

# RAPIDPLUS

HIGH SPEED FUSE LINKS FOR SEMICONDUCTORS



03

**gR**  
CYL  
fuse links



04

**aR**  
CYL  
fuse links



05

**gS**  
NH  
fuse links



07

**aR**  
NH  
fuse links

**CYL** | **gR**  
**CYLINDRICAL**  
fuse links

RAPIDPLUS gR fuse links are capable of clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation. Typical application comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives (AC and DC), soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices. UL certification according to UL248 standard. UL file Nr. E477155.



10x38

U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @440V DC

STANDARDS

In (A)	REFERENCE		PACKING Uni /BOX
	WITHOUT STRIKER	WITH STRIKER	
1	<b>492000</b>		10/100
2	<b>492001</b>		10/100
3	<b>492002</b>		10/100
4	<b>492003</b>		10/100
6	<b>492004</b>		10/100
8	<b>492005</b>		10/100
10	<b>492006</b>		10/100
12	<b>492007</b>		10/100
16	<b>492008</b>		10/100
20	<b>492009</b>		10/100
25	<b>492010</b>		10/100
32	<b>492011</b>		10/100



14x51

U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @440V DC

STANDARDS

4	<b>492014</b>		10/50
6	<b>492015</b>		10/50
8	<b>492016</b>	<b>492116</b>	10/50
10	<b>492017</b>	<b>492117</b>	10/50
12	<b>492018</b>	<b>492118</b>	10/50
16	<b>492019</b>	<b>492119</b>	10/50
20	<b>492020</b>	<b>492120</b>	10/50
25	<b>492021</b>	<b>492121</b>	10/50
32	<b>492022</b>	<b>492122</b>	10/50
40	<b>492023</b>	<b>492123</b>	10/50
50	<b>492024</b>	<b>492124</b>	10/50



22x58

U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @440V DC

STANDARDS

20	<b>492033</b>	<b>492133</b>	10/50
25	<b>492034</b>	<b>492134</b>	10/50
32	<b>492035</b>	<b>492135</b>	10/50
40	<b>492036</b>	<b>492136</b>	10/50
50	<b>492037</b>	<b>492137</b>	10/50
63	<b>492038</b>	<b>492138</b>	10/50
80	<b>492039</b>	<b>492139</b>	10/50
100	<b>492040</b>	<b>492140</b>	10/50



**STANDARDS**

IEC/EN 60269-1  
IEC/EN 60269-6  
UL 248-1  
UL 248-13

**DIMENSIONS**

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**t-I | CUT-OFF CHARACTERISTICS**

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**USE IN PMX MODULAR FUSE HOLDERS**

PAGE 37





## aR CYLINDRICAL fuse links

RAPIDPLUS aR fuse links are intended for clearing short-circuits and have been designed and manufactured to have very low  $I^2t$  values as well as reduced arc voltages that guarantee an optimum protection of semiconductors. They have a very good cycling ability. Made of ceramic tubes with high withstand to internal pressure and thermal shock, and silver plated copper contacts. Typical applications comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives (AC and DC), soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices. UL certification according to UL248 standard. UL file Nr. E477155.



U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @700V DC

STANDARDS

In (A)	REFERENCE		PACKING Uni /BOX
	WITHOUT STRIKER	WITH STRIKER	
1	<b>491105</b>		10/100
2	<b>491107</b>		10/100
3	<b>491100</b>		10/100
4	<b>491113</b>		10/100
6	<b>491115</b>		10/100
8	<b>491120</b>		10/100
10	<b>491125</b>		10/100
12	<b>491130</b>		10/100
16	<b>491135</b>		10/100
20	<b>491140</b>		10/100
25	<b>491145</b>		10/100
32	<b>491155</b>		10/100



U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @700V DC

STANDARDS

4	<b>491215</b>		10/50
6	<b>491225</b>		10/50
8	<b>491230</b>	<b>491730</b>	10/50
10	<b>491235</b>	<b>491735</b>	10/50
12	<b>491237</b>	<b>491737</b>	10/50
16	<b>491241</b>	<b>491741</b>	10/50
20	<b>491245</b>	<b>491745</b>	10/50
25	<b>491250</b>	<b>491750</b>	10/50
32	<b>491260</b>	<b>491760</b>	10/50
40	<b>491265</b>	<b>491765</b>	10/50
50	<b>491270</b>	<b>491770</b>	10/50



