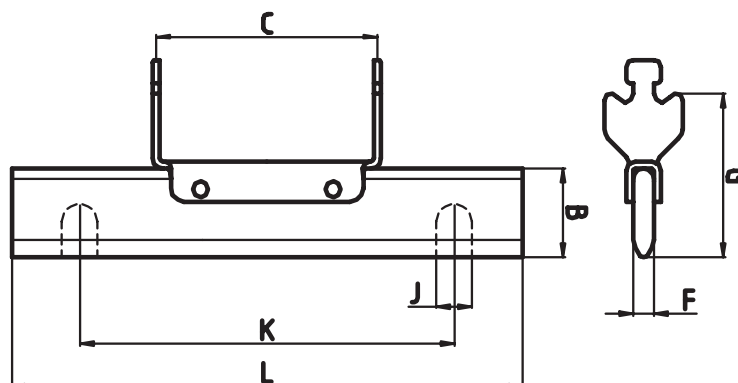
Rated current	Part No.	Pre-arcing I^2t -value A ² s	Total I^2t -value @ 760 V A ² s	Total I^2t -value @ 1200 V A ² s	
6 A	20 246 02	40	160	240	
10 A	20 246 02	90	360	540	
16 A	20 246 02	320	1,300	1,900	
20 A	20 246 02	460	1,900	2,800	
25 A	20 246 02	850	3,400	5,100	
36 A	20 246 02	1,440	5,760	8,600	
50 A	20 246 02	3,800	15,200	22,700	
63 A	20 246 02	9,000	36,000	53,600	
80 A	20 246 02	15,200	60,800	90,500	
100 A	20 246 02	36,000	144,000	215,000	
125 A	20 246 02	61,000	244,000	362,000	
160 A	20 246 02	117,000	468,000	695,000	
200 A	20 246 02	208,000	832,000	1,234,000	
250 A	20 246 02	324,000	1,296,000	1,928,000	
315 A	20 246 02	548,000	2,192,000	3,258,000	

Cut-off-characteristics



Time / Current Characteristics



Knife Links
Sizes
00 - 4a
Rated voltage
AC 500/660/690 V
Standard
DIN 43620

Size 00
Part No.

24 001 02
24 080 02 ¹

B	0.60" (15 mm)
C	1.90" (48 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
J	–
K	–
L	3.07" (78 mm)

Size 0
Part No.

24 002 02
24 176 02 ¹

B	0.60" (15 mm)
C	2.56" (65 mm)
F	0.24" (6 mm)
G	1.46" (37 mm)
J	–
K	–
L	4.92" (125 mm)

Size 1
Part No.

24 003 02
24 158 02 ¹

B	0.80" (20 mm)
C	2.56" (65 mm)
F	0.24" (6 mm)
G	1.65" (42 mm)
J	–
K	–
L	5.30" (135 mm)

Size 2
Part No.

24 004 02
24 159 02 ¹

B	0.60" (15 mm)
C	1.90" (48 mm)
F	0.24" (6 mm)
G	1.38" (35 mm)
J	–
K	–
L	3.07" (78 mm)

Size 3
Part No.

24 005 02
24 160 02 ¹

A	1.02" (26 mm)
B	2.56" (65 mm)
C	0.24" (6 mm)
D	2.13" (54 mm)
G	–
I	–
K	5.90" (150 mm)

Size 4
Part No.

24 006 02

B	1.97" (50 mm)
C	2.56" (65 mm)
F	0.30" (8 mm)
G	3.35" (85 mm)
J	0.63" (16 mm)
K	5.90" (150 mm)
L	7.87" (200 mm)

Size 4a
Part No.

24 006 07

B	1.97" (50 mm)
C	3.43" (87 mm)
F	0.24" (6 mm)
G	3.35" (85 mm)
J	–
K	–
L	7.87" (200 mm)

¹ Insulated removal tags

Fuse Bases 1 pole

Size
000 + 00

Rated voltage
AC 500/660/690 V

Standard
DIN 43620

Rated
current

160 A

Part No.

21 001 01

Weight
(kg/1)

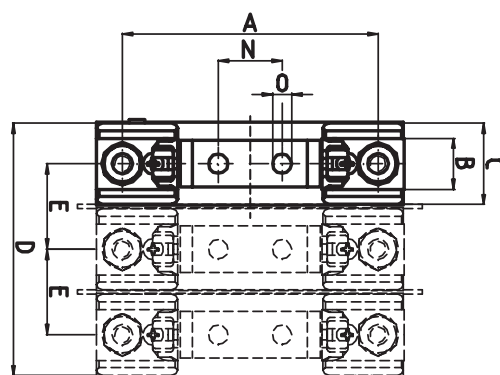
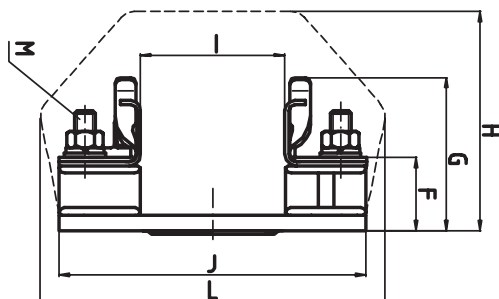
0.26

Pack

3

Part No.
21 001 01

A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
D	3.90" (99 mm)
E	1.32" (33.5 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
H	3.40" (86 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)



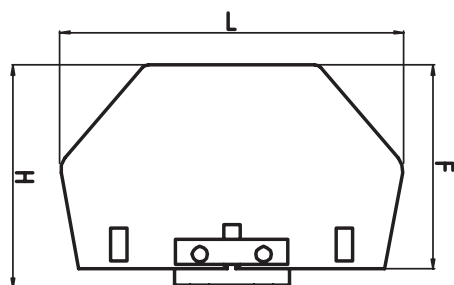
External Wall

Size
000 + 00

Standard
DIN 43620

Part No.
25 001 01

F	3.15" (80 mm)
H	3.40" (86 mm)
L	5.30" (135 mm)



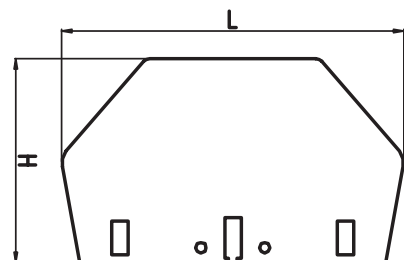
Partition Wall

Size
000 + 00

Standard
DIN 43620

Part No.
25 001 03-2

H	3.15" (80 mm)
L	5.30" (135 mm)



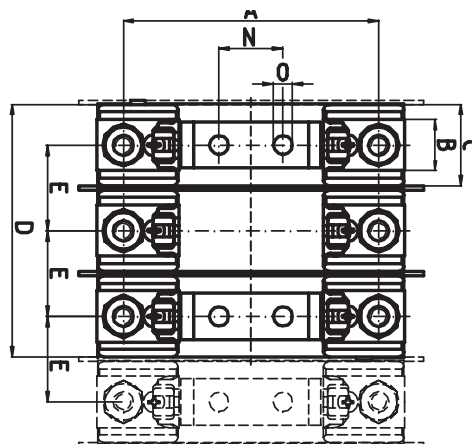
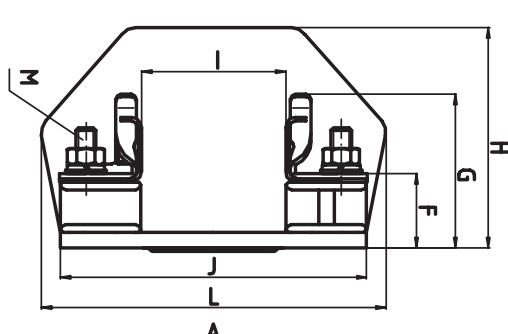
Fuse Bases
3 pole

Size
000 + 00

Rated voltage
AC 500/660/690 V

Standard
DIN 43620

Rated current	Part No.	Weight (kg/1)	Pack
160 A	21 001 03	0.81	1



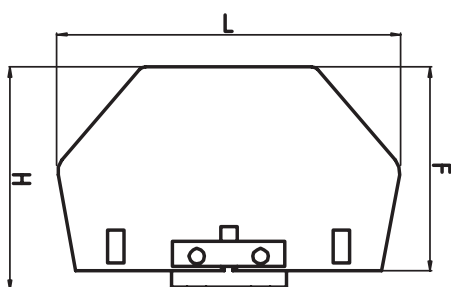
Part No.
21 001 03

A	3.94" (100 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
D	3.90" (99 mm)
E	1.32" (33.5 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
H	3.40" (86 mm)
I	2.24" (57 mm)
J	4.72" (120 mm)
L	5.30" (135 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)

External Wall

Size
000 + 00

Standard
DIN 43620



Part No.
25 001 01

F	3.15" (80 mm)
H	3.40" (86 mm)
L	5.30" (135 mm)

Fuse Bases
1 pole

 Size
0

 Rated voltage
AC 500/660/690 V

 Standard
DIN 43620

 Rated
 current

160 A

Part No.

21 002 04

 Weight
 (kg/1)

0.44

Pack

1

Part No.
21 002 04

A 5.98" (152 mm)

B 0.79" (20 mm)

C 1.26" (32 mm)

D 1.14" (29 mm)

G 2.32" (59 mm)

I 2.87" (73 mm)

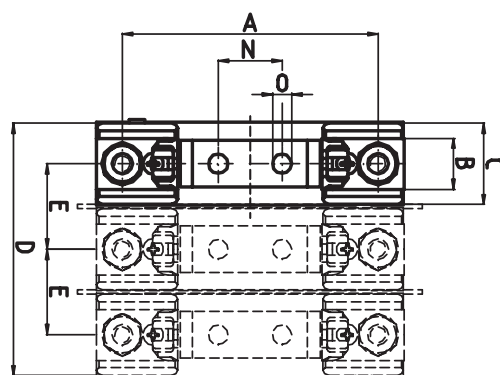
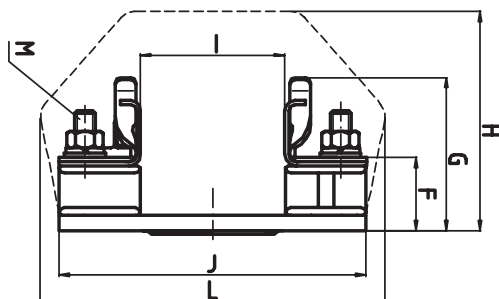
J 5.35" (136 mm)

L 6.81" (173 mm)

M M 8

N 0.98" (25 mm)

O 0.30" (7.5 mm)


External Wall

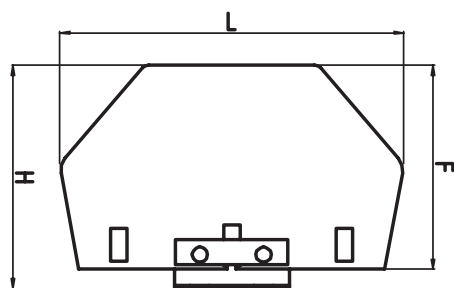
 Size
0

 Standard
DIN 43620
Part No.
25 006 01

F 4.16" (106 mm)

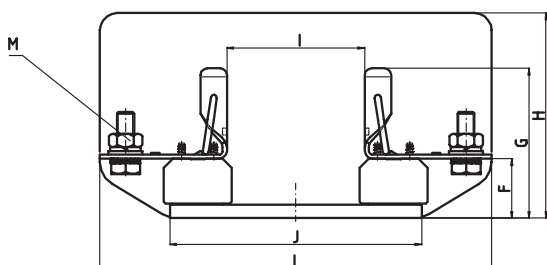
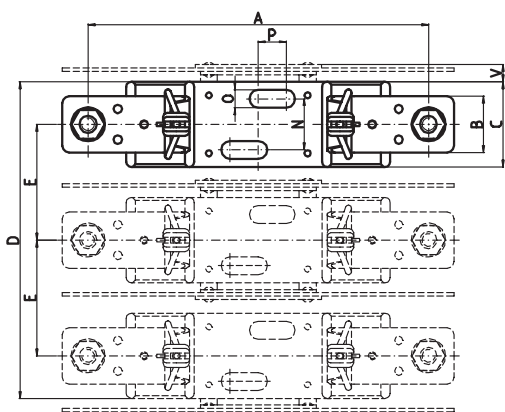
H 4.52" (115 mm)

L 7.85" (200 mm)



**Fuse Bases
1 pole**
**Size
1 - 3**
**Rated voltage
AC 500/660/690 V**
**Standard
DIN 43620**

Rated current	Part No.	Weight (kg/1)	Pack
250 A	21 003 01	0.72	1
400 A	21 004 01	0.88	1
630 A	21 005 01	1.16	1


**Size 1
Part No.
21 003 01**

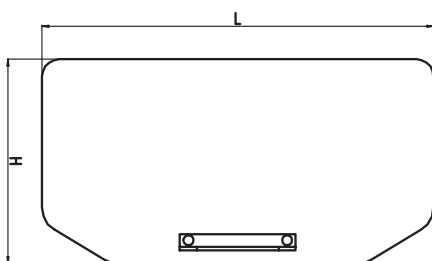
A	6.90" (175 mm)
B	1.30" (33 mm)
C	1.97" (50 mm)
D	7.00" (178 mm)
E	2.52" (64 mm)
F	1.38" (35 mm)
G	3.30" (84 mm)
H	4.20" (107 mm)
I	3.15" (80 mm)
J	5.83" (148 mm)
L	7.87" (200 mm)
M	M 10
N	1.18" (30 mm)
O	0.40" (10 mm)
P	0.65" (16.5 mm)
V	0.40" (10 mm)

**Size 2
Part No.
21 004 01**

A	7.87" (200 mm)
B	1.30" (33 mm)
C	1.97" (50 mm)
D	7.32" (186 mm)
E	2.68" (68 mm)
F	1.38" (35 mm)
G	3.58" (91 mm)
H	4.72" (120 mm)
I	3.15" (80 mm)
J	5.83" (148 mm)
L	9.06" (230 mm)
M	M 10
N	1.18" (30 mm)
O	0.40" (10 mm)
P	0.65" (16.5 mm)
V	0.40" (10 mm)

**Size 1
Part No.
21 005 01**

A	8.27" (210 mm)
B	1.30" (33 mm)
C	2.17" (55 mm)
D	8.86" (225 mm)
E	3.35" (85 mm)
F	1.38" (35 mm)
G	3.78" (96 mm)
H	5.00" (127 mm)
I	3.15" (80 mm)
J	5.83" (148 mm)
L	9.84" (250 mm)
M	M 10
N	1.18" (30 mm)
O	0.40" (10 mm)
P	0.65" (16.5 mm)
V	0.40" (10 mm)

External Wall
**Size
1 - 3**
**Standard
DIN 43620**

**Size 1
Part No.
25 003 01**

H	4.20" (107 mm)
L	7.87" (200 mm)

**Size 2
Part No.
25 004 01**

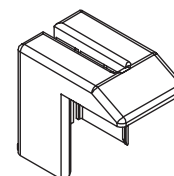
H	4.72" (120 mm)
L	9.06" (230 mm)

**Size 1
Part No.
25 005 01**

H	5.00" (127 mm)
L	9.84" (250 mm)

**Contact Insulating Covers
for NH Fuse Base**
**Size
1 - 3**

Size	Part No.	for Fuse base	Weight (kg/1)	Pack
1	21 003 01.26	21 003 01	0.020	10
2	21 004 01.26	21 004 01	0.025	10
3	21 005 01.26	21 005 01	0.030	10



Fuse Bases
3 pole

 Size
1 + 2

 Rated voltage
AC 500/660/690 V

 Standard
DIN 43620

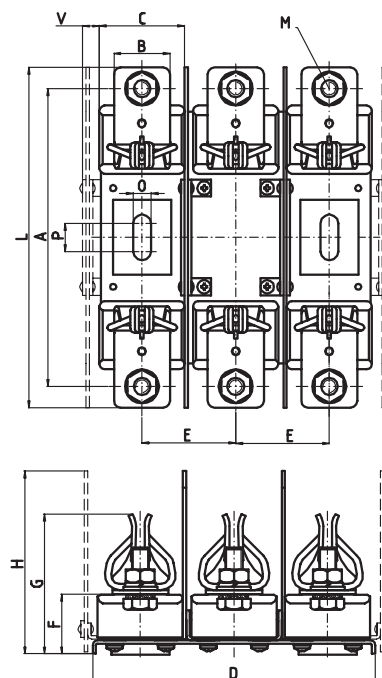
Rated current	Part No.	Weight (kg/1)	Pack	
250 A	21 003 03	2.36	1	
400 A	21 004 03		1	

Size 1
Part No.
21 003 03

A	6.90" (175 mm)
B	1.30" (33 mm)
C	1.97" (50 mm)
D	6.54" (166 mm)
E	2.52" (64 mm)
F	1.38" (35 mm)
G	3.30" (84 mm)
H	4.20" (107 mm)
L	7.87" (200 mm)
M	M 10
O	0.40" (10 mm)
P	0.65" (16.5 mm)
V	0.40" (10 mm)

Size 2
Part No.
21 004 03

A	7.87" (200 mm)
B	1.30" (33 mm)
C	1.97" (50 mm)
D	7.00" (178 mm)
E	2.68" (68 mm)
F	1.38" (35 mm)
G	3.58" (91 mm)
H	4.72" (120 mm)
L	9.06" (230 mm)
M	M 10
O	0.40" (10 mm)
P	0.65" (16.5 mm)
V	0.40" (10 mm)


External Wall

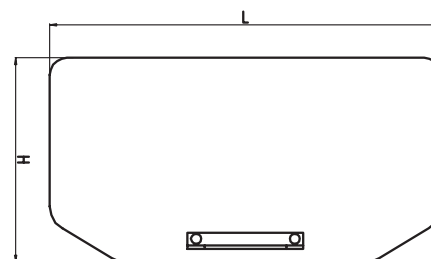
 Size
1 + 2

 Standard
DIN 43620
Size 1
Part No.
25 003 01

H	4.20" (107 mm)
L	7.87" (200 mm)

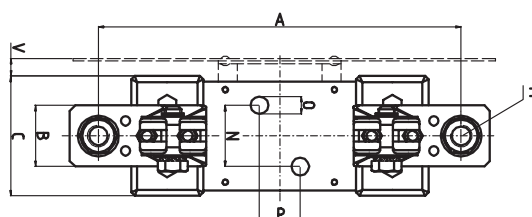
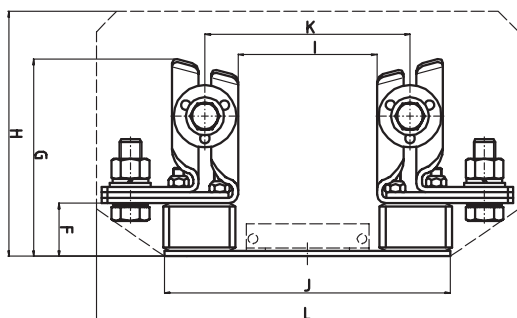
Size 2
Part No.
25 004 01

H	4.72" (120 mm)
L	9.06" (230 mm)



**Fuse Bases
with binding screw contacts**
**Size
4**
**Rated voltage
AC 500/660/690 V**
**Standard
DIN 43620**

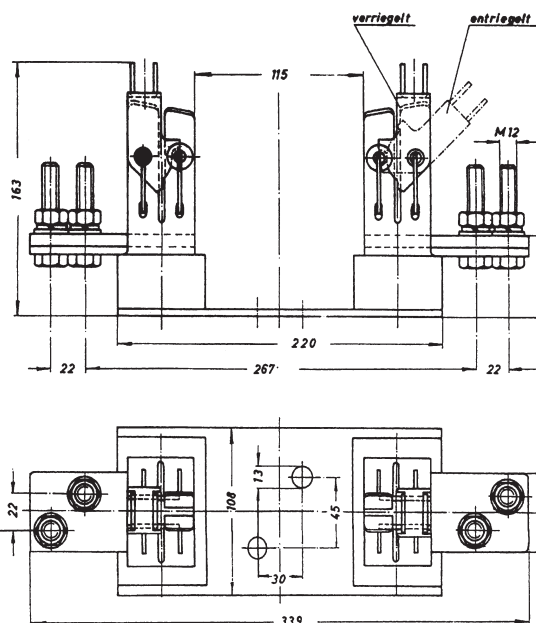
Rated current	Part No.	Weight (kg/1)	Pack
1250 A	21 006 01	3.65	1
1600 A	21 006 05	3.65	1

Fuse base, complete with assembled isolated plates Part No. 21 006 04


A	10.24" (260 mm)
B	1.77" (45 mm)
C	3.46" (88 mm)
F	1.54" (39 mm)
G	5.70" (145 mm)
H	7.10" (180 mm)
I	4.02" (102 mm)
J	8.27" (210 mm)
K	5.90" (150 mm)
L	12.20" (310 mm)
M	M 16
N	1.77" (45 mm)
O	0.50" (13 mm)
P	1.18" (30 mm)
V	0.50" (13 mm)

**Fuse Bases
with binding screw contacts**
**Size
4a**
**Rated voltage
AC 500/660/690 V**
**Standard
DIN 43620**

Rated current	Part No.	Weight (kg/1)	Pack
1600 A	21 120 02	4.2	1



**Fuse Bases
for NH Fuse Links**

 Size
000 + 00

 Rated Voltage
1000 V

 Standard
DIN 43620

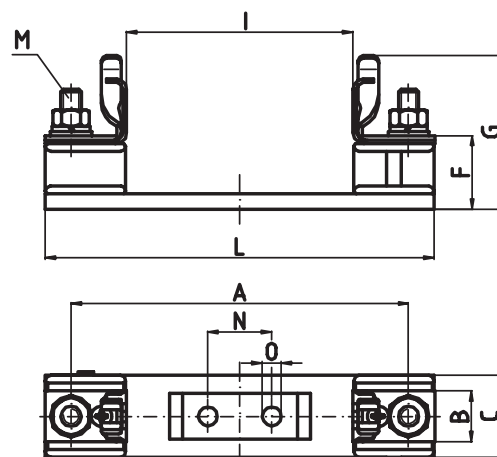
Rated current	Size	Part No. (kg/1)	Weight	Pack
100 A	000	21 386 01	0.28	1
160 A	00	21 389 01	0.29	1

**Part No.
21 386 01**

A	5.20" (132 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
I	3.50" (89 mm)
L	5.98" (152 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)

**Part No.
21 389 01**

A	5.47" (139 mm)
B	0.80" (20 mm)
C	1.26" (32 mm)
F	1.14" (29 mm)
G	2.32" (59 mm)
I	3.78" (96 mm)
L	6.26" (159 mm)
M	M 8
N	0.98" (25 mm)
O	0.30" (7.5 mm)


**Fuse Bases
for NH Fuse Links**

 Size
3

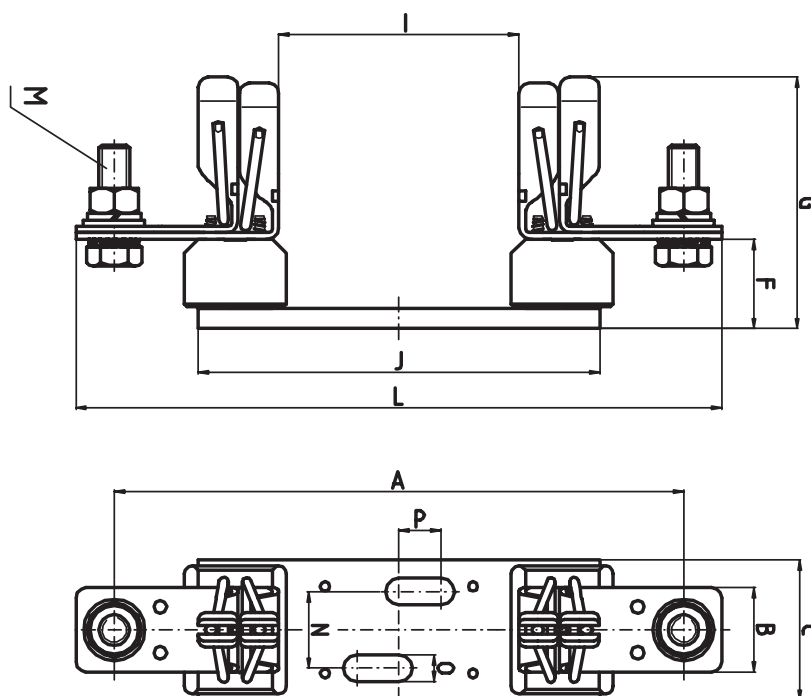
 Rated Voltage
1200 / 1500 V

 Standard
DIN 43620

Rated current	Part No.	Weight (kg/1)	Pack
630 A	21 031 01	1.3	1

**Part No.
21 031 01**

A	10.50" (267 mm)
B	1.30" (33 mm)
C	2.17" (55 mm)
F	1.46" (37 mm)
G	3.86" (98 mm)
I	5.40" (137 mm)
J	8.07" (205 mm)
L	11.65" (296 mm)
M	M 12
N	1.18" (30 mm)
O	0.40" (10.5 mm)
P	0.65" (16.5 mm)