U **690V AC**

BREAKING CAPACITY **200kA**  
30kA @700V DC

STANDARDS

20	<b>491300</b>	<b>491800</b>	10/50
25	<b>491305</b>	<b>491805</b>	10/50
32	<b>491310</b>	<b>491810</b>	10/50
40	<b>491315</b>	<b>491815</b>	10/50
50	<b>491320</b>	<b>491820</b>	10/50
63	<b>491325</b>	<b>491825</b>	10/50
80	<b>491330</b>	<b>491830</b>	10/50
100	<b>491335</b>	<b>491835</b>	10/50



### STANDARDS

IEC/EN 60269-1  
IEC/EN 60269-6  
UL 248-1  
UL 248-13

### DIMENSIONS

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### t-I | CUT-OFF CHARACTERISTICS

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### USE IN PMX MODULAR FUSE HOLDERS

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gS  
NH  
fuse links

RAPIDPLUS NH gS fuse links are capable of clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation. They are optimized to have reduced power dissipations that allow the utilization of a wide range of fuse-bases and fuse-switch disconnectors. RAPIDPLUS NH gS range comprise five sizes NH000, NH00, NH1, NH2 and NH3 with rated currents between 20A and 630A and a rated voltage of 690V AC. Typical application comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices.



U **690V AC**

BREAKING CAPACITY **100kA**  
30kA @440V DC

**I<sub>n</sub>**  
(A)

**REFERENCE**

**PACKING**  
Uni /BOX

20	<b>371025</b>	3/90
25	<b>371030</b>	3/90
32	<b>371035</b>	3/90
40	<b>371045</b>	3/90
50	<b>371050</b>	3/90
63	<b>371055</b>	3/90
80	<b>371060</b>	3/90
100	<b>371065</b>	3/90



U **690V AC**

BREAKING CAPACITY **100kA**  
30kA @440V DC

125  
160

**371070**  
**371075**

3/60  
3/60



U **690V AC**

BREAKING CAPACITY **100kA**  
30kA @550V DC

125  
160  
200  
250  
280

**371250**  
**371255**  
**371260**  
**371270**  
**371273**

3/30  
3/30  
3/30  
3/30  
3/30



**STANDARDS**

IEC/EN 60269-1  
IEC/EN 60269-4

**DIMENSIONS**

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**t-I | CUT-OFF CHARACTERISTICS**

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**NH** | **gS**  
**NH**  
fuse links

RAPIDPLUS gR fuse links are capable of clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation. Typical application comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives (AC and DC), soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices. UL certification according to UL248 standard. UL file Nr. E477155.



**NH2**

U **690V AC**

BREAKING CAPACITY **100kA**  
30kA @650V DC

250	<b>371360</b>	3/18
315	<b>371370</b>	3/18
355	<b>371375</b>	3/18
400	<b>371380</b>	3/18
450	<b>371387</b>	3/18



**NH3**

U **690V AC**

BREAKING CAPACITY **100kA**  
30kA @650V DC

355	<b>371450</b>	1/15
400	<b>371455</b>	1/15
450	<b>371463</b>	1/15
500	<b>371465</b>	1/15
630	<b>371470</b>	1/15



**STANDARDS**

IEC/EN 60269-1  
IEC/EN 60269-4

**DIMENSIONS**

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**t-I | CUT-OFF CHARACTERISTICS**

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**NH** | **aR**  
**NH**  
fuse links

RAPIDPLUS NH aR fuse-links have a very low  $I^2t$  values thanks to the special melting elements design, manufactured with pure silver. The sand is solidified in order to have a good arcing control, high breaking capacity and excellent capability for cyclic loads. These fuse-links have a trip indicator that can be used as a visual indication or can be equipped with a microswitch mounted directly on the fuse-link. Typical application comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect power semiconductor devices.