Grip Handle

Size
00 - 3

Rated Voltage
500 - 690 V

Grip Handle	Part No.	Weight (kg/1)	Pack
Standard	22 001 02	0.24	1
Protected by Leather Glove	22 001 05	0.63	1

Grip Handle

Size
4 + 4a

Rated Voltage
500 - 690 V

Distance Removal Tags	Part No.	Weight (kg/1)	Pack
3.43" (87 mm)	22 120 01	0.54	1

Grip Handle

Size
3

Rated Voltage
1500 V

Distance Removal Tags	Part No.	Weight (kg/1)	Pack
4.72" (120 mm)	22 031 01	0.33	5



MINIATURE FUSES



SIBA Miniature Fuses

Sizes:

- Cylindrical fuses: 5 x 20 · 6.3 x 32 · 5 x 25
5 x 30 · 8 x 50 · 8 x 85
10 x 85 · 8 x 120 · 8 x 150 mm

- Radial lead

2 pin fuses: KS, Ø 8.4 mm

- SMD fuses:

Voltage ratings: 65 V - 10 kV

Operation class: **F** fast acting
T time lag
M medium time lag
FF very fast acting

Standards: IEC 60127
DIN VDE 0820
CEE4
UL 248-14
UL 512
CSA-C22.2 No. 248.14

Approvals:



SEV, BEAB

Features / Benefits

- ▶ Very high interrupting rating up to 70 kA
- ▶ High rated voltages up to 10 kV
- ▶ High fuse ratings available for semiconductor protection
- ▶ Fuse bases, clips and accessories are available



MINIATURE FUSES

Selection Guide

Fuse Links

Size	Rated Voltage AC	Operating class	Part No.	Selector Guide Page	
SMD	65/125 V	fast acting	157 000	G 4	
SMD	125 V	time lag	158 000	G 6	
SMD	250 V	time lag	160 000	G 7	
KS	250 V	fast acting	164 000	G 8	
KS	250 V	medium time lag	165 000	G 9	
KS	250 V	time lag	166 000	G 10	
KS	250 V	fast acting	164 500	G 11	
KS	250 V	time lag	166 500	G 12	
5 x 20	250 V	fast acting	179 020	G 13	
5 x 20	250 V	fast acting	179 021	G 14	
5 x 20	250 V	fast acting	171 100	G 15	
5 x 20	250 V	medium time lag	172 000	G 16	
5 x 20	250 V	medium time lag	172 100	G 16	
5 x 20	250 V	medium time lag	172 200	G 17	
5 x 20	250 V	time lag	179 120	G 18	
5 x 20	250 V	time lag	173 100	G 19	
5 x 20	250 V	time lag	179 200	G 20	
5 x 20	250 V	time lag	179 150	G 21	
5 x 20	250 V	time lag	179 500	G 22	
5 x 20	250 V	very fast acting	70 001 40	G 23	
6.3 x 32	250 V	fast acting	189 000	G 24	
6.3 x 32	440/500 V	fast acting	189 020	G 25	
6.3 x 32	250 V	time lag	189 100	G 27	
6.3 x 32	250/440/500 V	time lag	189 140	G 28	
6.3 x 32	125/250 V	time lag	189 500	G 30	
6.3 x 32	500/700 V	very fast acting	70 125 40	G 31	
5 x 25	250 V	fast acting	171 526	G 33	
5 x 25	250 V	medium time lag	172 526	G 34	
5 x 25	250 V	medium time lag	70 016 07/70 017 07	G 35	
5 x 20	250 V	medium time lag	70 014 07/70 012 05	G 36	
5 x 25	450 V	fast acting	70 089 13	G 37	
5 x 25	250 V	fast acting	171 525	G 38	
5 x 25	250 V	medium time lag	172 525	G 39	
5 x 30	500 V	fast acting	171 530	G 40	
5 x 30	500 V	medium time lag	172 530	G 41	
8 x 50	1.2 kV		184 000	G 42	
8 x 85	3 kV		185 000	G 43	
10 x 85	3 kV		70 115 09	G 44	
8 x 120	6 kV		186 000	G 45	
8 x 150	10 kv		187 000	G 46	



MINIATURE FUSES

Selection Guide

Fuse holder

Size	Rated Voltage AC	Rated current	Part No.	Selector Guide Page	
KS	250 V	6.3 A	166 602	G 47	
5 x 20	250 V	6.3 A	199 010	G 49	
5 x 20	250 V	6.3 A	199 020	G 49	
5 x 20	250 V	6.3 A	199 018	G 49	
5 x 20	250 V	6.3 A	199 060	G 50	
5 x 20	250 V	6.3 A	199 015	G 50	
6.3 x 32	250 V	10 A	199 022	G 51	
6.3 x 32	250 V	25 A	199 037	G 51	
5 x 20	250 V	6.3 A	191 100	G 52	
5 x 20	250 V	6.3 A	197 100	G 52	
5 x 20	250 V	6.3 A	199 040	G 52	
5 x 20	250 V	6.3 A	199 030	G 52	
5 x 20	250 V	6.3 A	199 035	G 52	
5 x 20	250 V	6.3 A	199 045	G 53	
5 x 20	250 V	6.3 A	199 050	G 53	
5 x 20	250 V	6.3 A	199 055	G 53	
5 x 20	250 V	6.3 A	199 070	G 53	
5 x 20	250 V	6.3 A	199 090	G 53	
5 x 20	42 V	6.3 A	199 081	G 54	
6.3 x 32	250 V	15 A	199 043	G 54	
6.3 x 32	250 V	20 A	199 052	G 54	

Selection Guide

Fuse clips

Size	Rated Voltage AC	Rated current	Part No.	Selector Guide Page	
Ø 5	500 V	6.3 A	199 073	G 47	
Ø 5	500 V	6.3 A	199 207	G 47	
Ø 5	500 V	6.3 A	199 429	G 47	
Ø 6.3	500 V	6.3 A	199 487	G 47	
Ø 6.3	500 V	6.3 A	199 488	G 47	

Selection Guide

Push-on caps

Size	Rated current	Part No.	Selector Guide Page	
Ø 5	6.3 A	204 000	G 48	
Ø 6.3	6.3 A	204 100	G 48	
Example of fuselink including Push-on caps		(XXX XXX) AK	G 48	

SMD FUSES
F

SMD

 Rated voltage
125 V
fast acting

 Standard
UL 248-14 · CSA C22.2 No. 248.14

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Cold resistance mΩ	cURus	Weight (kg/100)	Pack
62 mA	157 000	600	0.00019	50 A	5,500	✓	0.015	100
80 mA	157 000	550	0.00033	50 A	4,050	✓	0.015	100
100 mA	157 000	350	0.0014	50 A	2,000	✓	0.015	100
125 mA	157 000	240	0.0028	50 A	1,500	✓	0.015	100
160 mA	157 000	350	0.0031	50 A	1,400	✓	0.015	100
200 mA	157 000	250	0.0066	50 A	800	✓	0.015	100
250 mA	157 000	230	0.011	50 A	600	✓	0.015	100
315 mA	157 000	210	0.023	50 A	420	✓	0.015	100
375 mA	157 000	180	0.043	50 A	300	✓	0.015	100
400 mA	157 000	180	0.048	50 A	290	✓	0.015	100
500 mA	157 000	180	0.073	50 A	230	✓	0.015	100
630 mA	157 000	180	0.12	50 A	190	✓	0.015	100
750 mA	157 000	170	0.18	50 A	160	✓	0.015	100
800 mA	157 000	160	0.26	50 A	130	✓	0.015	100
1 A	157 000	150	0.45	50 A	100	✓	0.015	100
1.25 A	157 000	150	0.68	50 A	78	✓	0.015	100
1.5 A	157 000	150	0.85	50 A	63	✓	0.015	100
1.6 A	157 000	140	1.05	50 A	58	✓	0.015	100
2 A	157 000	100	0.57	50 A	37	✓	0.015	100
2.5 A	157 000	100	1.1	50 A	28	✓	0.015	100
3 A	157 000	100	1.5	50 A	23	✓	0.015	100
3.15 A	157 000	100	1.9	50 A	21	✓	0.015	100
3.5 A	157 000	100	2.5	50 A	19	✓	0.015	100
4 A	157 000	100	3.3	50 A	16	✓	0.015	100
5 A	157 000	90	6.2	50 A	12.5	✓	0.015	100
6.3 A	157 000	90	9.1	50 A	10	✓	0.015	100
7 A	157 000	90	11	50 A	8.6	✓	0.015	100

1000 pcs. on tape Part No. 157 000 GT

SMD

 Rated voltage
65 V
fast acting

 Standard
UL 248-14 · CSA C22.2 No. 248.14

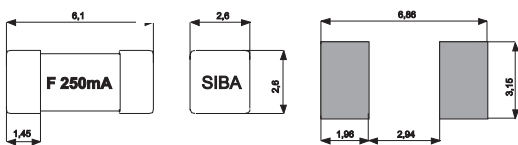
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Cold resistance mΩ	cURus	Weight (kg/100)	Pack
10 A	157 000	90	27	50 A	5.9	✓	0.015	100
12 A	157 000	90	45	50 A	4.9	✓	0.015	100
15 A	157 000	90	81	50 A	3.8	✓	0.015	100

1000 pcs. on tape Part No. 157 000 GT



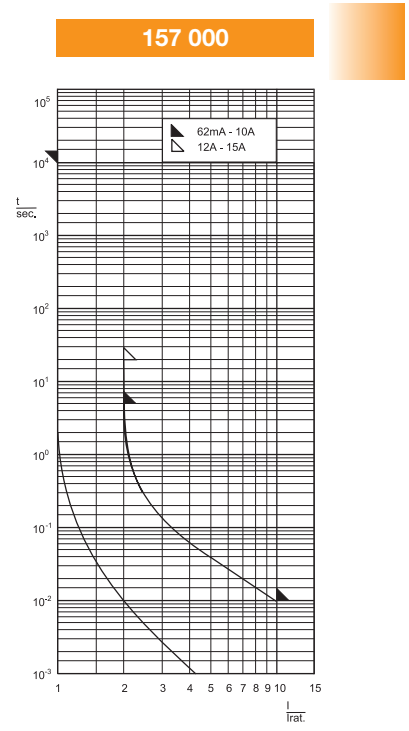
SMD FUSES

F



Pre-arcing time limits

Rated current	$1.0 I_n$	$2.0 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
62 mA ▼ 10 A	> 4 h	< 5 s	-	-	< 10 ms
12 A ▼ 15 A		< 20 s	-	-	< 10 ms



SMD FUSES
T

SMD

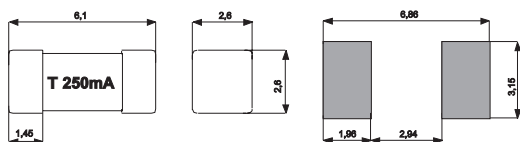
 Rated voltage
125 V

time lag

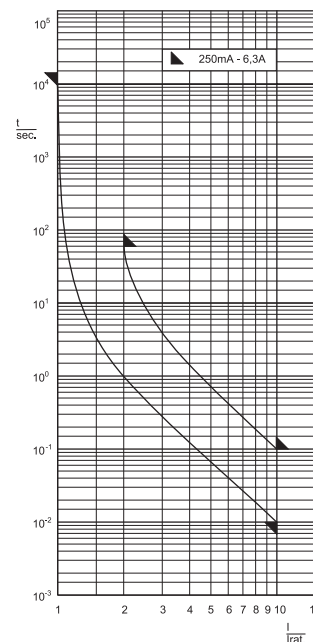
 Standard
UL 248-14 · CSA C22.2 No. 248.14

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Cold resistance mΩ	cURus	Weight (kg/100)	Pack
250 mA	158 000	280	0.08	50 A	900	✓	0.015	100
315 mA	158 000	260	0.16	50 A	700	✓	0.015	100
375 mA	158 000	230	0.30	50 A	500	✓	0.015	100
400 mA	158 000	220	0.32	50 A	450	✓	0.015	100
500 mA	158 000	200	0.7	50 A	300	✓	0.015	100
630 mA	158 000	200	0.8	50 A	200	✓	0.015	100
750 mA	158 000	190	1.2	50 A	170	✓	0.015	100
800 mA	158 000	170	1.4	50 A	140	✓	0.015	100
1 A	158 000	150	2.5	50 A	120	✓	0.015	100
1.25 A	158 000	150	4.0	50 A	90	✓	0.015	100
1.5 A	158 000	130	4.5	50 A	60	✓	0.015	100
1.6 A	158 000	130	5	50 A	55	✓	0.015	100
2 A	158 000	120	8	50 A	45	✓	0.015	100
2.5 A	158 000	120	15	50 A	30	✓	0.015	100
3 A	158 000	110	22	50 A	23	✓	0.015	100
3.15 A	158 000	100	23	50 A	20	✓	0.015	100
3.5 A	158 000	100	30	50 A	18	✓	0.015	100
4 A	158 000	100	40	50 A	15	✓	0.015	100
5 A	158 000	90	60	50 A	11	✓	0.015	100
6.3 A	158 000	80	130	50 A	8	✓	0.015	100

1000 pcs. on tape Part No. 158 000 GT


Pre-arcing time limits

Rated current	1.0 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
250 mA ▼ 6.3 A	> 4 h	< 60 s	-	-	10 ms ▼ 100 ms





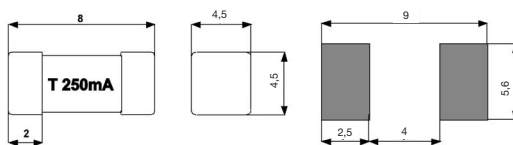
SMD FUSES

T

SMD	Rated voltage 250 V	time lag	Standard DIN VDE 0820-3/4 · IEC 60127-3/4
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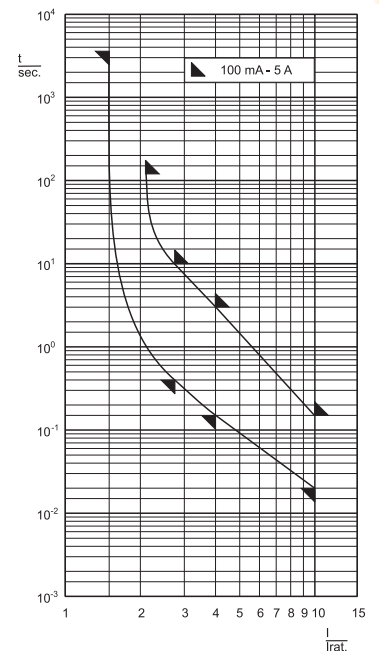
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A²s	Rated breaking capacity	cURus	Weight (kg/100)	Pack
100 mA	160 000	350	0.06	100 A	✓	0.2	100
125 mA	160 000	300	0.12	100 A	✓	0.2	100
160 mA	160 000	280	0.21	100 A	✓	0.2	100
200 mA	160 000	260	0.32	100 A	✓	0.2	100
250 mA	160 000	240	0.5	100 A	✓	0.2	100
315 mA	160 000	220	0.8	100 A	✓	0.2	100
400 mA	160 000	200	1.1	100 A	✓	0.2	100
500 mA	160 000	190	1.8	100 A	✓	0.2	100
630 mA	160 000	180	3.2	100 A	✓	0.2	100
800 mA	160 000	160	5.2	100 A	✓	0.2	100
1 A	160 000	140	6.8	100 A	✓	0.2	100
1.25 A	160 000	130	12	100 A	✓	0.2	100
1.6 A	160 000	120	22	100 A	✓	0.2	100
2 A	160 000	100	30	100 A	✓	0.2	100
2.5 A	160 000	100	46	100 A	✓	0.2	100
3.15 A	160 000	100	80	100 A	✓	0.2	100
4 A	160 000	100	130	100 A	✓	0.2	100
5 A	160 000	100	130	100 A	✓	0.2	100

1000 pcs. on tape Part No. 160 000 GT



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
100 mA	> 1 h	< 2 min.	400 ms	150 ms	20 ms
5 A			10 s	3 s	150 ms



SUB MINIATURE FUSES
F

KS

Rated voltage

250 V
fast acting

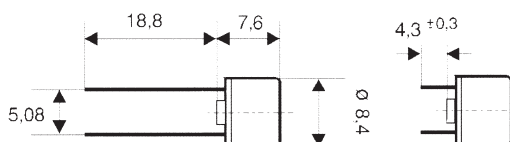
Standard

DIN VDE 0820-3/3 · IEC 60127-3/3

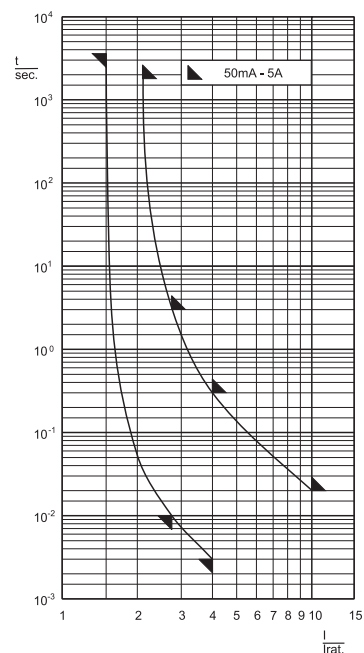
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation mW	SEMKO	Weight (kg/100)	Pack
50 mA	164 000	820	0.0003	35 A	95	✓	0.1	100
63 mA	164 000	750	0.0007	35 A	110	✓	0.1	100
80 mA	164 000	630	0.0015	35 A	120	✓	0.1	100
100 mA	164 000	500	0.0035	35 A	155	✓	0.1	100
125 mA	164 000	500	0.006	35 A	175	✓	0.1	100
160 mA	164 000	460	0.011	35 A	210	✓	0.1	100
200 mA	164 000	150	0.018	35 A	80	✓	0.1	100
250 mA	164 000	140	0.035	35 A	90	✓	0.1	100
315 mA	164 000	130	0.05	35 A	120	✓	0.1	100
400 mA	164 000	120	0.10	35 A	140	✓	0.1	100
500 mA	164 000	110	0.18	35 A	160	✓	0.1	100
630 mA	164 000	100	0.33	35 A	180	✓	0.1	100
800 mA	164 000	90	0.14	35 A	200	✓	0.1	100
1 A	164 000	80	0.24	35 A	220	✓	0.1	100
1.25 A	164 000	75	0.35	35 A	260	✓	0.1	100
1.6 A	164 000	70	0.6	35 A	280	✓	0.1	100
2 A	164 000	60	1.2	35 A	340	✓	0.1	100
2.5 A	164 000	60	2.0	35 A	420	✓	0.1	100
3.15 A	164 000	60	3.5	35 A	580	✓	0.1	100
4 A	164 000	60	6.2	40 A	700	✓	0.1	100
5 A	164 000	60	13	50 A	900	✓	0.1	100

short pins (4.3 mm) Part No. 164 050

1000 pcs. on tape Part No. 164 000 GT


Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
50 mA	> 1 h	< 30 min.	10 ms	3 ms	< 20 ms
5 A			3 s	300 ms	





SUB MINIATURE FUSES

M

KS

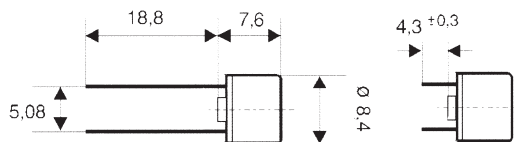
Rated voltage
250 V

medium time lag

Standard
IEC 60127-3

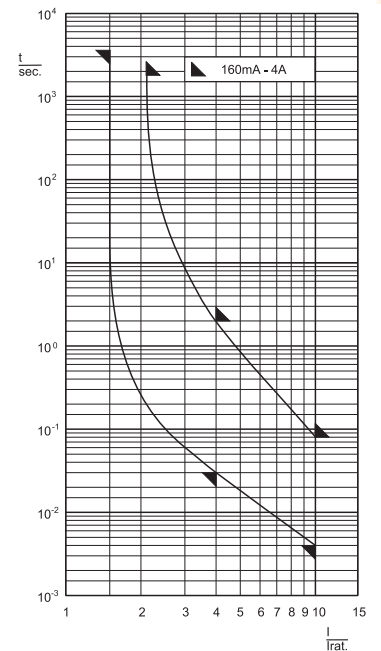
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation mW	Weight (kg/100)	Pack
160 mA	165 000	325	0.075	35 A	140	0.1	100
200 mA	165 000	120	0.020	35 A	80	0.1	100
250 mA	165 000	120	0.036	35 A	90	0.1	100
315 mA	165 000	120	0.055	35 A	120	0.1	100
400 mA	165 000	110	0.11	35 A	140	0.1	100
500 mA	165 000	100	0.20	35 A	160	0.1	100
630 mA	165 000	90	0.33	35 A	180	0.1	100
800 mA	165 000	80	0.58	35 A	140	0.1	100
1 A	165 000	70	0.9	35 A	160	0.1	100
1.25 A	165 000	65	1.4	35 A	190	0.1	100
1.6 A	165 000	65	2.5	35 A	200	0.1	100
2 A	165 000	60	3.1	35 A	350	0.1	100
2.5 A	165 000	55	5.2	35 A	380	0.1	100
3.15 A	165 000	55	9.9	35 A	510	0.1	100
4 A	165 000	50	16	40 A	550	0.1	100

short pins (4.3 mm) Part No. 165 050
1000 pcs. on tape Part No. 165 000 GT



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
160 mA ▼ 4 A	> 1 h	< 30 min.	-	30 ms ▼ 2 s	4 ms ▼ 80 ms



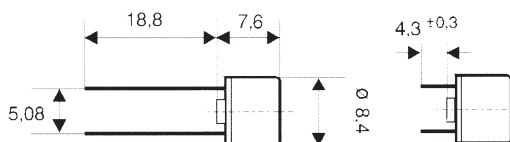
SUB MINIATURE FUSES
F

KS

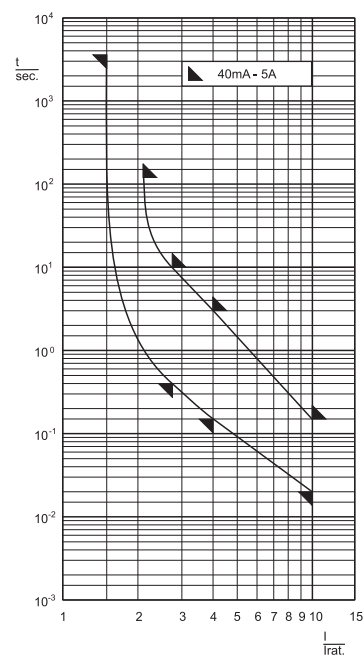
 Rated voltage
250 V
fast acting

 Standard
DIN VDE 0820-3/3 · IEC 60127-3/3

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation mW	SEMKO VDE cURus	Weight (kg/100)	Pack
40 mA	166 000	530	0.015	35 A	60	✓✓✓	0.1	100
50 mA	166 000	490	0.017	35 A	70	✓✓✓	0.1	100
63 mA	166 000	390	0.02	35 A	80	✓✓✓	0.1	100
80 mA	166 000	300	0.035	35 A	90	✓✓✓	0.1	100
100 mA	166 000	260	0.06	35 A	100	✓✓✓	0.1	100
125 mA	166 000	180	0.12	35 A	110	✓✓✓	0.1	100
160 mA	166 000	170	0.21	35 A	130	✓✓✓	0.1	100
200 mA	166 000	160	0.32	35 A	140	✓✓✓	0.1	100
250 mA	166 000	150	0.5	35 A	150	✓✓✓	0.1	100
315 mA	166 000	140	0.8	35 A	160	✓✓✓	0.1	100
400 mA	166 000	130	1.1	35 A	170	✓✓✓	0.1	100
500 mA	166 000	120	1.8	35 A	180	✓✓✓	0.1	100
630 mA	166 000	110	3.2	35 A	200	✓✓✓	0.1	100
800 mA	166 000	100	5.2	35 A	220	✓✓✓	0.1	100
1 A	166 000	85	8	35 A	240	✓✓✓	0.1	100
1.25 A	166 000	75	12	35 A	290	✓✓✓	0.1	100
1.6 A	166 000	70	22	35 A	350	✓✓✓	0.1	100
2 A	166 000	70	30	35 A	480	✓✓✓	0.1	100
2.5 A	166 000	70	46	35 A	520	✓✓✓	0.1	100
3.15 A	166 000	70	80	35 A	600	✓✓✓	0.1	100
4 A	166 000	70	130	40 A	800	✓✓✓	0.1	100
5 A	166 000	70	130	50 A	1000	✓✓✓	0.1	100

 short pins (4.3 mm) Part No. 166 050
 1000 pcs. on tape Part No. 166 000 GT

Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
40 mA	> 1 h	< 2 min.	400 ms	150 ms	20 ms
5 A			10 s	3 s	150 ms





SUB MINIATURE FUSES

F

KS

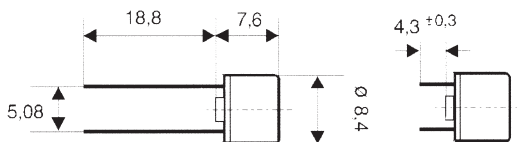
Rated voltage
250 V

fast acting

Standard
UL 248-14 · CSA C22.2 No. 248.14

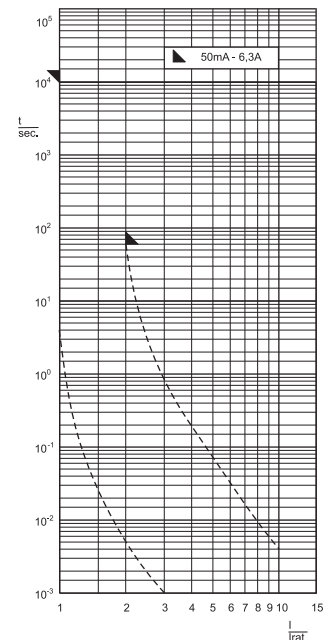
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation mW	$\frac{I}{I_n}$	$\frac{t}{t_{rat}}$	Weight (kg/100)	Pack
50 mA	164 500	1500	0.0002	50 A	75	✓	✓	0.1	100
63 mA	164 500	1350	0.0003	50 A	85	✓	✓	0.1	100
80 mA	164 500	1200	0.0007	50 A	95	✓	✓	0.1	100
100 mA	164 500	1100	0.0015	50 A	110	✓	✓	0.1	100
125 mA	164 500	1000	0.0030	50 A	125	✓	✓	0.1	100
160 mA	164 500	950	0.0075	50 A	155	✓	✓	0.1	100
200 mA	164 500	850	0.013	50 A	170	✓	✓	0.1	100
250 mA	164 500	240	0.020	50 A	60	✓	✓	0.1	100
315 mA	164 500	230	0.030	50 A	75	✓	✓	0.1	100
400 mA	164 500	220	0.055	50 A	90	✓	✓	0.1	100
500 mA	164 500	210	0.10	50 A	105	✓	✓	0.1	100
630 mA	164 500	200	0.19	50 A	130	✓	✓	0.1	100
800 mA	164 500	190	0.36	50 A	155	✓	✓	0.1	100
1 A	164 500	180	0.14	50 A	180	✓	✓	0.1	100
1.25 A	164 500	170	0.24	50 A	215	✓	✓	0.1	100
1.6 A	164 500	160	0.34	50 A	260	✓	✓	0.1	100
2 A	164 500	150	0.56	50 A	300	✓	✓	0.1	100
2.5 A	164 500	140	1.1	50 A	350	✓	✓	0.1	100
3.15 A	164 500	130	2.0	50 A	410	✓	✓	0.1	100
4 A	164 500	120	3.2	50 A	480	✓	✓	0.1	100
5 A	164 500	110	6.2	50 A	550	✓	✓	0.1	100
6.3 A	164 500	100	14	50 A	630	✓	✓	0.1	100

short pins (4.3 mm) Part No. 164 550
1000 pcs. on tape Part No. 164 500 GT



Pre-arcing time limits

Rated current	1.0 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
50 mA ▼ 6.3 A	> 4 h	< 60 s	-	-	-



SUB MINIATURE FUSES
T

KS

Rated voltage

250 V

time lag

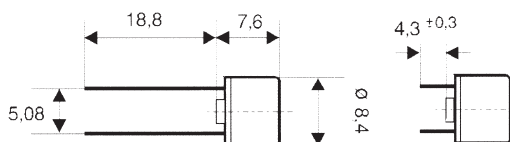
Standard

UL 248-14 · CSA C22.2 No. 248.14

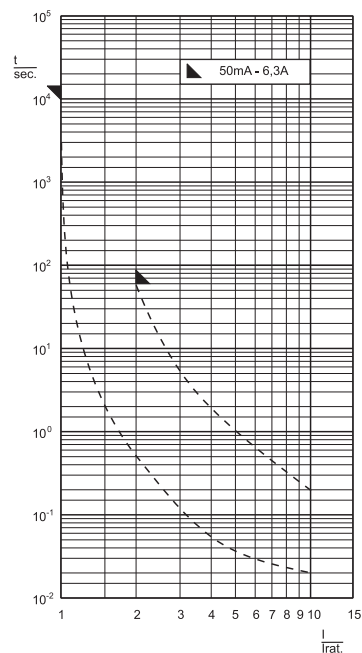
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation mW	$\frac{I}{I_{rat}}$	$\frac{t}{t_{rat}}$	Weight (kg/100)	Pack
50 mA	166 500	800	0.015	50 A	50	✓	✓	0.1	100
63 mA	166 500	700	0.017	50 A	50	✓	✓	0.1	100
80 mA	166 500	600	0.020	50 A	50	✓	✓	0.1	100
100 mA	166 500	550	0.025	50 A	55	✓	✓	0.1	100
125 mA	166 500	500	0.03	50 A	65	✓	✓	0.1	100
160 mA	166 500	450	0.07	50 A	75	✓	✓	0.1	100
200 mA	166 500	400	0.14	50 A	80	✓	✓	0.1	100
250 mA	166 500	370	0.25	50 A	95	✓	✓	0.1	100
315 mA	166 500	340	0.42	50 A	110	✓	✓	0.1	100
400 mA	166 500	310	0.53	50 A	130	✓	✓	0.1	100
500 mA	166 500	270	1.0	50 A	140	✓	✓	0.1	100
630 mA	166 500	230	1.5	50 A	150	✓	✓	0.1	100
800 mA	166 500	220	3.1	50 A	180	✓	✓	0.1	100
1 A	166 500	200	4.8	50 A	200	✓	✓	0.1	100
1.25 A	166 500	120	5.7	50 A	150	✓	✓	0.1	100
1.6 A	166 500	120	11	50 A	190	✓	✓	0.1	100
2 A	166 500	115	18	50 A	230	✓	✓	0.1	100
2.5 A	166 500	110	25	50 A	280	✓	✓	0.1	100
3.15 A	166 500	100	40	50 A	320	✓	✓	0.1	100
4 A	166 500	95	72	50 A	380	✓	✓	0.1	100
5 A	166 500	90	130	50 A	450	✓	✓	0.1	100
6.3 A	166 500	90	130	50 A	570	✓	✓	0.1	100

short pins (4.3 mm) Part No. 166 550

1000 pcs. on tape Part No. 166 500 GT


Pre-arcing time limits

Rated current	1.0 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
50 mA	> 4 h	< 60 s	-	-	-
6.3 A					





MINIATURE FUSES

GLASS TUBE

F

5 x 20

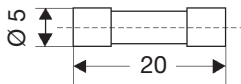
Rated voltage
125 V

fast acting

Standard
UL 248-14 · CSA C22.2 No. 248.14

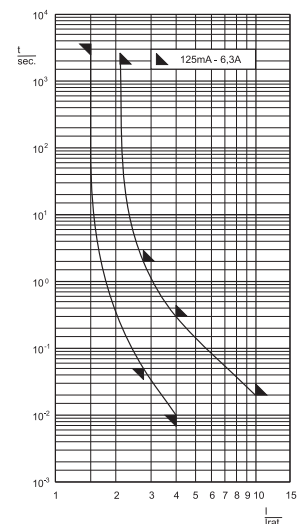
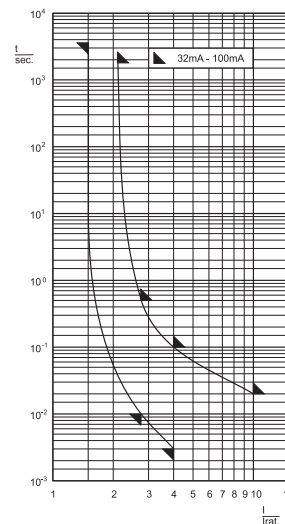
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t-value A ² s	Rated breaking capacity	Power dissipation W	SEMKO	VDE	SEV	BEAB	cURus	Weight (kg/100)	Pack
32 mA	179 020	10000	0.0001	35 A	0.8	✓	✓	✓	✓	✓	0.1	100
40 mA	179 020	8000	0.0002	35 A	0.8	✓	✓	✓	✓	✓	0.1	100
50 mA	179 020	3500	0.0004	35 A	0.4	✓	✓	✓	✓	✓	0.1	100
63 mA	179 020	3500	0.0007	35 A	0.5	✓	✓	✓	✓	✓	0.1	100
80 mA	179 020	2500	0.0017	35 A	0.5	✓	✓	✓	✓	✓	0.1	100
100 mA	179 020	2200	0.0022	35 A	0.6	✓	✓	✓	✓	✓	0.1	100
125 mA	179 020	2000	0.0036	35 A	0.6	✓	✓	✓	✓	✓	0.1	100
160 mA	179 020	1900	0.0085	35 A	0.7	✓	✓	✓	✓	✓	0.1	100
200 mA	179 020	1400	0.018	35 A	0.7	✓	✓	✓	✓	✓	0.1	100
250 mA	179 020	1300	0.047	35 A	0.8	✓	✓	✓	✓	✓	0.1	100
315 mA	179 020	1200	0.067	35 A	0.9	✓	✓	✓	✓	✓	0.1	100
400 mA	179 020	1100	0.14	35 A	1.0	✓	✓	✓	✓	✓	0.1	100
500 mA	179 020	160	0.16	35 A	0.3	✓	✓	✓	✓	✓	0.1	100
630 mA	179 020	140	0.39	35 A	0.3	✓	✓	✓	✓	✓	0.1	100
800 mA	179 020	130	0.8	35 A	0.4	✓	✓	✓	✓	✓	0.1	100
1 A	179 020	130	1.5	35 A	0.5	✓	✓	✓	✓	✓	0.1	100
1.25 A	179 020	120	2.0	35 A	0.6	✓	✓	✓	✓	✓	0.1	100
1.6 A	179 020	120	4.1	35 A	0.7	✓	✓	✓	✓	✓	0.1	100
2 A	179 020	120	6.2	35 A	0.9	✓	✓	✓	✓	✓	0.1	100
2.5 A	179 020	120	11	35 A	1.0	✓	✓	✓	✓	✓	0.1	100
3.15 A	179 020	120	20	35 A	1.2	✓	✓	✓	✓	✓	0.1	100
4 A	179 020	100	25	40 A	1.4	✓	✓	✓	✓	✓	0.1	100
5 A	179 020	100	42	50 A	1.7	✓	✓	✓	✓	✓	0.1	100
6.3 A	179 020	100	79	63 A	2.0	✓	✓	✓	✓	✓	0.1	100
(8) A	179 020	100	125	80 A	2.2						0.1	100
(10) A	179 020	100	220	100 A	2.4						0.1	100

(...) = not standardized



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
32 mA			10 ms	3 ms	
100 mA			500 ms	100 ms	
125 mA			50 ms	10 ms	
6.3 A			2 s	300 ms	
	> 1 h	< 30 min.			< 20 ms



MINIATURE FUSES
CERAMIC TUBE

F

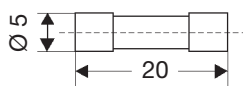

 Size
5 x 20 mm

 Rated voltage
250 V
fast acting

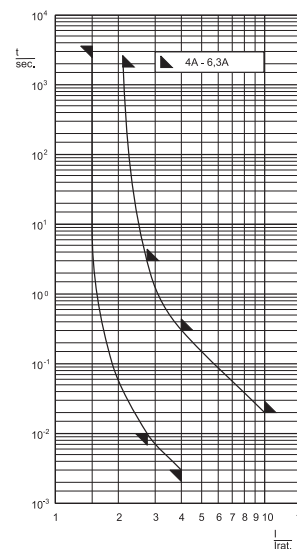
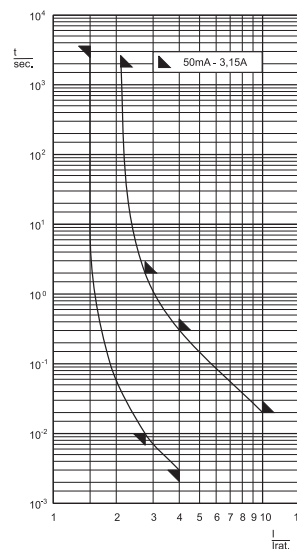
 Standard
DIN VDE 0820-2/1 · IEC 60127-2/1

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	SEMKO	Weight (kg/100)	Pack
50 mA	179 021	4000	0.00022	1500 A	0.5		0.13	100
63 mA	179 021	3900	0.00037	1500 A	0.6		0.13	100
80 mA	179 021	3200	0.00073	1500 A	0.7		0.13	100
100 mA	179 021	2600	0.0011	1500 A	0.8		0.13	100
125 mA	179 021	2500	0.0018	1500 A	0.9		0.13	100
160 mA	179 021	1900	0.0034	1500 A	0.9		0.13	100
200 mA	179 021	1700	0.007	1500 A	1.0		0.13	100
250 mA	179 021	1300	0.013	1500 A	1.0		0.13	100
315 mA	179 021	700	0.029	1500 A	0.8		0.13	100
400 mA	179 021	650	0.055	1500 A	0.9		0.13	100
500 mA	179 021	600	0.10	1500 A	1.0	✓	0.13	100
630 mA	179 021	550	0.19	1500 A	1.1	✓	0.13	100
800 mA	179 021	500	0.16	1500 A	1.3	✓	0.13	100
1 A	179 021	450	0.28	1500 A	1.4	✓	0.13	100
1.25 A	179 021	400	0.6	1500 A	1.6	✓	0.13	100
1.6 A	179 021	350	1.0	1500 A	1.8	✓	0.13	100
2 A	179 021	320	1.8	1500 A	2.0	✓	0.13	100
2.5 A	179 021	270	3.0	1500 A	2.1	✓	0.13	100
3.15 A	179 021	220	6.2	1500 A	2.2	✓	0.13	100
4 A	179 021	180	15	1500 A	2.3	✓	0.13	100
5 A	179 021	150	31	1500 A	2.4	✓	0.13	100
6.3 A	179 021	130	52	1500 A	2.6	✓	0.13	100
(8) A	179 021	100	110	1500 A	2.8		0.13	100
(10) A	179 021	100	200	1500 A	3.0		0.13	100
(12.5) A	179 021			1500 A			0.13	100
(16) A	179 021			1500 A			0.13	100

(...) = not standardized


Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
50 mA			10 ms		
3.15 A			2 s	3 ms	
4 A	> 1 h	< 30 min.	10 ms	300 ms	< 20 ms
6.3 A			3 s		



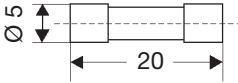


MINIATURE FUSES
GLASS TUBE WITH FILLING **F**

Size **5 x 20 mm** Rated voltage **250 V** fast acting Standard **DIN 41571 Part 1**

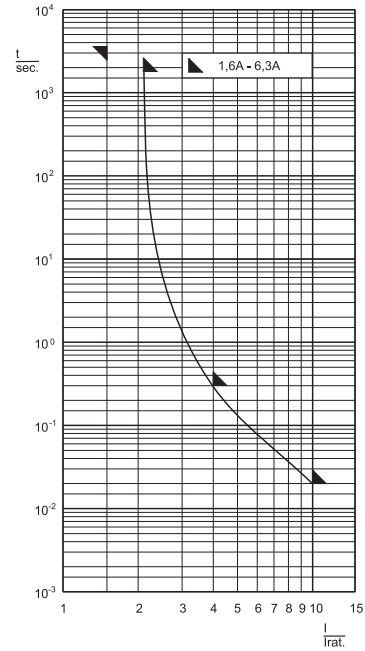
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
1.6 A	171 100	480	1.1	1000 A	1.3	0.13	100
2 A	171 100	400	2	1000 A	1.5	0.13	100
2.5 A	171 100	400	4	1000 A	1.6	0.13	100
3.15 A	171 100	240	9	1000 A	1.7	0.13	100
4 A	171 100	240	18	1000 A	1.9	0.13	100
5 A	171 100	230	32	1000 A	2.3	0.13	100
6.3 A	171 100	170	52	1000 A	2.8	0.13	100
(8) A	171 100	160	100	300 A	3.2	0.13	100
(10) A	171 100	150	200	300 A	3.4	0.13	100

(...) = not standardized



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
1.6 A ▼ 6.3 A	> 1 h	< 30 min.	-	< 300 ms	< 20 ms



MINIATURE FUSES

GLASS TUBE > 1.25 A WITH FILLING

M



Size
5 x 20 mm

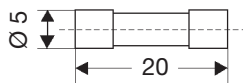
Rated voltage
250 V

medium time lag

Standard
DIN 41571 Part 2

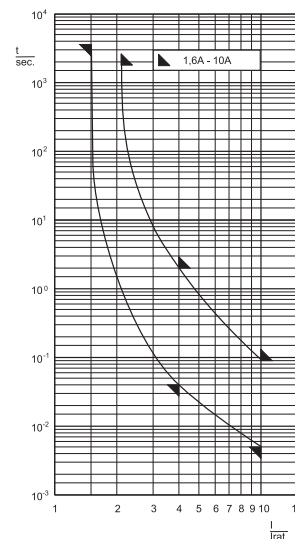
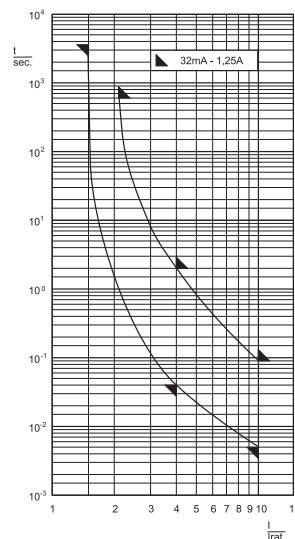
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
32 mA	172 000	640	0.0055	80 A	0.1	0.1	100
40 mA	172 000	630	0.008	80 A	0.1	0.1	100
50 mA	172 000	600	0.017	80 A	0.1	0.1	100
63 mA	172 000	560	0.025	80 A	0.1	0.1	100
80 mA	172 000	520	0.040	80 A	0.1	0.1	100
100 mA	172 000	470	0.055	80 A	0.1	0.1	100
125 mA	172 000	420	0.011	80 A	0.1	0.1	100
160 mA	172 000	370	0.036	80 A	0.1	0.1	100
200 mA	172 000	320	0.05	80 A	0.2	0.1	100
250 mA	172 000	280	0.1	80 A	0.2	0.1	100
315 mA	172 000	250	0.2	80 A	0.2	0.1	100
400 mA	172 000	230	0.4	80 A	0.2	0.1	100
500 mA	172 000	210	0.6	80 A	0.2	0.1	100
630 mA	172 000	190	0.9	80 A	0.2	0.1	100
800 mA	172 000	170	1.6	80 A	0.3	0.1	100
1 A	172 000	160	2.6	80 A	0.3	0.1	100
1.25 A	172 000	160	3.9	80 A	0.3	0.1	100
1.6 A	172 100	160	3.1	1000 A	0.8	0.12	100
2 A	172 100	160	5.2	1000 A	0.8	0.12	100
2.5 A	172 100	160	10	1000 A	0.9	0.12	100
3.15 A	172 100	160	20	1000 A	1.0	0.12	100
4 A	172 100	160	37	1000 A	1.1	0.12	100
5 A	172 100	150	72	1000 A	1.3	0.12	100
6.3 A	172 100	140	130	1000 A	1.6	0.12	100
8 A ¹	172 100	140	230	300 A	2.0	0.12	100
10 A ¹	172 100	120	370	300 A	2.5	0.12	100

¹ Consideration should be given to heat dissipation.



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
32 mA					
1.25 A	> 1 h	< 10 min.	-	40 ms	5 ms
1.6 A		< 30 min.	-	2 s	90 ms
10 A					





MINIATURE FUSES

CERAMIC TUBE

M

Size
5 x 20 mm

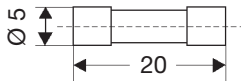
Rated voltage
250 V

medium time lag

Standard
not standardized

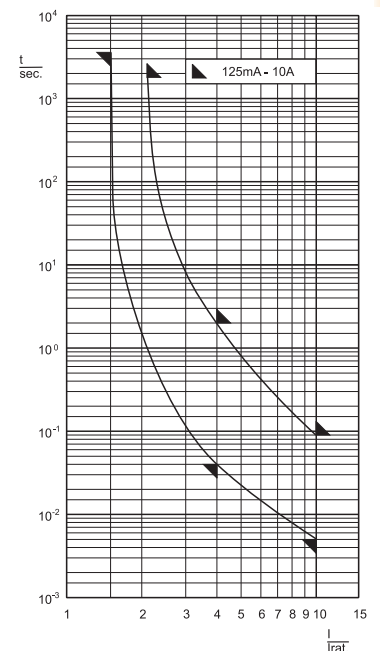
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
125 mA	172 200	2500	0.011	1500 A	0.1	0.14	100
160 mA	172 200	2000	0.036	1500 A	0.1	0.14	100
200 mA	172 200	1800	0.05	1500 A	0.2	0.14	100
250 mA	172 200	1600	0.1	1500 A	0.2	0.14	100
315 mA	172 200	1400	0.2	1500 A	0.2	0.14	100
400 mA	172 200	1200	0.4	1500 A	0.2	0.14	100
500 mA	172 200	800	0.6	1500 A	0.2	0.14	100
630 mA	172 200	650	0.6	1500 A	0.4	0.14	100
800 mA	172 200	500	1.0	1500 A	0.6	0.14	100
1 A	172 200	450	1.5	1500 A	0.8	0.14	100
1.25 A	172 200	400	3.1	1500 A	0.8	0.14	100
1.6 A	172 200	160	3.1	1500 A	0.8	0.14	100
2 A	172 200	160	5.2	1500 A	0.8	0.14	100
2.5 A	172 200	160	10	1500 A	0.9	0.14	100
3.15 A	172 200	160	20	1500 A	1.0	0.14	100
4 A	172 200	160	37	1500 A	1.1	0.14	100
5 A	172 200	150	72	1500 A	1.3	0.14	100
6.3 A	172 200	140	130	1500 A	1.6	0.14	100
8 A ¹	172 200	140	230	1500 A	2.0	0.14	100
10 A ¹	172 200	120	370	1500 A	2.5	0.14	100

¹ Consideration should be given to heat dissipation.