U **690V AC**

BREAKING CAPACITY **120kA**  
30kA @440V DC

$I_n$ (A)	REFERENCE	PACKING Uni /BOX
16	<b>365020</b>	3/90
20	<b>365025</b>	3/90
25	<b>365030</b>	3/90
32	<b>365035</b>	3/90
40	<b>365045</b>	3/90
50	<b>365050</b>	3/90
63	<b>365055</b>	3/90
80	<b>365060</b>	3/90
100	<b>365065</b>	3/90
125	<b>365070</b>	3/90
160	<b>365075</b>	3/90
200	<b>365080</b>	3/90
250	<b>365085</b>	3/90



U **690V AC**

BREAKING CAPACITY **120kA**  
30kA @550V DC

40	<b>365225</b>	3/30
50	<b>365230</b>	3/30
63	<b>365235</b>	3/30
80	<b>365240</b>	3/30
100	<b>365245</b>	3/30
125	<b>365250</b>	3/30
160	<b>365255</b>	3/30
200	<b>365260</b>	3/30
250	<b>365270</b>	3/30
315	<b>365280</b>	3/30
350	<b>365282</b>	3/30
400	<b>365290</b>	3/30



**STANDARDS**

**IEC/EN 60269-1**  
**IEC/EN 60269-4**

**DIMENSIONS**

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**t-I | CUT-OFF CHARACTERISTICS**

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**FUSE LOAD CONSTANT  $C_L$**

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**NH** | **aR**  
**NH**  
fuse links

RAPIDPLUS NH aR fuse-links have a very low  $I^2t$  values thanks to the special melting elements design, manufactured with pure silver. The sand is solidified in order to have a good arcing control, high breaking capacity and excellent capability for cyclic loads. These fuse-links have a trip indicator that can be used as a visual indication or can be equipped with a microswitch mounted directly on the fuse-link. Typical application comprise protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect power semiconductor devices.

**NH2**

U **690V AC**

BREAKING CAPACITY **120kA**  
30kA @650V DC

200	<b>365350</b>	3/18
250	<b>365360</b>	3/18
315	<b>365370</b>	3/18
350	<b>365372</b>	3/18
400	<b>365380</b>	3/18
450	<b>365387</b>	3/18
500	<b>365390</b>	3/18
550	<b>365392</b>	3/18
630	<b>365395</b>	3/18
700	<b>365397</b>	3/18



**NH3**

U **690V AC**

BREAKING CAPACITY **120kA**  
30kA @650V DC

500	<b>365465</b>	1/15
550	<b>365467</b>	1/15
630	<b>365470</b>	1/15
700	<b>365472</b>	1/15
800	<b>365475</b>	1/15
900	<b>365480</b>	1/15
1000	<b>365485</b>	1/15



**STANDARDS**

IEC/EN 60269-1  
IEC/EN 60269-4

**DIMENSIONS**

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**t-I | CUT-OFF CHARACTERISTICS**

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**FUSE LOAD CONSTANT C<sub>L</sub>**

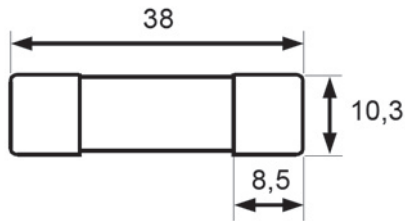
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**CYL** 10x38 | **gR**  
CYLINDRICAL  
fuse links

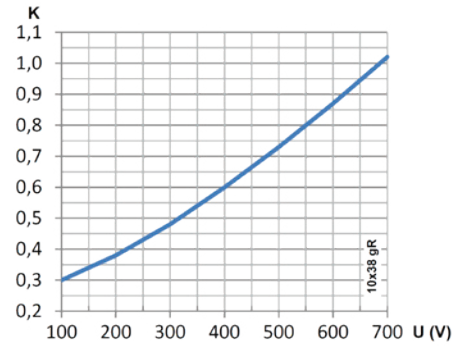
RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	1A...32A	200kA (690V AC)
		30kA (440V DC)



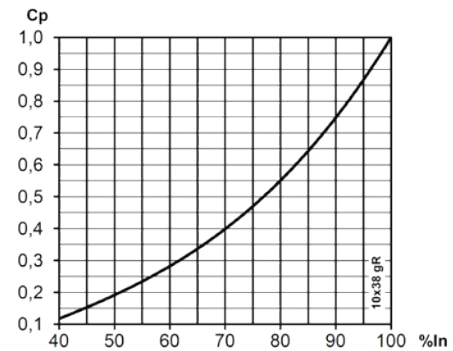
## DIMENSIONS



## I<sup>2</sup>t CORRECTION FACTOR (K)



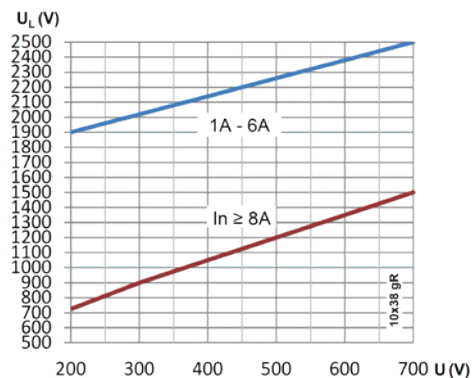
## CORRECTION FACTOR FOR POWER LOSS (Cp)



## POWER DISSIPATION

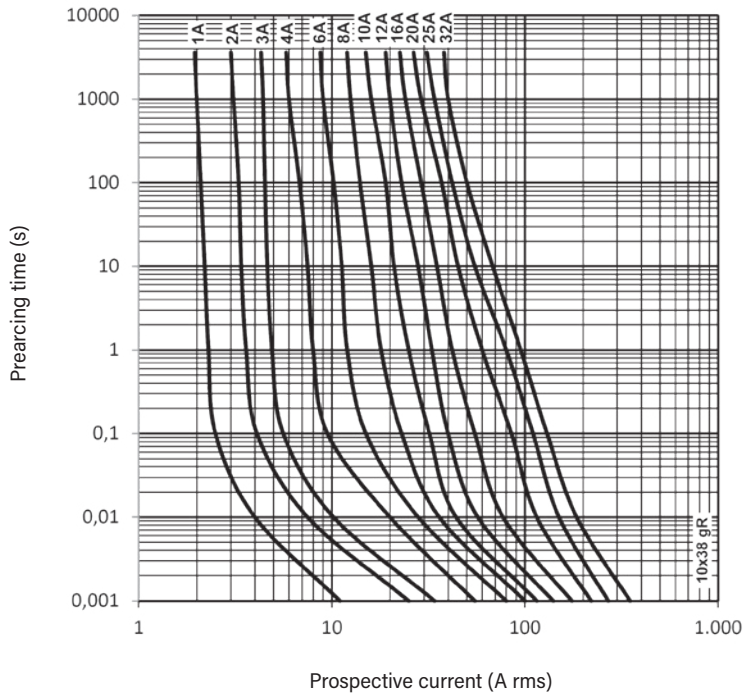
I <sub>n</sub> (A)	I <sup>2</sup> <sub>t</sub> PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> <sub>t</sub> @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
1	0,20	1,2	0,45	0,75
2	0,80	2,6	0,75	1,40
3	2,5	8,0	0,95	1,70
4	5,6	17	1,13	2,05
6	16,0	48	1,56	3,00
8	4,3	38	0,97	1,68
10	6,6	59	1,20	2,09
12	9,6	84	1,69	2,99
16	17,0	150	2,31	4,27
20	23,5	200	2,86	5,35
25	60,2	512	2,94	5,52
32	94,0	800	3,82	7,43