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
125 mA ▼ 10 A	> 1 h	< 30 min.	-	40 ms ▼ 2 s	5 ms ▼ 90 ms



MINIATURE FUSES
GLASS TUBE

T


 Size
5 x 20 mm

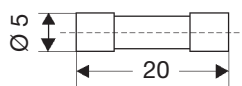
 Rated voltage
250 V

time lag

 Standard
DIN VDE 0820-2/3 · IEC 60127-2/3

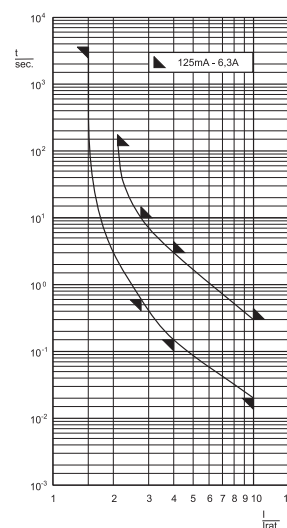
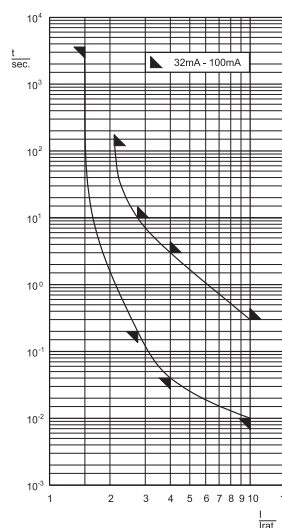
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	SEMKO	VDE	SEV	BEAB	cURus	BSI	Weight (kg/100)	Pack
32 mA	179 120	3000	0.010	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
40 mA	179 120	2000	0.020	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
50 mA	179 120	1500	0.035	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
63 mA	179 120	1000	0.05	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
80 mA	179 120	800	0.12	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
100 mA	179 120	700	0.16	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
125 mA	179 120	600	0.24	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
160 mA	179 120	600	0.4	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
200 mA	179 120	500	0.7	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
250 mA	179 120	400	1.4	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
315 mA	179 120	350	2.1	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
400 mA	179 120	120	0.6	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
500 mA	179 120	110	0.9	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
630 mA	179 120	110	1.6	35 A	0.2	✓	✓	✓	✓	✓	✓	0.1	100
800 mA	179 120	100	3.5	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
1 A	179 120	80	3.9	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
1.25 A	179 120	80	5.0	35 A	0.3	✓	✓	✓	✓	✓	✓	0.1	100
1.6 A	179 120	80	10	35 A	0.4	✓	✓	✓	✓	✓	✓	0.1	100
2 A	179 120	80	20	35 A	0.5	✓	✓	✓	✓	✓	✓	0.1	100
2.5 A	179 120	80	26	35 A	0.6	✓	✓	✓	✓	✓	✓	0.1	100
3.15 A	179 120	80	44	35 A	0.6	✓	✓	✓	✓	✓	✓	0.1	100
4 A	179 120	80	72	40 A	0.8	✓	✓	✓	✓	✓	✓	0.1	100
5 A	179 120	80	130	50 A	1.2	✓	✓	✓	✓	✓	✓	0.1	100
6.3 A	179 120	70	230	63 A	1.3	✓	✓	✓	✓	✓	✓	0.1	100
(8) A	179 120	70	240	80 A	1.8							0.1	100
(10) A	179 120	70	380	100 A	2.4							0.1	100
(12.5) A	179 120	70	650	125 A	3.0							0.1	100

(...) = not standardized



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
32 mA			200 ms	40 ms	10 ms
100 mA			10 s	3 s	300 ms
125 mA			600 ms	150 ms	20 ms
6.3 A			10 s	3 s	300 ms
	> 1 h	< 2 min.			





MINIATURE FUSES

GLASS TUBE WITH FILLING

T

Size
5 x 20 mm

Rated voltage
250 V

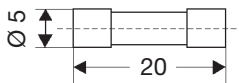
time lag

Standard
DIN 47571 Part 3

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
1.6 A	173 100	200 ²	16	300 A	0.8	0.13	100
2 A	173 100	190 ²	26	300 A	0.9	0.13	100
2.5 A	173 100	180 ²	45	300 A	1.1	0.13	100
3.15 A	173 100	140	72	300 A	1.3	0.13	100
4 A	173 100	135	130	300 A	1.4	0.13	100
5 A	173 100	130	150	300 A	1.2	0.13	100
6.3 A	173 100	125	240	300 A	1.3	0.13	100
8 A ¹	173 100	120	390	300 A	1.6	0.13	100
10 A ¹	173 100	115	620	300 A	1.9	0.13	100
12.5 A ¹	173 100	100	1150	300 A	2.8	0.13	100
15 A ¹	173 100	80	1800	300 A	3.3	0.13	100
16 A ¹	173 100	80	1800	300 A	3.8	0.13	100

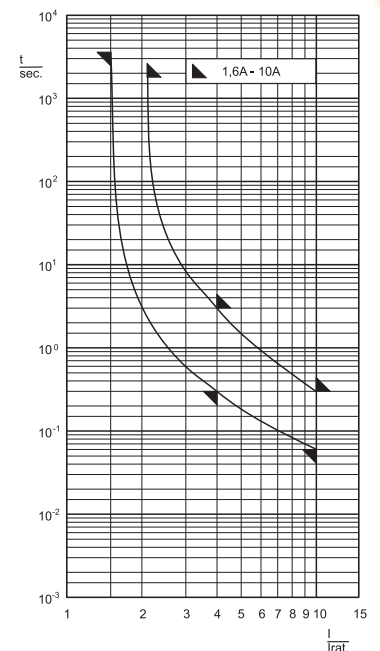
¹ Consideration should be given to heat dissipation.

² max according to EN 60127-2/5.



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
1.6 A ▼ 10 A	> 1 h	< 30 min.	-	300 ms ▼ 3 s	60 ms ▼ 300 ms





MINIATURE FUSES

CERAMIC TUBE

T

 Size
5 x 20 mm

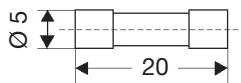
 Rated voltage
250 V

time lag

 Standard
DIN VDE 0820-2/5 · IEC 60127-2/5

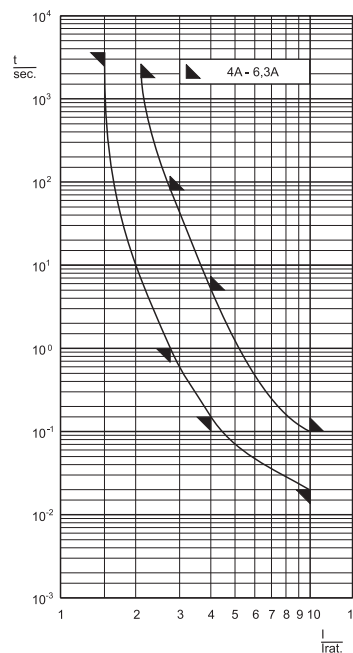
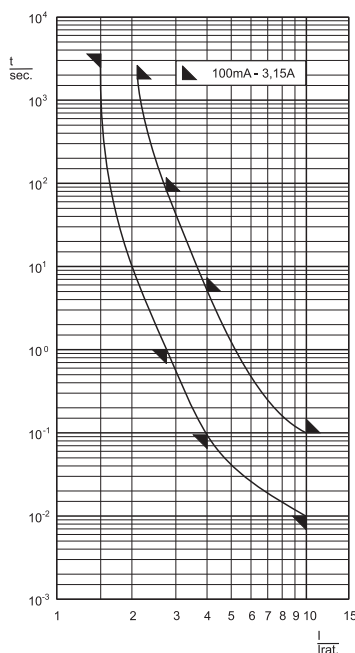
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	SEMKO	VDE	BEAB	cURus	UR	BSI	Weight (kg/100)	Pack
100 mA	179 200	2300	0.020	1500 A	0.6							0.13	100
125 mA	179 200	2200	0.045	1500 A	0.8							0.13	100
160 mA	179 200	2100	0.08	1500 A	0.9							0.13	100
200 mA	179 200	1800	0.14	1500 A	0.9							0.13	100
250 mA	179 200	1500	0.25	1500 A	1.0							0.13	100
315 mA	179 200	1000	0.45	1500 A	1.0							0.13	100
400 mA	179 200	850	0.8	1500 A	1.0							0.13	100
500 mA	179 200	700	1.6	1500 A	1.0							0.13	100
630 mA	179 200	300	0.6	1500 A	0.4							0.13	100
800 mA	179 200	300	1.0	1500 A	0.6							0.13	100
1 A	179 200	350	1.5	1500 A	0.8	✓	✓	✓	✓	✓		0.13	100
1.25 A	179 200	250	3.1	1500 A	0.8	✓	✓	✓	✓	✓		0.13	100
1.6 A	179 200	150	3.1	1500 A	0.8	✓	✓	✓	✓	✓		0.13	100
2 A	179 200	130	5.2	1500 A	0.8	✓	✓	✓	✓	✓		0.13	100
2.5 A	179 200	110	10	1500 A	0.9	✓	✓	✓	✓	✓		0.13	100
3.15 A	179 200	100	20	1500 A	1.0	✓	✓	✓	✓	✓		0.13	100
4 A	179 200	90	37	1500 A	1.1	✓	✓	✓	✓	✓		0.13	100
5 A	179 200	90	72	1500 A	1.3	✓	✓	✓	✓	✓		0.13	100
6.3 A	179 200	90	130	1500 A	1.6	✓	✓	✓	✓	✓		0.13	100
8 A	179 200	90	230	1500 A	2.0					✓		0.13	100
10 A	179 200	90	370	1500 A	2.5					✓		0.13	100

¹ Consideration should be given to heat dissipation.



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
100 mA				95 ms	10 ms
3.15 A			1 s	5 s	100 ms
4 A	> 1 h	< 30 min.	80 s	150 ms	20 ms
6.3 A				5 s	100 ms





MINIATURE FUSES

GLASS TUBE

T

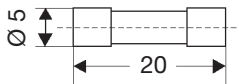
Size
5 x 20 mm

Rated voltage
250 V

time lag

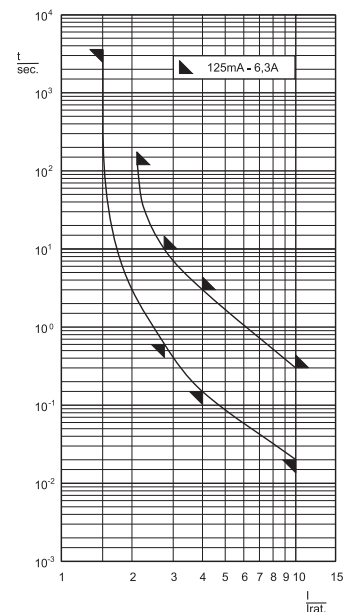
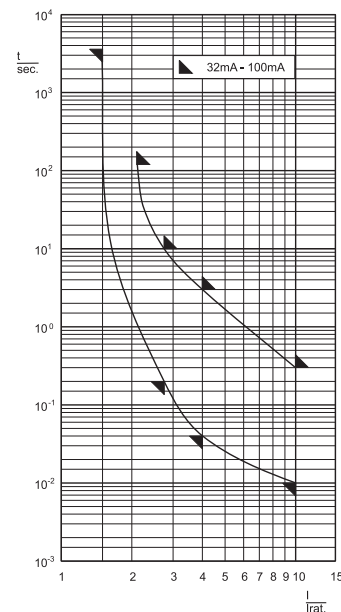
Standard
DIN VDE 0820-2/6 · IEC 60127-2/6

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	SEMLO VDE	Weight (kg/100)	Pack
32 mA	179 150	3000	0.010	150 A	0.2		0.1	100
40 mA	179 150	2000	0.020	150 A	0.2		0.1	100
50 mA	179 150	1500	0.035	150 A	0.2		0.1	100
63 mA	179 150	1000	0.05	150 A	0.2		0.1	100
80 mA	179 150	800	0.12	150 A	0.2		0.1	100
100 mA	179 150	700	0.16	150 A	0.3		0.1	100
125 mA	179 150	600	0.24	150 A	0.3		0.1	100
160 mA	179 150	600	0.4	150 A	0.3		0.1	100
200 mA	179 150	500	0.7	150 A	0.3		0.1	100
250 mA	179 150	400	1.4	150 A	0.3		0.1	100
315 mA	179 150	350	2.1	150 A	0.3		0.1	100
400 mA	179 150	120	0.6	150 A	0.2		0.1	100
500 mA	179 150	110	0.9	150 A	0.2	✓ ✓	0.1	100
630 mA	179 150	110	1.6	150 A	0.2	✓ ✓	0.1	100
800 mA	179 150	100	3.5	150 A	0.3	✓ ✓	0.1	100
1 A	179 150	80	3.9	150 A	0.3	✓ ✓	0.1	100
1.25 A	179 150	80	5.0	150 A	0.3	✓ ✓	0.1	100
1.6 A	179 150	80	10	150 A	0.4	✓ ✓	0.1	100
2 A	179 150	80	20	150 A	0.5	✓ ✓	0.1	100
2.5 A	179 150	80	26	150 A	0.6	✓ ✓	0.1	100
3.15 A	179 150	80	44	150 A	0.6	✓ ✓	0.1	100
4 A	179 150	80	72	150 A	0.8	✓ ✓	0.1	100
5 A	179 150	80	130	150 A	1.2		0.1	100
6.3 A	179 150	70	230	150 A	1.3		0.1	100



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
32 mA			200 ms	40 ms	10 ms
100 mA			10 s	3 s	300 ms
125 mA			600 ms	150 ms	20 ms
6.3 A			10 s	3 s	300 ms



MINIATURE FUSES
GLASS TUBE

T

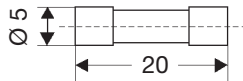

 Size
5 x 20 mm

 Rated voltage
250 V

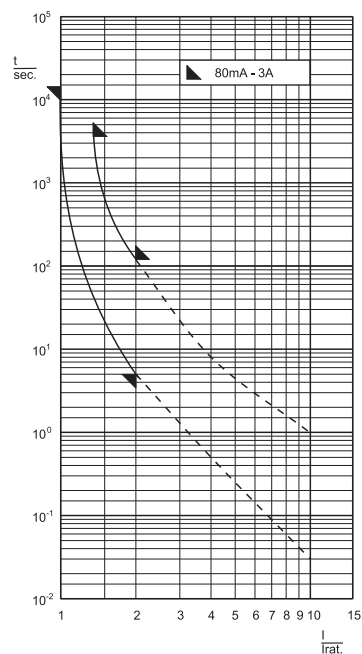
time lag

 Standard
UL 248-14 · CSA C22.2 No. 248.14

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	UL	Weight (kg/100)	Pack
80 mA	179 500	2800	0.024	35 A ¹	0.3	✓ ✓	0.1	100
100 mA	179 500	2400	0.053	35 A ¹	0.3	✓ ✓	0.1	100
125 mA	179 500	2100	0.08	35 A ¹	0.3	✓ ✓	0.1	100
150 mA	179 500	1800	0.13	35 A ¹	0.3	✓ ✓	0.1	100
200 mA	179 500	1300	0.24	35 A ¹	0.3	✓ ✓	0.1	100
250 mA	179 500	1100	0.42	35 A ¹	0.3	✓ ✓	0.1	100
300 mA	179 500	1050	0.8	35 A ¹	0.4	✓ ✓	0.1	100
375 mA	179 500	900	1.5	35 A ¹	0.4	✓ ✓	0.1	100
400 mA	179 500	850	1.6	35 A ¹	0.4	✓ ✓	0.1	100
500 mA	179 500	650	2.0	35 A ¹	0.4	✓ ✓	0.1	100
600 mA	179 500	550	3.1	35 A ¹	0.4	✓ ✓	0.1	100
700 mA	179 500	500	4.5	35 A ¹	0.4	✓ ✓	0.1	100
750 mA	179 500	450	5.5	35 A ¹	0.4	✓ ✓	0.1	100
800 mA	179 500	400	6.4	35 A ¹	0.4	✓ ✓	0.1	100
1 A	179 500	350	12	35 A ¹	0.4	✓ ✓	0.1	100
1.25 A	179 500	300	19	100 A ¹	0.4	✓ ✓	0.1	100
1.5 A	179 500	280	25	100 A ¹	0.5	✓ ✓	0.1	100
1.6 A	179 500	270	32	100 A ¹	0.5	✓ ✓	0.1	100
2 A	179 500	325	55	100 A ¹	0.5	✓ ✓	0.1	100
2.5 A	179 500	215	90	100 A ¹	0.6	✓ ✓	0.1	100
3 A	179 500	200	160	100 A ¹	0.6	✓ ✓	0.1	100

¹ 10.000 A @ 125 V AC

Pre-arcing time limits

Rated current	1.0 I _n	1.35 I _n	2 I _n
80 mA	4 h	1 h	5 s
3 A			120 s





MINIATURE FUSES

CERAMIC TUBE

FF

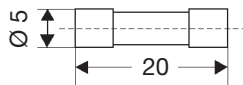
Size
5 x 20 mm

Rated voltage
250 V

very fast acting

Standard
not standardized

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus	Weight (kg/100)	Pack
100 mA	70 001 40	4000	0.0016	300 kA	0.4	✓	0.14	100
125 mA	70 001 40	3500	0.0024	300 kA	0.5	✓	0.14	100
160 mA	70 001 40	1300	0.004	300 kA	0.3	✓	0.14	100
200 mA	70 001 40	1100	0.008	300 kA	0.3	✓	0.14	100
250 mA	70 001 40	1000	0.019	300 kA	0.3	✓	0.14	100
315 mA	70 001 40	900	0.03	300 kA	0.3	✓	0.14	100
400 mA	70 001 40	850	0.065	300 kA	0.4	✓	0.14	100
500 mA	70 001 40	800	0.12	300 kA	0.4	✓	0.14	100
630 mA	70 001 40	700	0.17	300 kA	0.5	✓	0.14	100
800 mA	70 001 40	600	0.26	300 kA	0.5	✓	0.14	100
1 A	70 001 40	750	0.17	300 kA	0.8	✓	0.14	100
1.25 A	70 001 40	750	0.26	300 kA	1.0	✓	0.14	100
1.6 A	70 001 40	700	0.31	300 kA	1.2	✓	0.14	100
2 A	70 001 40	650	0.64	300 kA	1.3	✓	0.14	100
2.5 A	70 001 40	600	0.88	300 kA	1.5	✓	0.14	100
3.15 A	70 001 40	550	1.6	300 kA	1.8	✓	0.14	100
4 A	70 001 40	500	3.2	300 kA	2.0	✓	0.14	100
5 A	70 001 40	500	5.9	300 kA	2.4	✓	0.14	100
6.3 A	70 001 40	450	10	1500 A	2.8		0.14	100
8 A	70 001 40	400	19	1500 A	3.2		0.14	100
10 A	70 001 40	400	30	1500 A	4.0		0.14	100
6.3 A	70 007 40	250	1.6	300 kA	2.8	✓	0.14	100
8 A	70 007 40	250	4.5	300 kA	3.0	✓	0.14	100
10 A	70 007 40	200	8.8	300 kA	3.4	✓	0.14	100
12.5 A	70 007 40	200	15	300 kA	4.0	✓	0.14	100



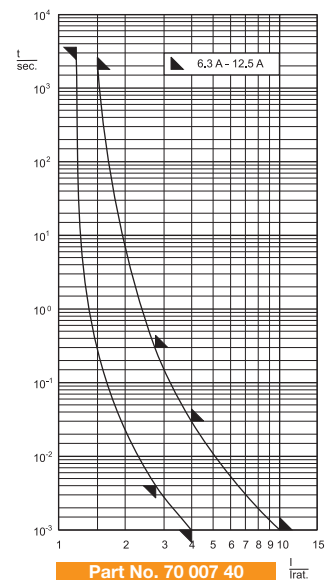
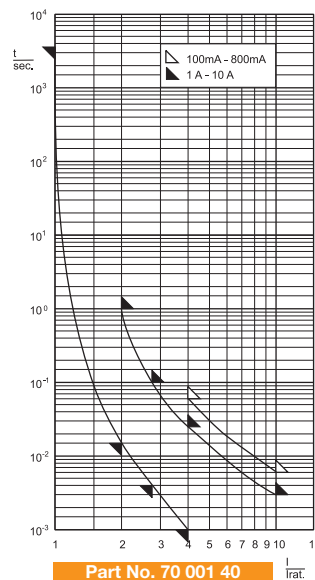
Pre-arcing time limits

Part No. 70 001 40

Rated current	1.0 I _{rat}	2.0 I _{rat}	2.75 I _{rat}	4 I _{rat}	10 I _{rat}
160 mA ▼ 800 mA	> 1 h	> 1 h	> 1 h	< 60 ms	< 6 ms
1 A ▼ 10 A		15 ms ▼ 1 s	4 ms ▼ 100 ms	1 ms ▼ 25 ms	< 3 ms

Part No. 70 007 40

Rated current	1.2 I _{rat}	1.5 I _{rat}	2.75 I _{rat}	4 I _{rat}	10 I _{rat}
6.3 A ▼ 12.5 A	> 1 h	< 30 min	4 ms ▼ 300 ms	1 ms ▼ 30 ms	< 1 ms



MINIATURE FUSES
GLASS TUBE

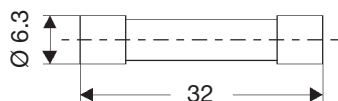
F


 Size
6.3 x 32 mm

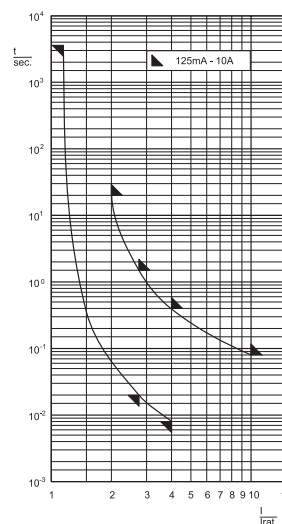
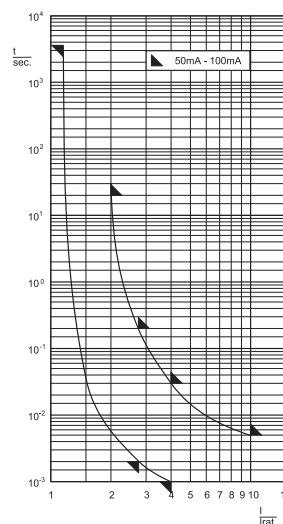
 Rated voltage
250 V
fast acting

 Standard
DIN VDE 0820-2/4 · IEC 60127-2/4

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
50 mA	189 000	9600	0.0003	35 A	0.7	0.1	100
63 mA	189 000	6000	0.0005	35 A	0.5	0.1	100
80 mA	189 000	5000	0.0010	35 A	0.6	0.1	100
100 mA	189 000	4500	0.0014	35 A	0.7	0.1	100
125 mA	189 000	4000	0.0034	35 A	0.7	0.1	100
160 mA	189 000	3500	0.007	35 A	0.8	0.1	100
200 mA	189 000	3000	0.013	35 A	0.9	0.1	100
250 mA	189 000	3000	0.022	35 A	1.0	0.1	100
315 mA	189 000	2500	0.054	35 A	1.1	0.1	100
400 mA	189 000	2500	0.11	35 A	1.2	0.1	100
500 mA	189 000	1900	0.21	35 A	1.3	0.1	100
630 mA	189 000	400	0.26	35 A	0.4	0.1	100
800 mA	189 000	350	0.57	35 A	0.4	0.1	100
1 A	189 000	300	1.1	35 A	0.5	0.1	100
1.25 A	189 000	300	2.0	35 A	0.6	0.1	100
1.6 A	189 000	300	3.3	35 A	0.7	0.1	100
2 A	189 000	250	6.2	35 A	0.8	0.1	100
2.5 A	189 000	220	13	35 A	0.9	0.1	100
3.15 A	189 000	200	24	35 A	1.1	0.1	100
4 A	189 000	200	40	40 A	1.3	0.1	100
5 A	189 000	180	80	50 A	1.4	0.1	100
6.3 A	189 000	170	150	63 A	1.6	0.1	100
8 A ¹	189 000	160	240	80 A	2.0	0.1	100
10 A ¹	189 000	150	500	100 A	2.3	0.1	100
12.5 A ¹	189 000	140	650	125 A	2.5	0.1	100
16 A ¹	189 000	130	1250	160 A	2.8	0.1	100
20 A ¹	189 000	130	1600	200 A	4.0	0.1	100

¹ Consideration should be given to heat dissipation.