## PEAK ARC VOLTAGE (U<sub>L</sub>)

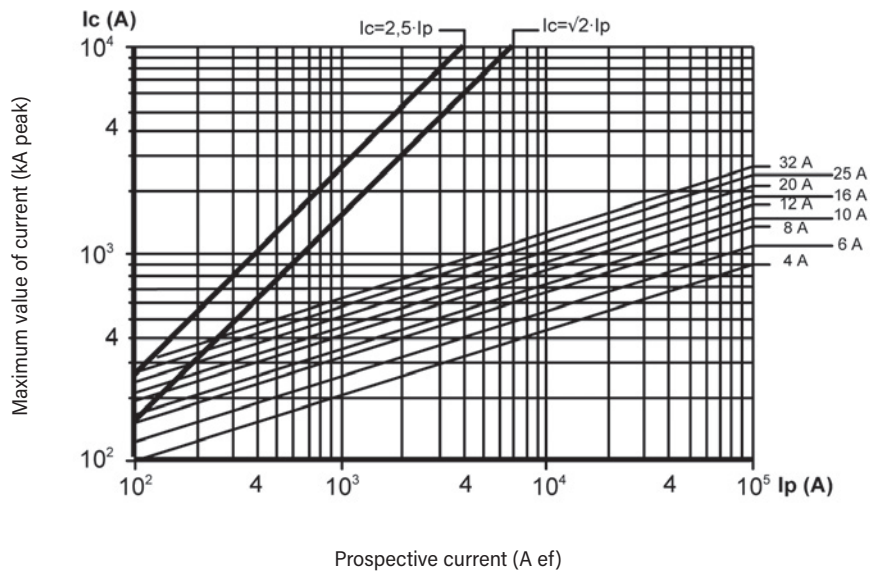


**CYL** **10x38** | **gR**  
**CYLINDRICAL**  
 fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS





CYL

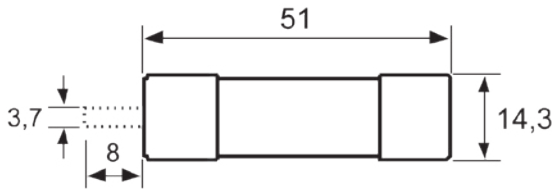
14x51

**gR**  
CYLINDRICAL  
fuse links

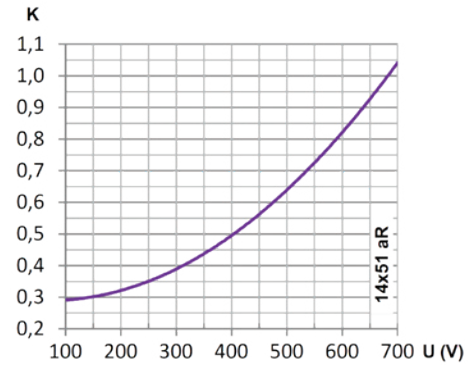
<b>RATED VOLTAGE</b>	<b>RATED CURRENT</b>	<b>BREAKING CAPACITY</b>
690V AC	4A...50A	200kA (690V AC)
		30kA (700V DC)



## DIMENSIONS



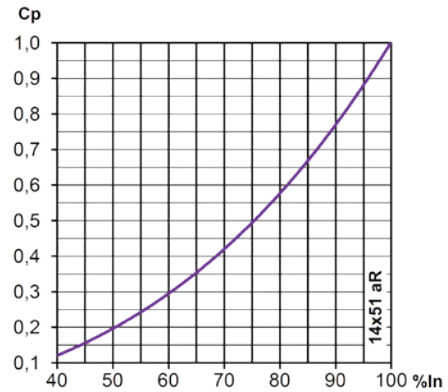
## I<sup>2</sup>t CORRECTION FACTOR (K)



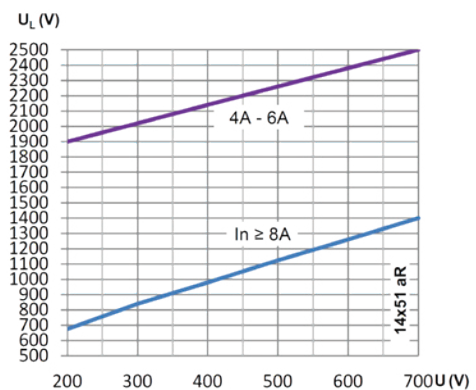
## POWER DISSIPATION

I <sub>n</sub> (A)	I <sup>2</sup> <sub>t</sub> PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> <sub>t</sub> @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
4	5,6	17	1,56	2,94
6	16,0	48	2,25	4,20
8	3,8	30	1,18	2,00
10	5,9	47	1,41	2,52
12	8,4	68	1,95	3,54
16	15	120	2,67	4,83
20	27	170	2,91	5,40
25	53	333	3,38	6,00
32	108	679	3,72	6,93
40	211	1331	4,13	7,52
50	350	2200	5,36	9,80