Pre-arcing time limits

Rated current	1.15 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
50 mA			2 ms	1 ms	
100 mA			200 ms	30 ms	< 5 ms
125 mA			20 ms	8 ms	
10 A			1.5 s	400 ms	< 80 ms
	> 1 h	20 s			





MINIATURE FUSES

CERAMIC TUBE

F

Size
6.3 x 32 mm

Rated voltage
500 V

fast acting

Standard
not standardized

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	UR	Weight (kg/100)	Pack
160 mA	189 020	7000	0.0015	1500 A *	2.5		0.24	100
200 mA	189 020	6500	0.0035	1500 A *	2.9		0.24	100
250 mA	189 020	6000	0.0085	1500 A *	3.4		0.24	100
315 mA	189 020	1000	0.025	1500 A *	0.9		0.24	100
400 mA	189 020	900	0.045	1500 A *	1.0		0.24	100
500 mA	189 020	800	0.09	1500 A *	1.1		0.24	100
630 mA	189 020	700	0.15	1500 A *	1.3		0.24	100
800 mA	189 020	600	0.3	1500 A *	1.4		0.24	100
1 A	189 020	400	0.4	50 kA **	1.2	✓	0.24	100
1.25 A	189 020	300	0.8	50 kA **	1.3	✓	0.24	100
1.6 A	189 020	300	1.5	50 kA **	1.4	✓	0.24	100
2 A	189 020	280	2.5	50 kA **	1.6	✓	0.24	100
2.5 A	189 020	260	5	50 kA **	1.8	✓	0.24	100
3.15 A	189 020	240	9	50 kA **	2.3	✓	0.24	100
4 A	189 020	220	18	50 kA **	2.6	✓	0.24	100
5 A	189 020	190	40	50 kA **	2.9	✓	0.24	100
6.3 A	189 020	170	80	50 kA **	3.2	✓	0.24	100
8 A ¹	189 020	160	150	1500 A *	3.7		0.24	100
10 A ¹	189 020	150	240	1500 A *	4.0		0.24	100
12.5 A ¹	189 020	140	500	1500 A *	5.5		0.24	100
16 A ¹	189 020	130	920	1500 A *	6.5		0.24	100

Size
6.3 x 32 mm

Rated voltage
440 V

fast acting

Standard
not standardized

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	UR	Weight (kg/100)	Pack
20 A ¹	189 020	120	1500	1500 A	8.4		0.24	100
25 A ¹	189 020	110	3100	1500 A	11		0.24	100

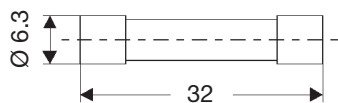
¹ Consideration should be given to heat dissipation.

* @ 500 V AC

** @ 500 V AC and 20 kA @ 500 V DC approved

MINIATURE FUSES CERAMIC TUBE

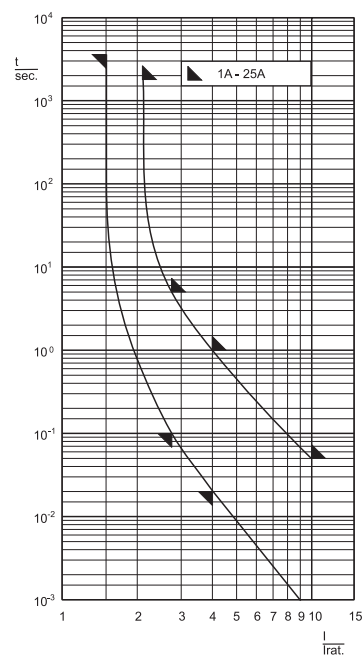
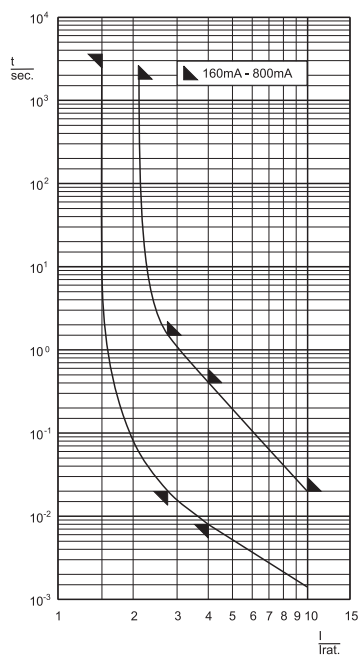
F



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
160 mA	> 1 h	30 min.	20 ms	8 ms	< 20 ms
800 mA			1.5 s	0.4 s	
1 A			100 ms	20 ms	< 50 ms
25 A			5 s	1 s	

189 020





MINIATURE FUSES

GLASS TUBE

T

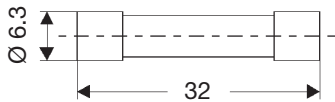
Size
6.3 x 32 mm

Rated voltage
250 V

time lag

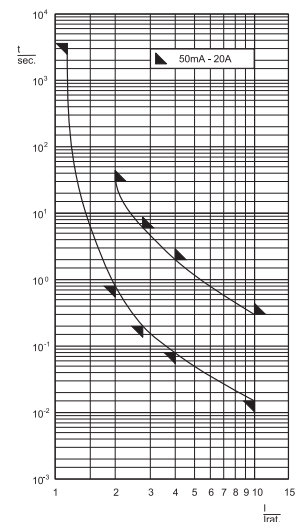
Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	Weight (kg/100)	Pack
50 mA	189 100	3000	0.035	35 A	0.3	0.12	100
63 mA	189 100	2500	0.06	35 A	0.3	0.12	100
80 mA	189 100	2000	0.13	35 A	0.3	0.12	100
100 mA	189 100	1500	0.17	35 A	0.3	0.12	100
125 mA	189 100	1200	0.26	35 A	0.3	0.12	100
160 mA	189 100	1100	0.44	35 A	0.4	0.12	100
200 mA	189 100	1000	0.84	35 A	0.4	0.12	100
250 mA	189 100	900	1.5	35 A	0.5	0.12	100
315 mA	189 100	800	2.4	35 A	0.5	0.12	100
400 mA	189 100	300	0.6	35 A	0.2	0.12	100
500 mA	189 100	300	0.9	35 A	0.3	0.12	100
630 mA	189 100	300	1.6	35 A	0.3	0.12	100
800 mA	189 100	250	3.5	35 A	0.4	0.12	100
1 A	189 100	250	4	35 A	0.4	0.12	100
1.25 A	189 100	250	5	35 A	0.4	0.12	100
1.6 A	189 100	200	10	35 A	0.5	0.12	100
2 A	189 100	200	16	35 A	0.6	0.12	100
2.5 A	189 100	200	24	35 A	0.7	0.12	100
3.15 A	189 100	200	42	35 A	0.8	0.12	100
4 A	189 100	200	70	40 A	1.0	0.12	100
5 A	189 100	200	130	50 A	1.3	0.12	100
6.3 A	189 100	200	230	63 A	1.6	0.12	100
8 A	189 100	200	370	80 A	2.0	0.12	100
10 A	189 100	150	630	100 A	2.3	0.12	100
12.5 A	189 100	150	820	125 A	2.8	0.12	100
16 A	189 100	150	1200	160 A	3.0	0.12	100
20 A	189 100	150	1600	200 A	4.0	0.12	100

¹ Consideration should be given to heat dissipation.



Pre-arcing time limits

Rated current	1.15 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
50 mA		800 ms	200 ms	80 ms	15 ms
20 A	> 1 h	30 s	6 s	2 s	300 ms




MINIATURE FUSES
CERAMIC TUBE

T

Size **6.3 x 32 mm** Rated voltage **500 V** time lag Standard **not standardized**

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus UR	Weight (kg/100)	Pack
100 mA	189 140	3600	0.05	1500 A *	1.3		0.24	100
125 mA	189 140	3400	0.08	1500 A *	1.4		0.24	100
160 mA	189 140	3000	0.12	1500 A *	1.5		0.24	100
200 mA	189 140	2500	0.20	1500 A *	1.6		0.24	100
250 mA	189 140	2000	0.35	1500 A *	1.7		0.24	100
315 mA	189 140	1800	0.50	1500 A *	1.8		0.24	100
400 mA	189 140	1600	0.80	1500 A *	2.0		0.24	100
500 mA	189 140	450	0.32	1500 A *	0.6	✓	0.24	100
630 mA	189 140	400	0.60	1500 A *	0.7	✓	0.24	100
800 mA	189 140	350	1.0	1500 A *	0.8	✓	0.24	100
1 A	189 140	350	1.5	1500 A *	0.9	✓	0.24	100
1.25 A	189 140	300	3.1	1500 A *	1.0	✓	0.24	100
1.6 A	189 140	200	5.2	1500 A *	1.1	✓	0.24	100
2 A	189 140	180	10	1500 A *	1.2	✓	0.24	100
2.5 A	189 140	160	19	1500 A *	1.3	✓	0.24	100
3.15 A	189 140	150	37	1500 A *	1.4	✓	0.24	100
4 A	189 140	140	68	1500 A *	1.5	✓	0.24	100
5 A	189 140	135	80	1500 A *	2.2	✓	0.24	100
6.3 A	189 140	110	215	1500 A *	2.2	✓	0.24	100
8 A ¹	189 140	110	370	1500 A *	2.6	✓	0.24	100
10 A ¹	189 140	100	620	1500 A *	3.0	✓	0.24	100
12.5 A ¹	189 140	100	1300	1500 A *	3.5	✓	0.24	100
16 A ¹	189 140	100	2500	1500 A *	4.0	✓	0.24	100

Size **6.3 x 32 mm** Rated voltage **440 V** time lag Standard **not standardized**

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus UR	Weight (kg/100)	Pack
20 A ¹	189 140	100	3400	1500 A	6		0.24	100
25 A ¹	189 140	100	5600	1500 A	8		0.24	100

Size **6.3 x 32 mm** Rated voltage **250 V** time lag Standard **not standardized**

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus UR	Weight (kg/100)	Pack
32 A ¹	189 140	80	3900	1500 A	10		0.24	100

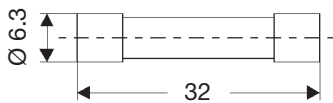
¹ Consideration should be given to heat dissipation.

* @ 500 V and 10 kA @ 440 V DC



MINIATURE FUSES CERAMIC TUBE

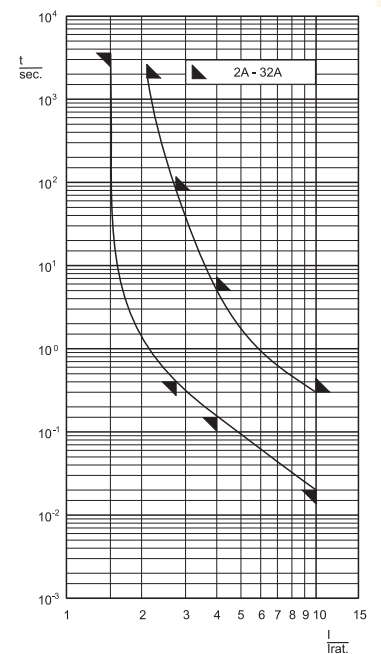
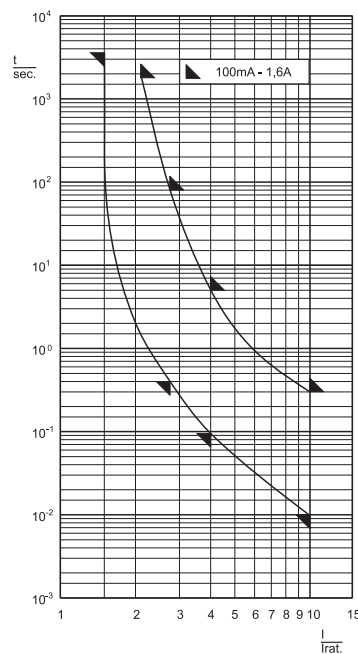
T



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
100 mA	1 h	30 min.	400 ms	95 ms	10 ms
1.6 A				5 s	300 ms
2 A				150 ms	20 ms
32 A				5 s	300 ms

189 140





MINIATURE FUSES

GLASS TUBE

T

 Size
6.3 x 32 mm

 Rated voltage
250 V

time lag

 Standard
not standardized

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	cULus	Weight (kg/100)	Pack
300 mA	189 500	870	1.5	35 A ¹	0.6	✓	0.1	100
375 mA	189 500	840	2.5	35 A ¹	0.6	✓	0.1	100
400 mA	189 500	730	2.5	35 A ¹	0.6	✓	0.1	100
500 mA	189 500	660	5.4	35 A ¹	0.6	✓	0.1	100
600 mA	189 500	600	3.1	35 A ¹	0.6	✓	0.1	100
700 mA	189 500	580	4.5	35 A ¹	0.7	✓	0.1	100
800 mA	189 500	500	6.4	35 A ¹	0.7	✓	0.1	100
1 A	189 500	450	13	35 A ¹	0.7	✓	0.1	100
1.25 A	189 500	400	19	100 A ¹	0.7	✓	0.1	100
1.5 A	189 500	370	25	100 A ¹	0.8	✓	0.1	100
1.6 A	189 500	350	32	100 A ¹	0.8	✓	0.1	100
2 A	189 500	330	55	100 A ¹	0.9	✓	0.1	100
2.5 A	189 500	290	90	100 A ¹	0.9	✓	0.1	100
2.8 A	189 500	270	120	100 A ¹	1.0	✓	0.1	100
3 A	189 500	250	160	100 A ¹	1.0	✓	0.1	100
3.2 A	189 500	220	350	100 A ¹	1.0	✓	0.1	100

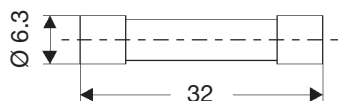
 Size
6.3 x 32 mm

 Rated voltage
125 V

time lag

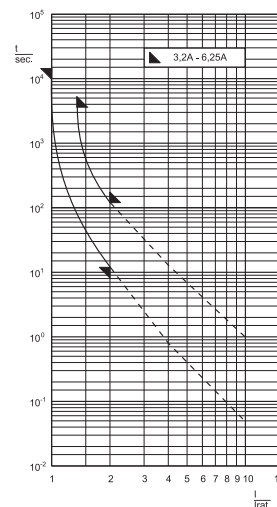
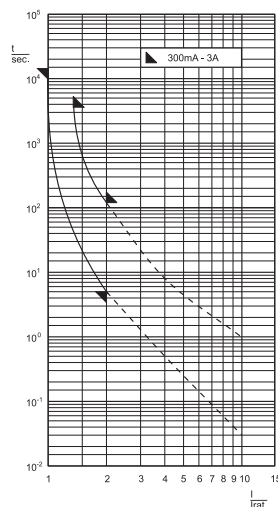
 Standard
not standardized

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² t _s -value A ² s	Rated breaking capacity	Power dissipation W	UR	Weight (kg/100)	Pack
4 A	189 500	200	590	100 A ¹	1.1	✓	0.1	100
5 A	189 500	200	600	100 A ¹	1.3	✓	0.1	100
6.25 A	189 500	200	1300	100 A ¹	1.7	✓	0.1	100

¹ 10.000 A @ 125 V AC

Pre-arcing time limits

Rated current		1.0 I _n	1.35 I _n	2.0 I _n
300 mA				5 s
3.2 A (250 V)				120 s
4 A	-	> 4 h	< 1 h	12 s
6.25 A (125 V)				120 s





MINIATURE FUSES

CERAMIC TUBE

FF

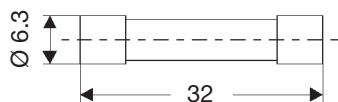
Size **6.3 x 32 mm** Rated voltage **700 V** **very fast acting** Standard **not standardized**

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus	Weight (kg/100)	Pack
160 mA	70 125 40	2000	0.004	50 kA	0.5	✓	0.24	100
200 mA	70 125 40	1600	0.008	50 kA	0.6	✓	0.24	100
250 mA	70 125 40	1500	0.024	50 kA	0.7	✓	0.24	100
315 mA	70 125 40	1350	0.035	50 kA	0.7	✓	0.24	100
400 mA	70 125 40	1030	0.07	50 kA	0.8	✓	0.24	100
500 mA	70 125 40	950	0.14	50 kA	0.8	✓	0.24	100
630 mA	70 125 40	860	0.14	50 kA	0.9	✓	0.24	100
800 mA	70 125 40	760	0.22	50 kA	1.0	✓	0.24	100
1 A	70 125 40	1100	0.14	50 kA	1.3	✓	0.24	100
1.25 A	70 125 40	1000	0.22	50 kA	1.6	✓	0.24	100
1.6 A	70 125 40	900	0.31	50 kA	1.9	✓	0.24	100
2 A	70 125 40	800	0.64	50 kA	2.4	✓	0.24	100

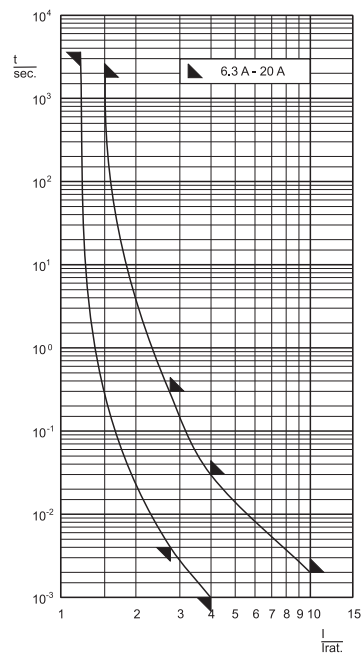
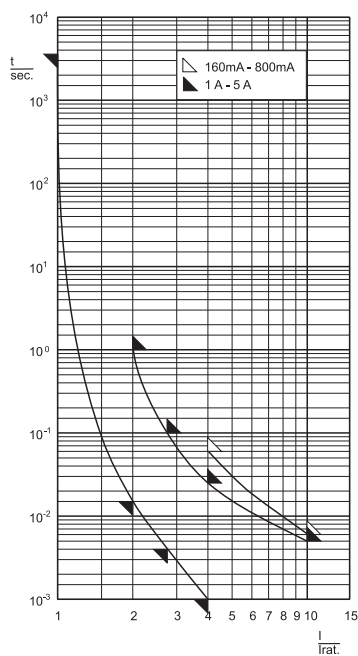
Size **6.3 x 32 mm** Rated voltage **500 V** **very fast acting** Standard **not standardized**

Rated current	Part No.	Voltage drop mV	Pre-arcing I ² ts-value A ² s	Rated breaking capacity	Power dissipation W	cURus	Weight (kg/100)	Pack
2.5 A	70 125 40	800	1.2	50 kA	2.7	✓	0.24	100
3.15 A	70 125 40	700	2	50 kA	3.0	✓	0.24	100
4 A	70 125 40	500	5	50 kA	3.2	✓	0.24	100
5 A	70 125 40	400	10	50 kA	3.6	✓	0.24	100
6.3 A	70 125 40	400	3	50 kA	4.0	✓	0.24	100
8 A ¹	70 125 40	350	6.5	50 kA	4.5	✓	0.24	100
10 A ¹	70 125 40	350	12	50 kA	5.0	✓	0.24	100
12.5 A ¹	70 125 40	300	18	50 kA	7.0	✓	0.24	100
16 A ¹	70 125 40	300	31	50 kA	9.0	✓	0.24	100
20 A ¹	70 125 40	300	46	50 kA	13	✓	0.24	100

¹ Consideration should be given to heat dissipation.

MINIATURE FUSES
CERAMIC TUBE
FF

Pre-arcing time limits

Rated current	$1.0 I_{rat}$	$2.0 I_{rat}$	$2.75 I_{rat}$	$4 I_{rat}$	$10 I_{rat}$
160 mA ▼ 800 mA	> 1 h	> 1 h	> 1 h	< 60 ms	< 6 ms
1 A ▼ 5 A		15 ms ▼ 1 s	4 ms ▼ 100 ms	1 ms ▼ 25 ms	< 5 ms
Rated current	$1.2 I_{rat}$	$1.5 I_{rat}$	$2.75 I_{rat}$	$4 I_{rat}$	$10 I_{rat}$
6.3 A ▼ 20 A	> 1 h	< 30 min	4 ms ▼ 300 ms	1 ms ▼ 30 ms	< 2 ms

70 125 40




MINIATURE FUSES WITH INDICATOR CERAMIC TUBE

F

Size
5 x 25 mm

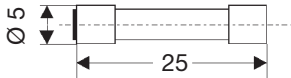
Rated voltage
250 V

fast acting

Standard
DIN 41576 Part 1

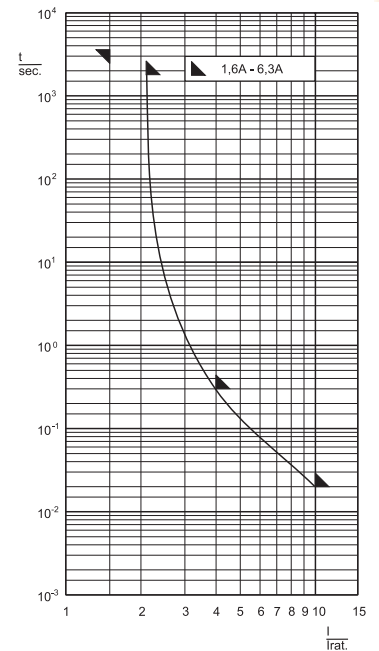
Rated current	Part No.	Voltage drop mV	Color code	Rated breaking capacity	Weight (kg/100)	Pack	
1.6 A	171 526	640	orange	1500 A	0.13	100	
2 A	171 526	420	blue	1500 A	0.13	100	
2.5 A	171 526	320	yellow	1500 A	0.13	100	
3.15 A	171 526	250	black	1500 A	0.13	100	
4 A	171 526	200	brown	1500 A	0.13	100	
5 A	171 526	180	white	1500 A	0.13	100	
6.3 A	171 526	170	green	1500 A	0.13	100	
(8) A	171 526	150	grey	1500 A	0.13	100	
(10) A	171 526	120	red	1500 A	0.13	100	

(...) = not standardized



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
1.6 A ▼ 6.3 A	> 1 h	< 30 min.	-	< 300 ms	< 20 ms





MINIATURE FUSES WITH INDICATOR CERAMIC TUBE

M

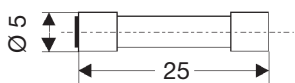
 Size
5 x 25 mm

 Rated voltage
250 V
medium time lag

 Standard
DIN 41576 Part 2

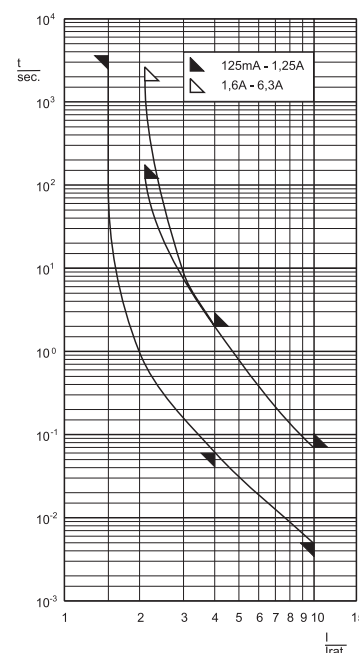
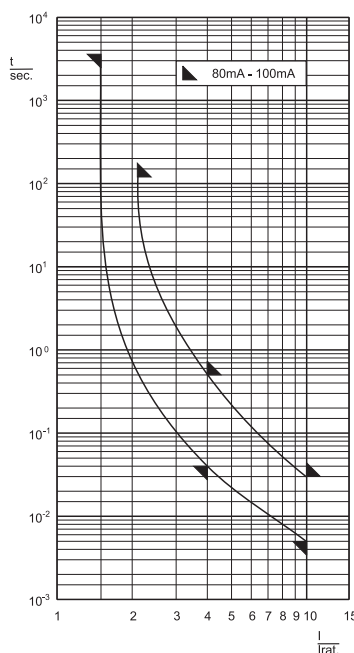
Rated current	Part No.	Voltage drop mV	Color code	Rated breaking capacity	Weight (kg/100)	Pack
80 mA	172 526	520	grey	80 A	0.15	100
100 mA	172 526	500	red	80 A	0.15	100
125 mA	172 526	500	violet	80 A	0.15	100
160 mA	172 526	400	orange	80 A	0.15	100
200 mA	172 526	400	blue	80 A	0.15	100
250 mA	172 526	375	yellow	1500 A	0.15	100
315 mA	172 526	410	black	1500 A	0.15	100
400 mA	172 526	280	brown	1500 A	0.15	100
500 mA	172 526	250	white	1500 A	0.15	100
630 mA	172 526	220	green	1500 A	0.15	100
800 mA	172 526	400	grey	1500 A	0.15	100
1 A	172 526	350	red	1500 A	0.15	100
1.25 A	172 526	315	lilac	1500 A	0.15	100
1.6 A	172 526	480	orange	1500 A	0.15	100
2 A	172 526	360	blue	1500 A	0.15	100
2.5 A	172 526	300	yellow	1500 A	0.15	100
3.15 A	172 526	250	black	1500 A	0.15	100
4 A	172 526	180	brown	1500 A	0.15	100
5 A	172 526	180	white	1500 A	0.15	100
6.3 A	172 526	160	green	1500 A	0.15	100
(8) A	172 526	160	grey	1500 A	0.15	100
(10) A	172 526	160	red	1500 A	0.15	100

(...) = not standardized



Pre-arcing time limits

Rated current	1.5 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
80 mA				40 ms	5 ms
100 mA				500 ms	30 ms
125 mA		< 2 min.			
1.5 A	> 1 h		-	60 ms	5 ms
1.6 A				2 s	70 ms
6.3 A		< 30 min.			





MINIATURE FUSES WITH INDICATOR CERAMIC TUBE

M

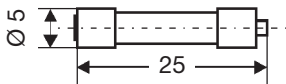
Size
5 x 25 mm

Rated voltage
250 V

medium time lag

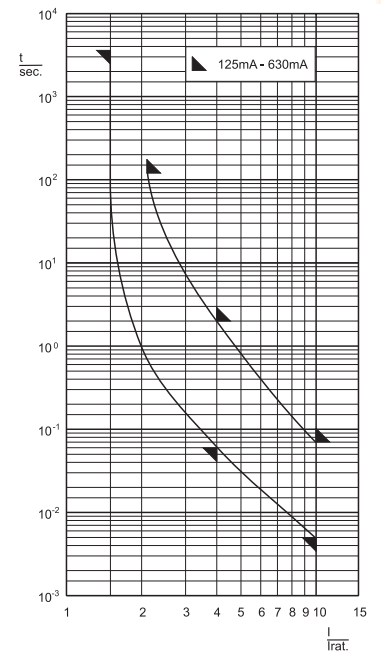
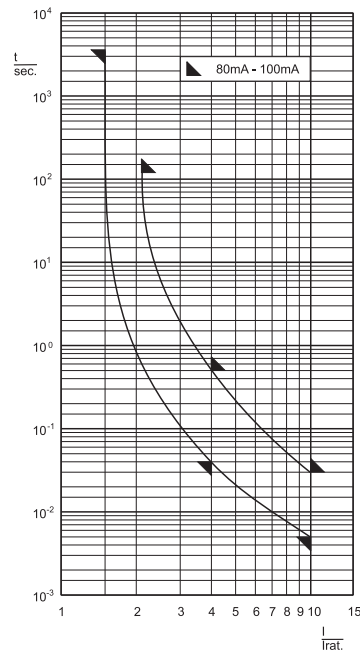
Standard
DIN 41577 Part 2

Rated current	Part No.	Voltage drop mV	Color code	Rated breaking capacity	Weight (kg/100)	Pack	
80 mA	70 016 07	520	grey	80 A	0.15	100	
100 mA	70 016 07	500	red	80 A	0.15	100	
125 mA	70 016 07	500	violet	80 A	0.15	100	
160 mA	70 016 07	400	orange	80 A	0.15	100	
200 mA	70 016 07	400	blue	80 A	0.15	100	
250 mA	70 017 07	500	yellow	1500 A	0.15	100	
315 mA	70 017 07	470	black	1500 A	0.15	100	
400 mA	70 017 07	400	brown	1500 A	0.15	100	
500 mA	70 017 07	400	white	1500 A	0.15	100	
630 mA	70 017 07	380	green	1500 A	0.15	100	



Pre-arcing time limits

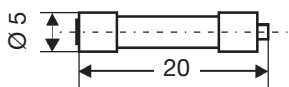
Rated current	1.5 I _n	2.0 I _n	2.75 I _n	4 I _n	10 I _n
80 mA	> 1 h	< 2 min.	-	40 ms	5 ms
100 mA				500 ms	30 ms
125 mA				60 ms	5 ms
630 mA				2 s	70 ms



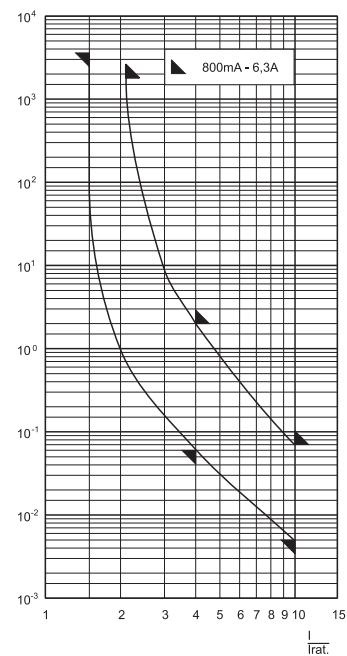
MINIATURE FUSES WITH INDICATOR
CERAMIC TUBE
M

Size
5 x 20 mm
Rated voltage
250 V
medium time lag
Standard
DIN 41577 Part 2

Rated current	Part No.	Voltage drop mV	Color code	Rated breaking capacity	Weight (kg/100)	Pack	
800 mA	70 014 07	520	grey	1500 A	0.15	100	
1 A	70 014 07	470	red	1500 A	0.15	100	
1.25 A	70 014 07	400	violet	1500 A	0.15	100	
1.6 A	70 014 07	400	orange	1500 A	0.15	100	
2 A	70 014 07	380	blue	1500 A	0.15	100	
2.5 A	70 014 07	380	yellow	1500 A	0.15	100	
3.15 A	70 014 07	380	black	1500 A	0.15	100	
4 A	70 014 07	380	brown	1500 A	0.15	100	
6.3 A ¹	70 012 05	380	green	1500 A	0.15	100	

¹ without fitting device

Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	2.75 I _n	4 I _n	10 I _n
1.6 A ▼ 6.3 A	> 1 h	< 30 min.	-	60 ms ▼ 2 s	5 ms ▼ 70 ms





MINIATURE FUSES WITH INDICATOR CERAMIC TUBE

F

Size
5 x 25 mm

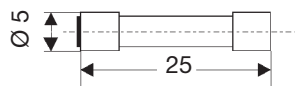
Rated voltage
450 V

fast acting

Lloyds registered

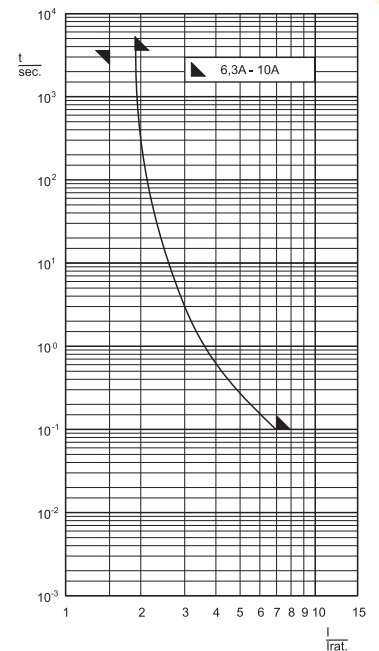
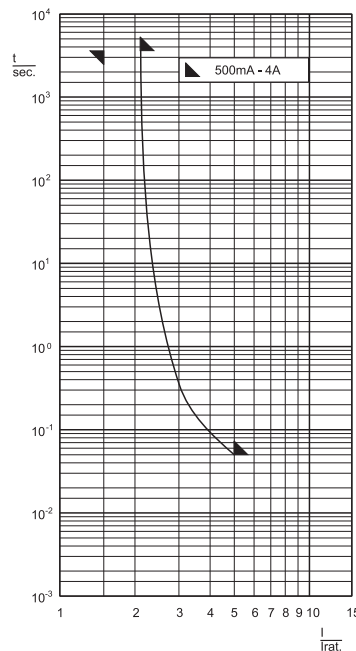
Rated current	Part No.	Voltage drop mV	Color code	Rated breaking capacity	Weight (kg/100)	Pack	
500 mA	70 089 13	700	white	70 kA	0.13	100	
1 A	70 089 13	300	red	70 kA	0.13	100	
1.25 A	70 089 13	250	violet	70 kA	0.13	100	
1.6 A	70 089 13	400	orange	70 kA	0.13	100	
2 A	70 089 13	400	blue	70 kA	0.13	100	
2.5 A	70 089 13	350	yellow	70 kA	0.13	100	
3.15 A	70 089 13	300	black	70 kA	0.13	100	
4 A	70 089 13	200	brown	70 kA	0.13	100	
6.3 A	70 089 13	150	green	70 kA	0.13	100	
10 A	70 089 13	130	red	70 kA	0.13	100	

Note: Suitable fuse holder panel mounting Part No. 71 044 03 and screw cap Part No. 72 044 02 see cataloge MAR



Pre-arcing time limits

Rated current	$1.5 I_n$	$1.9 I_n$	$2.1 I_n$	$5 I_n$	$7 I_n$
500 mA ▼ 4 A	> 1 h	-	< 1 h	< 0.05 s	-
6.3 A ▼ 10 A		< 1 h	-	-	< 0.1 s



MINIATURE FUSES
GLASS TUBE

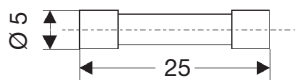
F


 Size
5 x 25 mm

 Rated voltage
250 V
fast acting

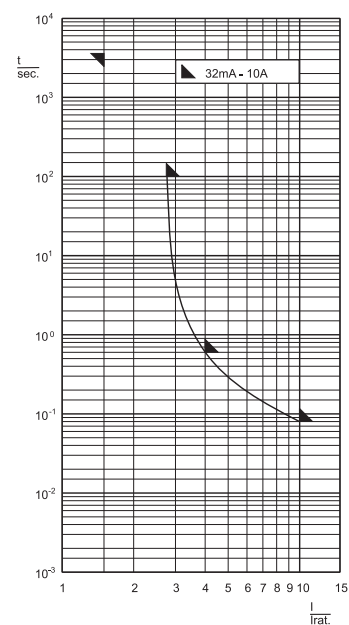
 Standard
not standardized

Rated current	Part No.	Rated breaking capacity	Weight (kg/100)	Pack	
32 mA	171 525	50 A	0.12	100	
50 mA	171 525	50 A	0.12	100	
63 mA	171 525	50 A	0.12	100	
80 mA	171 525	50 A	0.12	100	
100 mA	171 525	50 A	0.12	100	
125 mA	171 525	50 A	0.12	100	
160 mA	171 525	50 A	0.12	100	
200 mA	171 525	50 A	0.12	100	
250 mA	171 525	50 A	0.12	100	
315 mA	171 525	50 A	0.12	100	
400 mA	171 525	50 A	0.12	100	
500 mA	171 525	50 A	0.12	100	
630 mA	171 525	50 A	0.12	100	
800 mA	171 525	50 A	0.12	100	
1 A	171 525	50 A	0.12	100	
1.25 A	171 525	50 A	0.12	100	
1.6 A	171 525	80 A	0.12	100	
2 A	171 525	80 A	0.12	100	
2.5 A	171 525	80 A	0.12	100	
3.15 A	171 525	80 A	0.12	100	
4 A	171 525	80 A	0.12	100	
5 A	171 525	80 A	0.12	100	
6.3 A	171 525	80 A	0.12	100	
8 A	171 525	80 A	0.12	100	
10 A	171 525	80 A	0.12	100	


Pre-arcing time limits

Part No. 171 525

Rated current	$1.5 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
32 mA ▼ 10 A	> 1 h	< 100 s	< 600 ms	< 80 ms





MINIATURE FUSES

GLASS TUBE

M

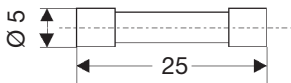
Size
5 x 25 mm

Rated voltage
250 V

medium time lag

Standard
not standardized

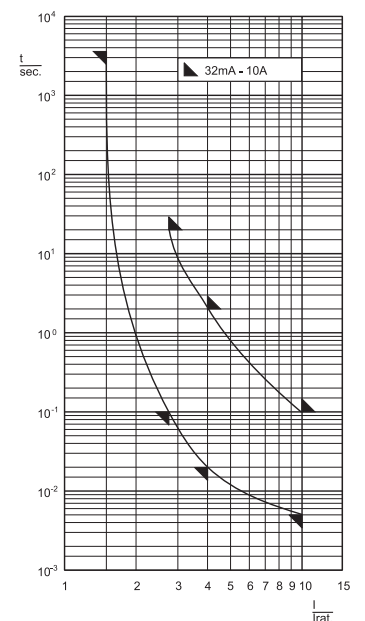
Rated current	Part No.	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	172 525	50 A	0.12	100
50 mA	172 525	50 A	0.12	100
63 mA	172 525	50 A	0.12	100
80 mA	172 525	50 A	0.12	100
100 mA	172 525	50 A	0.12	100
125 mA	172 525	50 A	0.12	100
160 mA	172 525	50 A	0.12	100
200 mA	172 525	50 A	0.12	100
250 mA	172 525	50 A	0.12	100
315 mA	172 525	50 A	0.12	100
400 mA	172 525	50 A	0.12	100
500 mA	172 525	50 A	0.12	100
630 mA	172 525	50 A	0.12	100
800 mA	172 525	50 A	0.12	100
1 A	172 525	50 A	0.12	100
1.25 A	172 525	50 A	0.12	100
1.6 A	172 525	80 A	0.12	100
2 A	172 525	80 A	0.12	100
2.5 A	172 525	80 A	0.12	100
3.15 A	172 525	80 A	0.12	100
4 A	172 525	80 A	0.12	100
5 A	172 525	80 A	0.12	100
6.3 A	172 525	80 A	0.12	100
8 A	172 525	80 A	0.12	100
10 A	172 525	80 A	0.12	100



Pre-arcing time limits

Part No. 172 525

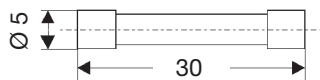
Rated current	$1.5 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
32 mA ↓ 10 A	> 1 h	100 ms ↓ 20 s	20 ms ↓ 2 s	5 ms ↓ 100 ms



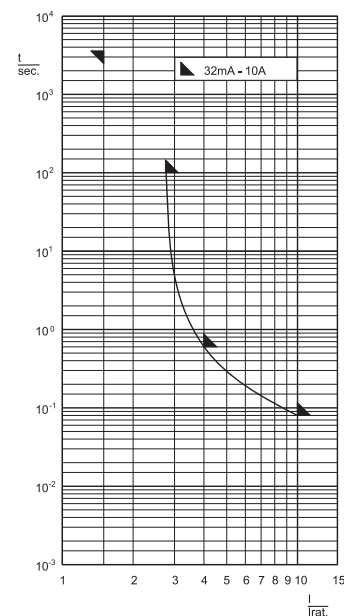
MINIATURE FUSES
GLASS TUBE > 1.25 A WITH FILLING
F

Size
5 x 30 mm
Rated voltage
500 V
fast acting
Standard
not standardized

Rated current	Part No.	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	171 530	50 A	0.12	100
50 mA	171 530	50 A	0.12	100
63 mA	171 530	50 A	0.12	100
80 mA	171 530	50 A	0.12	100
100 mA	171 530	50 A	0.12	100
125 mA	171 530	50 A	0.12	100
160 mA	171 530	50 A	0.12	100
200 mA	171 530	50 A	0.12	100
250 mA	171 530	50 A	0.12	100
315 mA	171 530	50 A	0.12	100
400 mA	171 530	50 A	0.12	100
500 mA	171 530	50 A	0.12	100
630 mA	171 530	50 A	0.12	100
800 mA	171 530	50 A	0.12	100
1 A	171 530	50 A	0.12	100
1.25 A	171 530	50 A	0.12	100
1.6 A	171 530	80 A	0.12	100
2 A	171 530	80 A	0.12	100
2.5 A	171 530	80 A	0.12	100
3.15 A	171 530	80 A	0.12	100
4 A	171 530	80 A	0.12	100
5 A	171 530	80 A	0.12	100
6.3 A	171 530	80 A	0.12	100
8 A	171 530	80 A	0.12	100
10 A	171 530	80 A	0.12	100


Pre-arcing time limits
Part No. 171 530

Rated current	$1.5 I_n$	$2.75 I_n$	$4 I_n$	$10 I_n$
32 mA ▼ 10 A	> 1 h	< 100 s	< 600 ms	< 80 ms





MINIATURE FUSES
GLASS TUBE > 1.25 A WITH FILLING

M

Size	Rated voltage		Standard
5 x 30 mm	500 V	medium time lag	not standardized

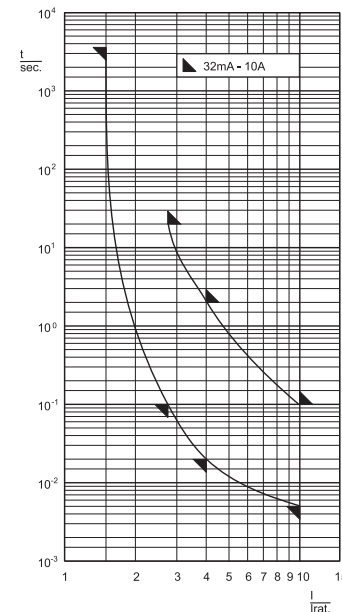
Rated current	Part No.	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	172 530	50 A	0.12	100
50 mA	172 530	50 A	0.12	100
63 mA	172 530	50 A	0.12	100
80 mA	172 530	50 A	0.12	100
100 mA	172 530	50 A	0.12	100
125 mA	172 530	50 A	0.12	100
160 mA	172 530	50 A	0.12	100
200 mA	172 530	50 A	0.12	100
250 mA	172 530	50 A	0.12	100
315 mA	172 530	50 A	0.12	100
400 mA	172 530	50 A	0.12	100
500 mA	172 530	50 A	0.12	100
630 mA	172 530	50 A	0.12	100
800 mA	172 530	50 A	0.12	100
1 A	172 530	50 A	0.12	100
1.25 A	172 530	50 A	0.12	100
1.6 A	172 530	80 A	0.12	100
2 A	172 530	80 A	0.12	100
2.5 A	172 530	80 A	0.12	100
3.15 A	172 530	80 A	0.12	100
4 A	172 530	80 A	0.12	100
5 A	172 530	80 A	0.12	100
6.3 A	172 530	80 A	0.12	100
8 A	172 530	80 A	0.12	100
10 A	172 530	80 A	0.12	100



Pre-arcing time limits

Part No. 172 530

Rated current	1.5 I _n	2.75 I _n	4 I _n	10 I _n
32 mA ↓ 10 A	> 1 h	50 ms ↓ 30 s	20 ms ↓ 2 s	5 ms ↓ 100 ms





MINIATURE FUSES

GLASS TUBE > 100 mA CERAMIC TUBE

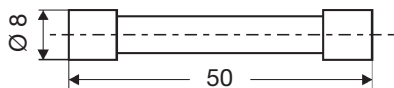
Size
8 x 50 mm

Rated voltage
1.2 kV

Standard
DIN 41570

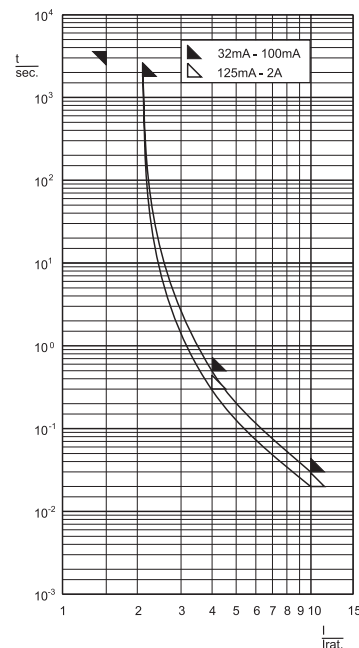
Rated current	Part No.	Voltage drop mV	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	184 000	2300	35 A	0.35	50
50 mA	184 000	1900	35 A	0.35	50
63 mA	184 000	1700	35 A	0.35	50
80 mA	184 000	1500	35 A	0.35	50
100 mA	184 000	1300	35 A	0.35	50
125 mA	184 000	9500	35 A	0.68	50
160 mA	184 000	8000	35 A	0.68	50
200 mA	184 000	7000	35 A	0.68	50
250 mA	184 000	6000	35 A	0.68	50
315 mA	184 000	5000	35 A	0.68	50
400 mA	184 000	2000	35 A	0.68	50
500 mA	184 000	950	35 A	0.68	50
630 mA	184 000	860	35 A	0.68	50
800 mA	184 000	760	35 A	0.68	50
1 A	184 000	640	35 A	0.68	50
1.25 A	184 000	540	35 A	0.68	50
1.6 A	184 000	500	35 A	0.68	50
2 A	184 000	460	35 A	0.68	50
(2.5) A	184 000		35 A	0.68	50
(3.15) A	184 000		35 A	0.68	50
(4) A	184 000		35 A	0.68	50
(5) A	184 000		35 A	0.68	50
(6.3) A	184 000		35 A	0.68	50

(...) = not standardized



Pre-arcing time limits

Rated current	1.5 I _n	2.1 I _n	4 I _n	10 I _n
32 mA				
100 mA			< 500 ms	< 30 ms
125 mA	> 1 h	< 30 min.		
2 A			< 300 ms	< 20 ms





MINIATURE FUSES

CERAMIC TUBE

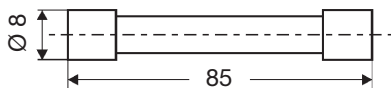
Size
8 x 85 mm

Rated voltage
3 kV

Standard
DIN 41569

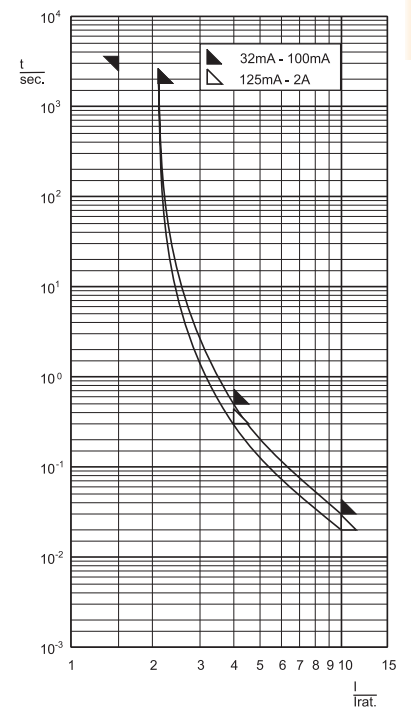
Rated current	Part No.	Voltage drop mV	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	185 000	4500	35 A	0.43	50
50 mA	185 000	3000	35 A	0.43	50
63 mA	185 000	2400	35 A	0.43	50
80 mA	185 000	1900	35 A	0.43	50
100 mA	185 000	1500	35 A	0.43	50
125 mA	185 000	17000	35 A	0.84	50
160 mA	185 000	14000	35 A	0.84	50
200 mA	185 000	12000	35 A	0.84	50
250 mA	185 000	10500	35 A	0.84	50
315 mA	185 000	9000	35 A	0.84	50
400 mA	185 000	3500	35 A	0.84	50
500 mA	185 000	1600	35 A	0.84	50
630 mA	185 000	1500	35 A	0.84	50
800 mA	185 000	1300	35 A	0.84	50
1 A	185 000	1200	35 A	0.84	50
1.25 A	185 000	1000	35 A	0.84	50
1.6 A	185 000	900	35 A	0.84	50
2 A	185 000	800	35 A	0.84	50
(2.5) A	185 000		35 A	0.84	50
(3.15) A	185 000		35 A	0.84	50
(4) A	185 000		35 A	0.84	50

(...) = not standardized



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$4 I_n$	$10 I_n$
32 mA				
100 mA			< 500 ms	< 30 ms
125 mA	> 1 h	< 30 min.		
2 A			< 300 ms	< 20 ms





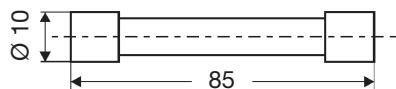
MINIATURE FUSES

CERAMIC TUBE

Size
10 x 85 mm

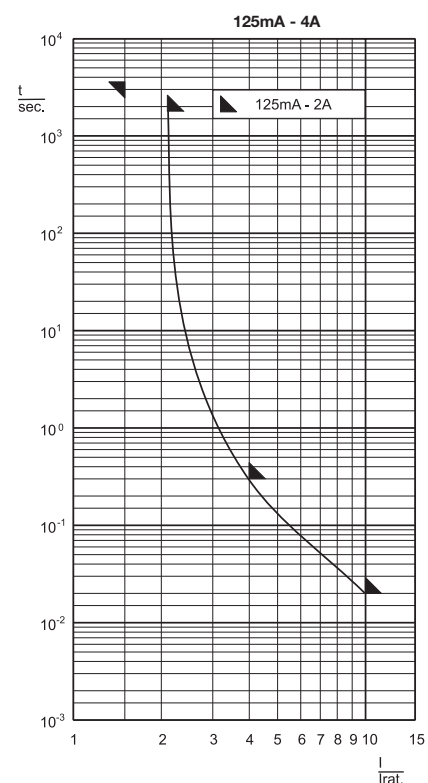
Rated voltage
3 kV

Rated current	Part No.	Voltage drop mV	Rated breaking capacity	Weight (kg/100) mW	Pack
125 mA	70 115 09	17000	on request	1.4	10
160 mA	70 115 09	14000	on request	1.4	10
200 mA	70 115 09	12000	on request	1.4	10
250 mA	70 115 09	10500	on request	1.4	10
315 mA	70 115 09	9000	on request	1.4	10
400 mA	70 115 09	3500	on request	1.4	10
500 mA	70 115 09	1600	on request	1.4	10
630 mA	70 115 09	1500	on request	1.4	10
800 mA	70 115 09	1300	on request	1.4	10
1 A	70 115 09	1200	on request	1.4	10
1.25 A	70 115 09	1000	on request	1.4	10
1.6 A	70 115 09	900	on request	1.4	10
2 A	70 115 09	800	on request	1.4	10
2.5 A	70 115 09		on request	1.4	10
3.15 A	70 115 09		on request	1.4	10
4 A	70 115 09		on request	1.4	10



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$4 I_n$	$10 I_n$
125 mA ▼ 4 A	> 1 h	< 30 min.	< 0.3 s	< 20 ms





MINIATURE FUSES

GLASS TUBE > 100 mA CERAMIC TUBE

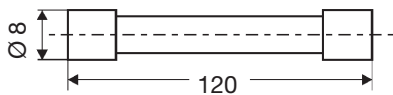
Size
8 x 120 mm

Rated voltage
6 kV

Standard
DIN 41683

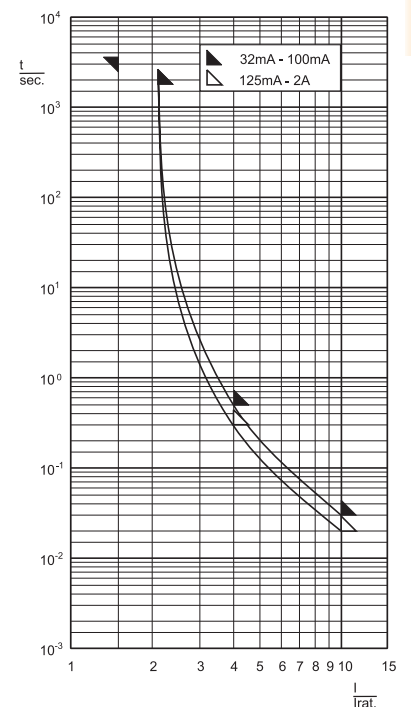
Rated current	Part No.	Voltage drop mV	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	186 000	6000	35 A	0.52	50
50 mA	186 000	4400	35 A	0.52	50
63 mA	186 000	3800	35 A	0.52	50
80 mA	186 000	3200	35 A	0.52	50
100 mA	186 000	2900	35 A	0.52	50
125 mA	186 000	22000	35 A	1.00	50
160 mA	186 000	19000	35 A	1.00	50
200 mA	186 000	16000	35 A	1.00	50
250 mA	186 000	14000	35 A	1.00	50
315 mA	186 000	12000	35 A	1.00	50
400 mA	186 000	5000	35 A	1.00	50
500 mA	186 000	2300	35 A	1.00	50
630 mA	186 000	2000	35 A	1.00	50
800 mA	186 000	1900	35 A	1.00	50
1 A	186 000	1800	35 A	1.00	50
1.25 A	186 000	1400	35 A	1.00	50
1.6 A	186 000	1300	35 A	1.00	50
2 A	186 000	1000	35 A	1.00	50
(2.5) A	186 000		35 A	1.00	50
(3.15) A	186 000		35 A	1.00	50
(4) A	186 000		35 A	1.00	50

(...) = not standardized



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$4 I_n$	$10 I_n$
32 mA				
100 mA			< 500 ms	< 30 ms
125 mA	> 1 h	< 30 min.		
2 A			< 300 ms	< 20 ms





MINIATURE FUSES

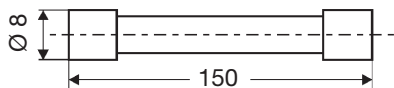
CERAMIC TUBE

Size
8 x 150 mm

Rated voltage
10 kV

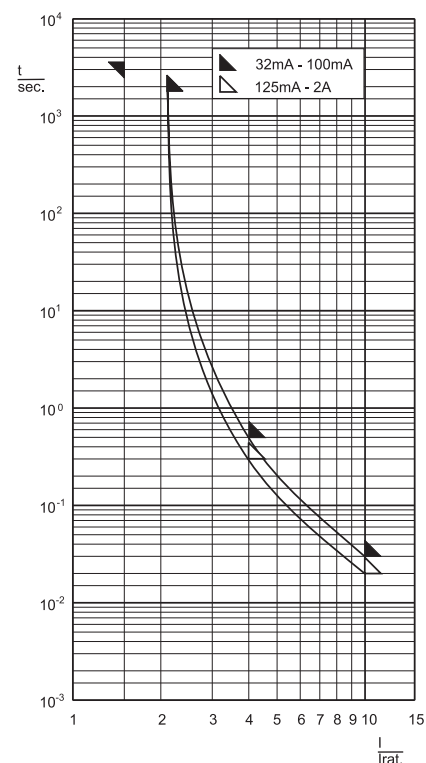
Standard
DIN 41684

Rated current	Part No.	Voltage drop mV	Rated breaking capacity	Weight (kg/100)	Pack
32 mA	187 000	14000	35 A	0.70	50
50 mA	187 000	8500	35 A	0.70	50
63 mA	187 000	6500	35 A	0.70	50
80 mA	187 000	5000	35 A	0.70	50
100 mA	187 000	4000	35 A	0.70	50
125 mA	187 000	27000	35 A	1.30	50
160 mA	187 000	24000	35 A	1.30	50
200 mA	187 000	21000	35 A	1.30	50
250 mA	187 000	18500	35 A	1.30	50
315 mA	187 000	17000	35 A	1.30	50
400 mA	187 000	6000	35 A	1.30	50
500 mA	187 000	2900	35 A	1.30	50
630 mA	187 000	2700	35 A	1.30	50
800 mA	187 000	2400	35 A	1.30	50
1 A	187 000	2100	35 A	1.30	50
1.25 A	187 000	1800	35 A	1.30	50
1.6 A	187 000	1600	35 A	1.30	50
2 A	187 000	1400	35 A	1.30	50



Pre-arcing time limits

Rated current	$1.5 I_n$	$2.1 I_n$	$4 I_n$	$10 I_n$
32 mA				
100 mA			< 500 ms	< 30 ms
125 mA	> 1 h	< 30 min.		
2 A			< 300 ms	< 20 ms

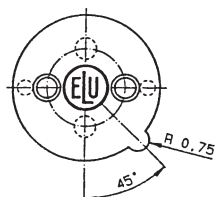
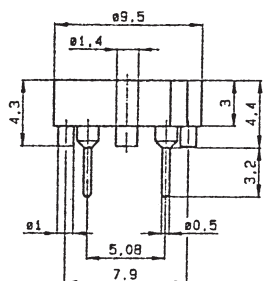


Fuse holder
Screw cap

 for sub miniature fuses size
8.4 x 7.6 mm

 Rated current
6.3 A

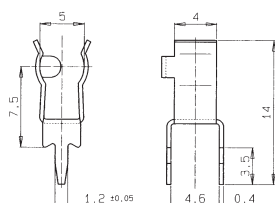
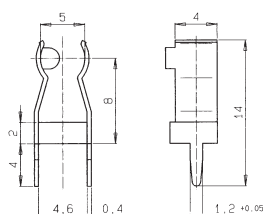
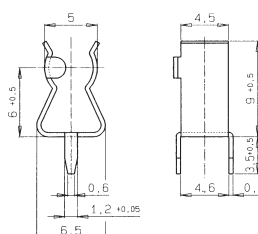
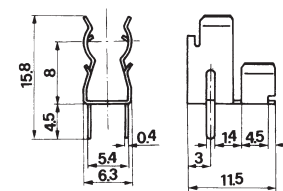
Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm	Connections
250 V	166 602	Printed circuit board	5.08	1	Solder


Fuse clips

 for fuse links cap size
5 + 6.3 mm Ø

 Rated current
6.3 A
other types
on request

Rated Voltage AC	Part No.	Mounting	Material	Connections
500 V	199 073	Printed circuit board	Brass, tinned	Solder
500 V	199 207	Printed circuit board	Brass, tinned	Solder
500 V	199 429	Printed circuit board	Brass, tinned	Solder
500 V	199 487	Printed circuit board	Brass, tinned	Solder
500 V	199 488	Printed circuit board	Brass, tinned	Solder

199 073

199 207

199 487

199 488


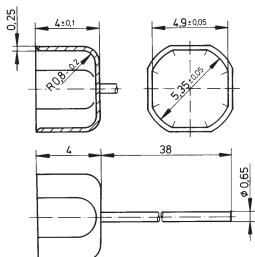
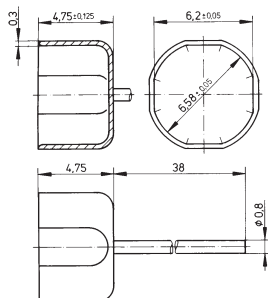
Push-on caps

Contact caps brass, silver-plated, wire-ends cooper, tinned

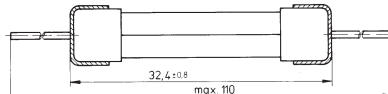
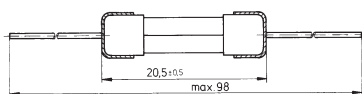
Rated current

6.3 A

for fuse links with contact cap Ø	Part No.	Mounting	Connections
5 mm	204 000	Printed circuit board	Axially welded wire-ends of 40 mm, solderable
6.3 mm	204 100	Printed circuit board	Axially welded wire-ends of 40 mm, solderable

204 000**204 100**

Below we show the assembly of 5 x 20 or 6.3 x 32 mm fuse links with caps. You can order this completely assembled unit by adding the letters "AK" ' at the end of the article No..



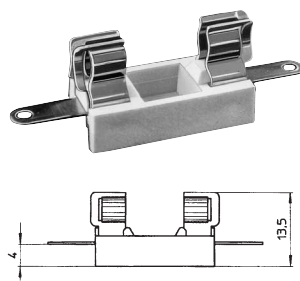
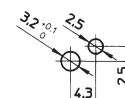
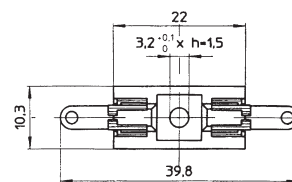
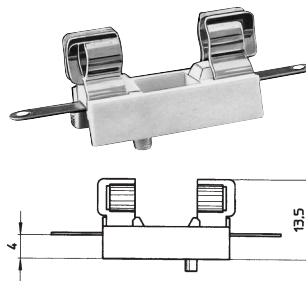
Fuse holders

 for fuse links size
5 x 20 mm

 Rated current
6.3 A

Rated Voltage AC	Part No.	Mounting	Connections
250 V	199 010	Printed circuit board, screw or rivet	Solder or plug
250 V	199 020 ¹	Printed circuit board, screw or rivet	Solder or plug

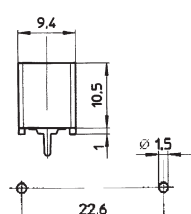
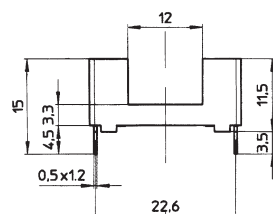
¹ with locating pin

199 010

199 020

Fuse holder

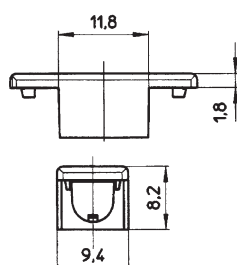
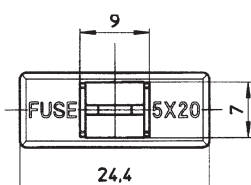
 for fuse links size
5 x 20 mm

 Rated current
6.3 A

Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm	Connections
250 V	199 018	Printed circuit board	22.5	1.5	Solder


**Cover
199 019**

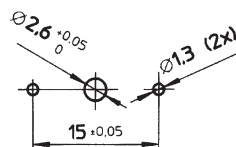
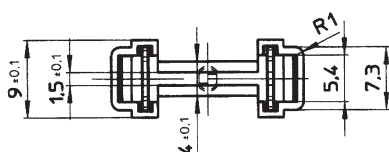
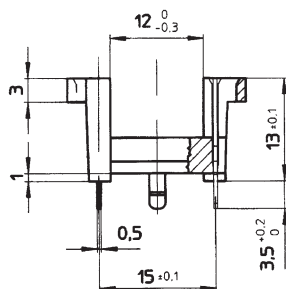
for fuse holder 199 018



Fuse holder
 for fuse links size
5 x 20 mm

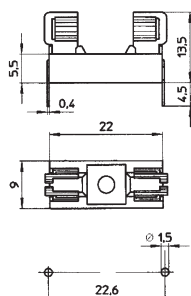
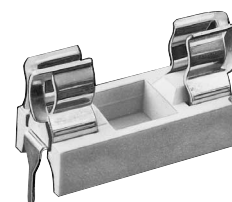
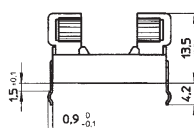
 Rated current
6.3 A

Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm	Connections
250 V	199 060	Printed circuit board	15	1.3 / 2.6	Solder or plug

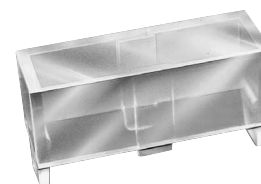
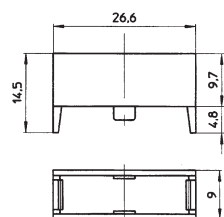
**Fuse holder**
 for fuse links size
5 x 20 mm

 Rated current
6.3 A

Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm	Connections
250 V	199 015	Printed circuit board	22.5	1.5	Solder
250 V	199 015 A	Printed circuit board	22.5	1.5	Solder

199 015**199 015 A**
Cover
199 016

for fuse holders 199 015 / 199 015 A

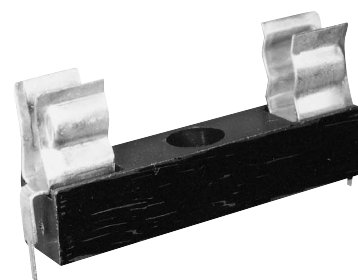
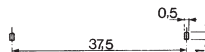
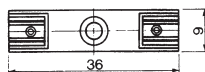
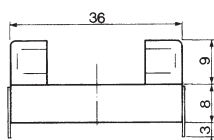


**Fuse holder
(Fuse blocks)**

 for fuse links size
6.3 x 32 mm

 Rated current
10 A

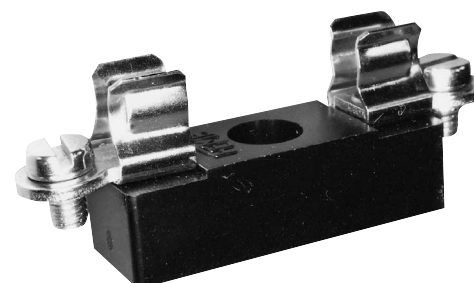
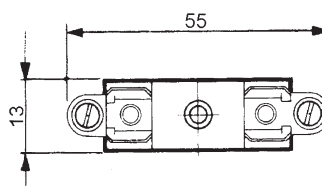
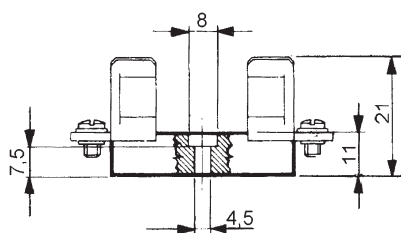
Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm
250 V	199 022	Printed circuit board	37.5	0.5 x 1


**Fuse holder
(Fuse blocks)**

 for fuse links size
6.3 x 32 mm

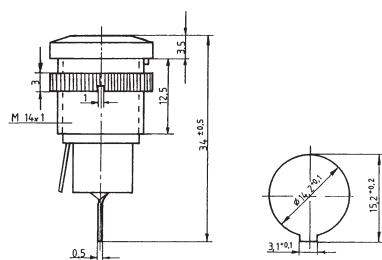
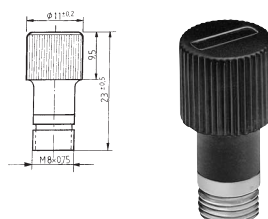
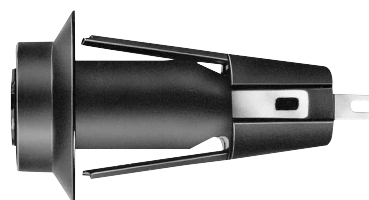
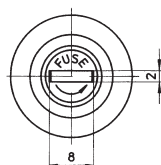
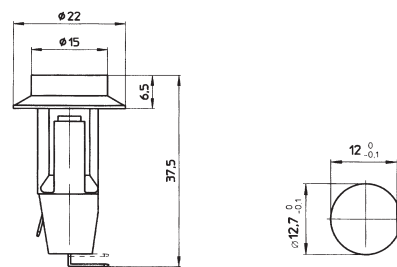
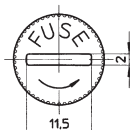
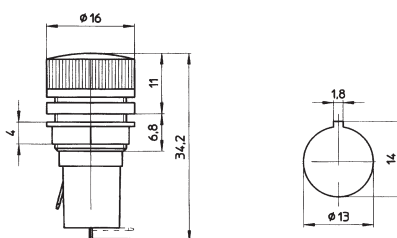
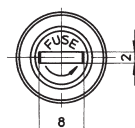
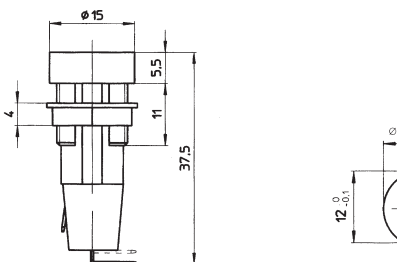
 Rated current
25 A

Rated Voltage AC	Part No.	Mounting	connections
500 V	199 037	Printed circuit board, screw or rivet	screw



**Fuse holders
(Screw cap)**for fuse links size
5 x 20 mmRated current
6.3 AProtection class
IP 40

Rated Voltage AC	Part No.	Mounting	Hole Ø mm	Connections
250 V	191 100	Panel, locating lug, locknut M 14 x 1	14.2 + 0.1	Solder or plug
250 V	197 100	Panel, locating lug, locknut M 14 x 1	14.2 + 0.1	Solder or plug
250 V	199 040	Panel, with flat as shown, snap-in	12.7	Solder or plug
250 V	199 030	Panel, locating lug, locknut SW 14	13	Solder or plug
250 V	199 035	Panel, with flat as shown, locknut SW 14	12.7	Solder or plug

191 100**197 100****199 040****199 030****199 035**

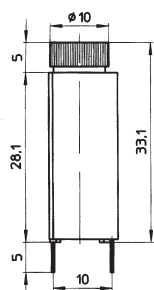
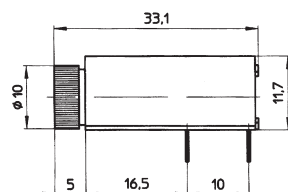
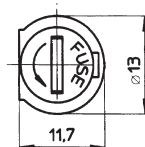
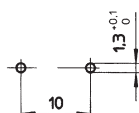
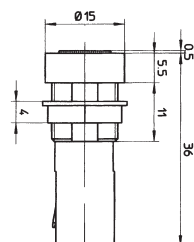
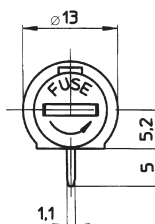
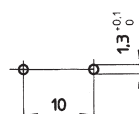
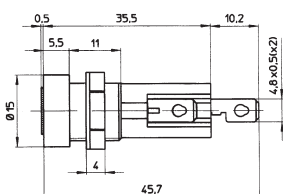
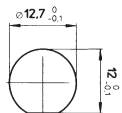
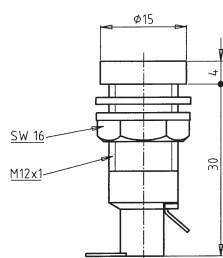
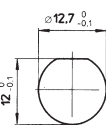
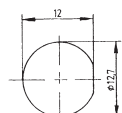
**Fuse holder
(Bayonet cap)**

 for fuse links size
5 x 20 mm

 Rated current
6.3 A

 Protection class
IP 40

Rated Voltage AC	Part No.	Mounting	Pin distance mm	Hole Ø mm	Connections
250 V	199 045	Printed circuit board, vertical mounting	10	1.3 + 0.1	Solder
250 V	199 050	Printed circuit board, horizontal mounting	10	1.3 + 0.1	Solder
250 V	199 055	Panel, with flat as shown, locknut SW 14		12.7	Solder or plug
250 V	199 070	Panel, with flat as shown, locknut SW 14		12.7	Solder or plug
250 V	199 090	Panel, with flat as shown, locknut SW 16		12.7	Solder or plug

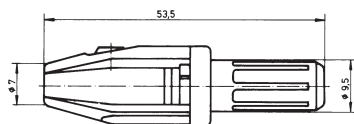
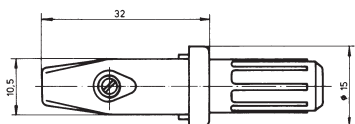

199 035

199 035

199 035

199 035

199 035


Fuse holder

for fuse links size
5 x 20 mm

Rated current
6.3 A

Rated Voltage AC	Part No.	Mounting	Connections
42 V	199 081	In-line fuse holder, bayonet locking	Solder or screw



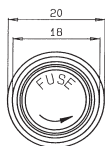
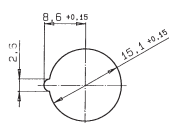
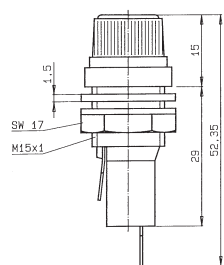
Fuse holder (Screw cap)

for fuse links size
6.3 x 32 mm

Rated current
15 A

Protection class
IP 40

Rated Voltage AC	Part No.	Mounting	Hole Ø mm	Connections
250 V	199 043	Panel, locating lug, locknut SW 17	15.1	Solder or plug



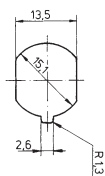
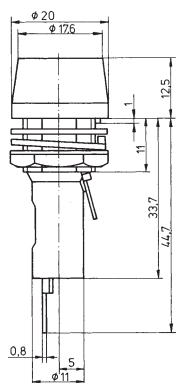
Fuse holder
Screw cap

for fuse links size
6.3 x 32 mm

Rated current
20 A

Protection class
IP 40

Rated Voltage AC	Part No.	Mounting	Hole Ø mm	Connections
250 V	199 052	Panel, locating lug, locknut SW 18	15.1	Solder



D-FUSES

EUROPEAN STANDARD



Voltage rating: AC 400 V – AC 500 V
DC 250 V – DC 500 V

Current rating: 0.5 A to 200 A

Class: gG/gL

Standards: IEC 60 269-3-1
DIN VDE 0636 Part 301
DIN 49515 / 49360 /
49365 / 49522

Systems: ND - AC 500 V - DIN 49360
D - AC 500 V - DIN 49515
DO - AC 400 V - DIN 49522

Features / Benefits

- ▶ Non-interchangeability of fuse-links by garduating the diameter of the bottom contacts, corresponding to the fixed diameter of the gauge piece.

**D FUSES**
EUROPEAN STANDARD**gG****Selection
Guide**

Type	Size	Rated Voltage	Part No.	Selector Guide Page	
ND	E 16	500 V	10 002 01/04	D 3	
D II	E 27	500 V	10 005 04	D 3	
D III	E 33	500 V	10 007 04	D 4	
D IV H	R 1¼"	500 V	10 009 04	D 4	
D V H	R 2"	500 V	10 010 04	D 5	
D 01	E 14	400 V	10 027 04	D 5	
D 02	E 18	400 V	10 028 04	D 6	
D 03	M 30x2	400 V	10 029 04	D 6	

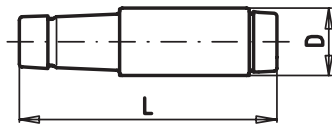


D FUSES
EUROPEAN STANDARD

gL

Type ND	Rated voltage AC 500 V	Size E 16	Standard DIN 49360
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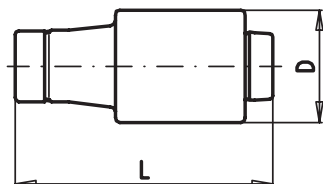
Rated current	Part No. fast acting	Part No. time lag	Weight (kg/100)	Pack
0.5 A	10 002 01	10 002 04	1.4	50
1 A	10 002 01	10 002 04	1.4	50
2 A	10 002 01	10 002 04	1.4	50
4 A	10 002 01	10 002 04	1.4	50
6 A	10 002 01	10 002 04	1.4	50
10 A	10 002 01	10 002 04	1.4	50
16 A	10 002 01	10 002 04	1.4	50
20 A	10 002 01	10 002 04	1.4	50
25 A	10 002 01	10 002 04	1.4	50



D 0.50" (12.5 mm)
L 1.97" (50 mm)

Type D II	Rated voltage AC 500 V	Size E 27	Standard DIN 49515
---------------------	----------------------------------	---------------------	------------------------------

Rated current	Part No.	Weight (kg/100)	Pack
0.5 A	10 005 04	3.1	25
1 A	10 005 04	3.1	25
1.6 A	10 005 04	3.1	25
2 A	10 005 04	3.1	25
4 A	10 005 04	3.1	25
6 A	10 005 04	3.1	25
10 A	10 005 04	3.1	25
16 A	10 005 04	3.1	25
20 A	10 005 04	3.1	25
25 A	10 005 04	3.1	25



D 0.87" (22 mm)
L 1.97" (50 mm)

D

SIBA
FUSES


D FUSES

EUROPEAN STANDARD

gL

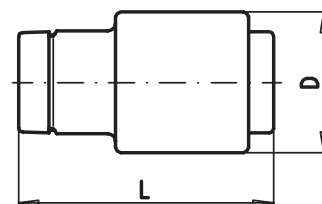
Type
D III

Rated voltage
AC 500 V

Size
E 33

Standard
DIN 49515

Rated current	Part No.	Weight (kg/100)	Pack
35 A	10 007 04	5.3	25
50 A	10 007 04	5.3	25
63 A	10 007 04	5.3	25


D 1.06" (27 mm)

L 1.97" (50 mm)

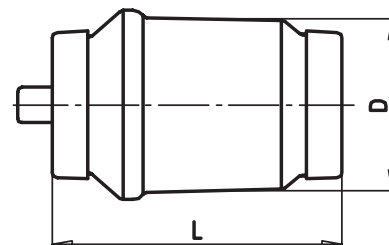
Type
D IV H

Rated voltage
AC 500 V

Size
R 1¼"

Standard
DIN 49515

Rated current	Part No.	Weight (kg/100)	Pack
80 A	10 009 04	11.4	10
100 A	10 009 04	11.4	10


D 1.30" (33 mm)

L 1.97" (50 mm)

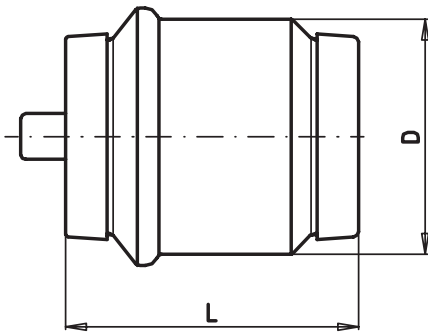


D FUSES
EUROPEAN STANDARD

gL

Type	Rated voltage	Size	Standard
D V H	AC 500 V	R 2"	DIN 49515

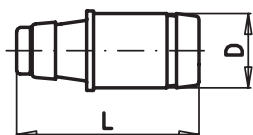
Rated current	Part No.	Weight (kg/100)	Pack
125 A	10 010 04	23.1	10
160 A	10 010 04	23.1	10
200 A	10 010 04	23.1	10



D	1.80" (46 mm)
L	1.97" (50 mm)

Type	Rated voltage	Size	Standard
D 01	AC 400 V	E 14	DIN 49522

Rated current	Part No.	Weight (kg/100)	Pack
1 A	10 027 04	0.62	50
2 A	10 027 04	0.62	50
4 A	10 027 04	0.62	50
6 A	10 027 04	0.62	50
10 A	10 027 04	0.62	50
16 A	10 027 04	0.62	50



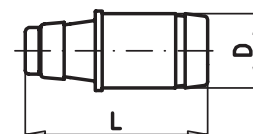
D	0.43" (11 mm)
L	1.42" (36 mm)

D**D FUSES**

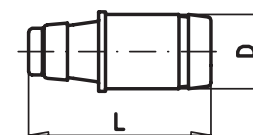
EUROPEAN STANDARD

gL
Type
D 02
Rated voltage
AC 400 V
Size
E 18
Standard
DIN 49522

Rated current	Part No.	Weight (kg/100)	Pack	
20 A	10 028 04	1.4	50	
25 A	10 028 04	1.4	50	
35 A	10 028 04	1.4	50	
50 A	10 028 04	1.4	50	
63 A	10 028 04	1.4	50	

**D** 0.60" (15.3 mm)**L** 1.42" (36 mm)
Type
D 03
Rated voltage
AC 400 V
Size
M 30x2
Standard
DIN 49522

Rated current	Part No.	Weight (kg/100)	Pack	
80 A	10 029 04	4.2	10	
100 A	10 029 04	4.2	10	

**D** 0.90" (22.5 mm)**L** 1.70" (43 mm)





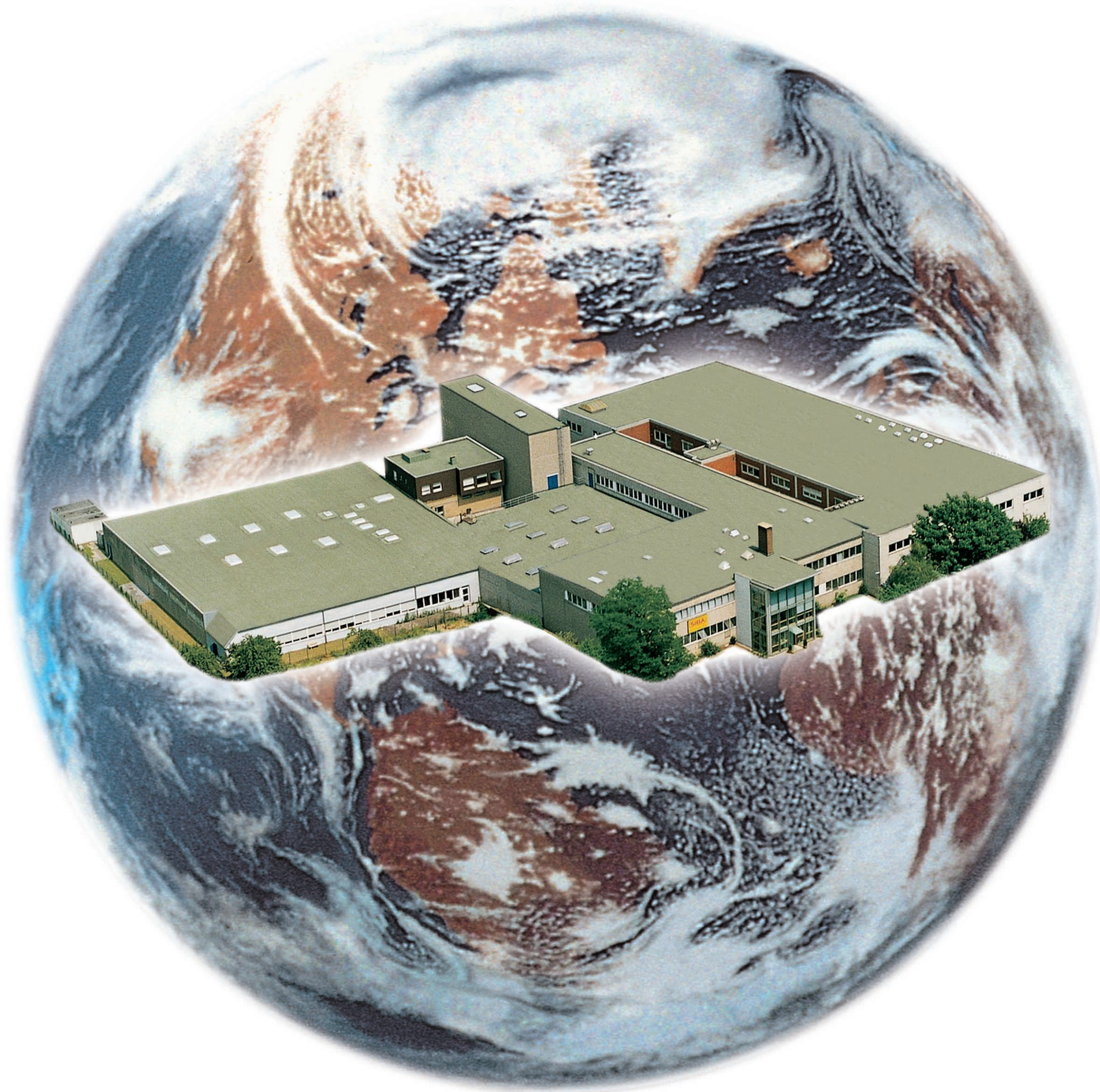




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10 002 01/04	D 3	189 000	G 24	20 009 04	URM 16	20 384 04	URM 19
10 002 07	URD 3	189 020	G 25	20 010 04	URM 17	20 386 03	NH 16
10 005 04	D 3	189 100	G 27	20 011 04	URM 18	20 386 08	NH 21
10 005 07	URD 4	189 140	G 28	20 120 13	NH 9	20 389 03	NH 16
10 007 04	D 4	189 500	G 30	20 120 15	NH 23	20 389 08	NH 21
10 007 07	URD 5	191 100	G 52	20 189 04	URB 5	20 404 04	URM 22
10 009 04	D 4	197 100	G 52	20 189 20	URB 5	20 407 04	URM 21
10 009 07	URD 6	199 010	G 49	20 189 21	URB 5	20 412 04	URB 6
10 010 04	D 5	199 015	G 50	20 189 34	URL 10	20 412 20	URB 7
10 010 07	URD 7	199 018	G 49	20 189 41	URB 5	20 412 34	URL 12
10 027 04	D 5	199 020	G 49	20 209 08	NH 17	20 438 13	NH 12
10 027 07	URD 8	199 022	G 51	20 209 13	NH 6	20 439 13	NH 12
10 028 04	D 6	199 030	G 52	20 209 20	URM 11	20 441 13	NH 13
10 028 07	URD 9	199 035	G 52	20 209 34	URL 5	20 442 13	NH 13
10 029 04	D 6	199 037	G 51	20 210 08	NH 17	20 443 13	NH 14
10 029 07	URD 10	199 040	G 52	20 210 13	NH 7	20 452 13	NH 12
157 000	G 4	199 043	G 54	20 211 08	NH 18	20 453 13	NH 12
158 000	G 6	199 045	G 53	20 211 13	NH 7	20 455 13	NH 13
160 000	G 7	199 050	G 53	20 211 20	URM 12	20 456 13	NH 13
164 000	G 8	199 052	G 54	20 211 34	URL 6	20 477 08	NH 17
164 500	G 11	199 055	G 53	20 212 08	NH 18	20 477 13	NH 6
165 000	G 9	199 060	G 50	20 212 13	NH 8	20 477 20	URM 10
166 000	G 10	199 070	G 53	20 212 20	URM 13	20 477 34	URL 4
166 500	G 12	199 073	G 47	20 212 34	URL 7	20 556 04	URDC 14
166 602	G 47	199 081	G 54	20 213 08	NH 19	20 558 04	URB 4
171 100	G 15	199 090	G 53	20 213 13	NH 8	20 558 20	URB 4
171 525	G 38	199 207	G 47	20 213 20	URM 14	20 558 34	URL 11
171 526	G 33	199 429	G 47	20 213 34	URL 8	20 559 21	URE 11
171 530	G 40	199 487	G 47	20 225 08	NH 19	20 560 20	URB 8
172 000	G 16	199 488	G 47	20 225 13	NH 9	20 560 21	URB 8
172 100	G 16	20 000 04	URM 4	20 227 08	NH 19	20 562 20	URB 9
172 200	G 17	20 000 13	NH 6	20 227 13	NH 9	20 610 31	URS 23
172 525	G 39	20 001 04	URM 5	20 228 13	NH 9	20 612 32	URS 24
172 526	G 34	20 001 13	NH 6	20 246 02	NH 24	20 613 31	URS 29
172 530	G 41	20 002 04	URM 6	20 252 34	URL 13	20 615 32	URS 30
173 100	G 19	20 002 13	NH 7	20 253 34	URL 14	20 616 32	URS 6
179 020	G 13	20 003 04	URM 7	20 254 34	URL 15	20 617 31	URS 5
179 021	G 14	20 003 13	NH 7	20 271 34	URL 16	20 618 32	URS 12
179 120	G 18	20 004 04	URM 8	20 274 34	URL 17	20 619 31	URS 11
179 150	G 21	20 004 13	NH 8	20 277 34	URL 18	20 620 31	URS 25
179 200	G 20	20 004 15	NH 22	20 282 04	URB 3	20 622 32	URS 26
179 500	G 22	20 005 04	URM 9	20 282 20	URB 3	20 623 31	URS 31
184 000	G 42	20 005 13	NH 8	20 282 21	URB 3	20 625 32	URS 32
185 000	G 43	20 005 15	NH 22	20 282 34	URL 9	20 626 32	URS 8
186 000	G 45	20 006 13	NH 9	20 282 41	URB 3	20 627 31	URS 7
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20 632 32	URS 28	20 788 32	URS 68	24 158 02	NH 43	30 110 13	HHD 7
20 633 31	URS 33	204 000	G 48	24 159 02	NH 43	30 110 14	HHD 7
20 635 32	URS 34	204 100	G 48	24 160 02	NH 43	30 110 54	HHM 5
20 636 32	URS 10	21 001 01	URL 33	24 176 02	NH 43	30 119 13	HHD 8
20 637 31	URS 9	21 001 01	NH 44	25 001 01	NH 44/45	30 132 36	HHB 3
20 638 32	URS 16	21 001 03	NH 44	25 001 03-2	NH 44	30 135 36	HHB 8
20 639 31	URS 15	21 001 10	URL 33	25 003 01	NH 47	30 137 36	HHB 9
20 660 31	URS 35	21 002 04	NH 46	25 003 01	NH 48	30 141 36	HHB 10
20 661 32	URS 36	21 003 01	URL 34	25 004 01	NH 47	30 144 36	HHB 4
20 663 31	URS 17	21 003 01	NH 47	25 004 01	NH 48	30 145 36	HHB 11
20 664 32	URS 18	21 003 01.26	NH 47	25 005 01	NH 47	30 147 36	HHB 11
20 670 31	URS 37	21 003 03	NH 48	25 006 01	NH 46	30 156 36	HHB 7
20 671 32	URS 38	21 004 01	URL 34	28 001 04	URL 32	30 161 36	HHB 12
20 673 31	URS 19	21 004 01	NH 47	28 001 04	URS 81	30 176 13	HHD 13
20 674 32	URS 20	21 004 01.26	NH 47	28 002 05	URL 32	30 177 13	HHD 13
20 678 32	URS 41	21 004 03	NH 48	30 002 13	HHD 5	30 178 13	HHD 13
20 680 31	URS 39	21 005 01	URL 34	30 004 13	HHD 9	30 178 14	HHD 13
20 681 32	URS 40	21 005 01	NH 47	30 004 93	HHD 21	30 180 13	HHD 15
20 683 31	URS 21	21 005 01.26	NH 47	30 006 13	HHD 16	30 181 13	HHD 18
20 684 32	URS 22	21 006 01	NH 49	30 006 93	HHD 22	30 196 13	HHD 17
20 688 32	URS 42	21 006 05	NH 49	30 008 13	HHD 19	30 196 14	HHD 17
20 713 31	URS 55	21 031 01	NH 50	30 010 13	HHD 5	30 200 54	HHM 5
20 715 32	URS 56	21 120 02	NH 49	30 012 13	HHD 9	30 201 53	HHM 5
20 718 32	URS 44	21 189 01	URL 31	30 012 93	HHD 21	30 202 53	HHM 5
20 719 31	URS 43	21 313 01	URL 29	30 014 13	HHD 16	30 203 13	HHD 17
20 723 31	URS 57	21 313 01	URS 79	30 014 93	HHD 22	30 204 13	HHD 17
20 725 32	URS 58	21 313 02	URL 30	30 016 13	HHD 19	30 211 13	HHD 11
20 728 32	URS 46	21 313 02	URS 80	30 018 13	HHD 5	30 211 14	HHD 11
20 729 31	URS 45	21 323 01	URL 29	30 018 14	HHD 5	30 221 13	HHD 12
20 733 31	URS 59	21 323 01	URS 79	30 020 13	HHD 9	30 222 13	HHD 12
20 735 32	URS 60	21 323 02	URL 30	30 020 14	HHD 9	30 225 13	HHD 15
20 738 32	URS 48	21 323 02	URS 80	30 020 93	HHD 21	30 231 13	HHD 14
20 739 31	URS 47	21 386 01	NH 50	30 022 13	HHD 16	30 232 13	HHD 14
20 760 31	URS 61	21 389 01	NH 50	30 022 93	HHD 22	30 233 13	HHD 14
20 761 32	URS 62	22 001 02	NH 51	30 024 13	HHD 19	30 234 36	HHB 3
20 763 31	URS 49	22 001 05	NH 51	30 098 13	HHD 6	30 237 36	HHB 5
20 764 32	URS 50	22 031 01	NH 51	30 099 13	HHD 6	30 241 36	HHB 8
20 770 31	URS 63	22 120 01	NH 51	30 100 13	HHD 6	30 242 36	HHB 9
20 771 32	URS 64	24 001 02	NH 43	30 100 14	HHD 6	30 243 36	HHB 10
20 773 31	URS 51	24 002 02	NH 43	30 101 13	HHD 10	30 244 36	HHB 12
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20 778 32	URS 67	24 004 02	NH 43	30 103 13	HHD 10	30 247 36	HHB 15
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30 271 56	HHM 4	50 060 06	URZ 12	51 060 04.3S	URZ 37	90 082 10	URDC 7
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30 310 11	HHO 3	50 073 06	URE 8	51 060 04.S	URL 35	90 092 10	URDC 10
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30 311 91	HHO 3	50 075 06	URE 10	51 063 04	URL 35	90 210 20	URDC 12
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30 349 21	HHC 3	50 124 06	URZ 9	51 063 04.3	URZ 37		
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30 352 21	HHC 4	50 126 06	URZ 9	51 063 04.3L	URL 35		
30 353 21	HHC 4	50 140 06	URZ 12	51 063 04.DC	URZ 37		
30 354 21	HHC 5	50 140 34	URZ 13	51 063 04.L	URZ 37		
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31 003 02	HHD 40	50 201 06	URDC 3	61 001 01.2	URZ 35		
31 003 02.20	HHD 46	50 201 06	URZ 11	61 002 01.3	URZ 35		
31 004 01	HHD 41	51 058 04	URZ 37	61 004 01.3	URZ 35		
31 005 02	HHD 40	51 058 04	URL 35	61 017 01.2	URZ 35		
31 006 01	HHD 41	51 058 04.2	URZ 37	70 001 40	URZ 4		
31 007 02	HHD 40	51 058 04.2	URL 35	70 001 40	G 23		
31 008 01	HHD 41	51 058 04.2S	URZ 37	70 007 40	URZ 4		
31 221 01	HHD 40	51 058 04.3	URZ 37	70 014 07	G 36		
33 004 01	HHD 47	51 058 04.3	URL 35	70 012 05	G 36		
33 006 01	HHD 47	51 058 04.3S	URZ 37	70 016 07	G 35		
33 008 01	HHD 47	51 058 04.3S	URL 35	70 017 07	G 35		
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FUSES

SIBA L.L.C.

105 Dorsa Avenue · Wayne, New Jersey 07470-8107

Phone (973) 6 86 38 73 · Fax (973) 6 86 02 70

info@sibafuses.com · www.sibafuses.com

SIBA Sicherungen-Bau GmbH

Borker Straße 22 · 44534 Lünen, Germany

Phone +49 (2306) 70 01-0 · Fax +49 (2306) 70 01-67

info@siba.de · www.siba.de