## CORRECTION FACTOR FOR POWER LOSS (Cp)



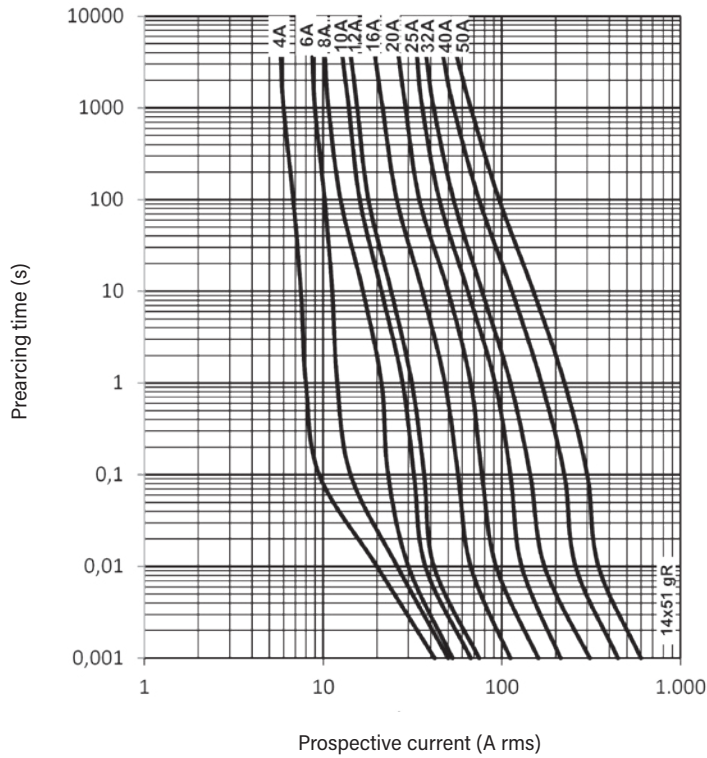
## PEAK ARC VOLTAGE (U<sub>L</sub>)



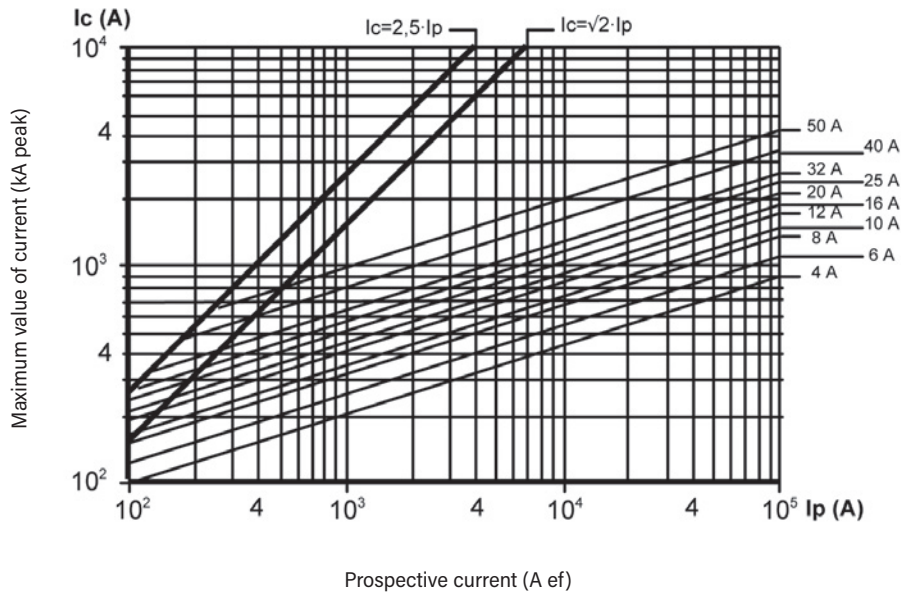


**gR**  
CYLINDRICAL  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



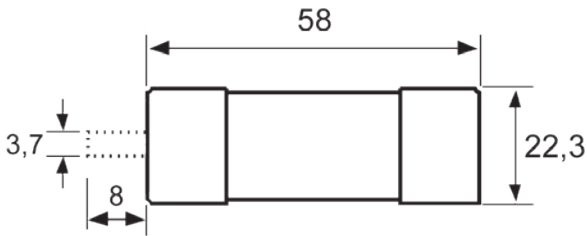


## gR CYLINDRICAL fuse links

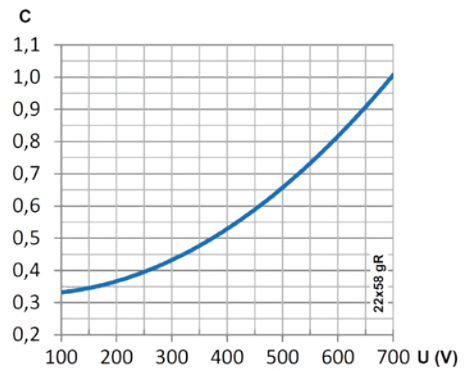
RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	20A...100A	200kA (690V AC)
		30kA (700V DC)



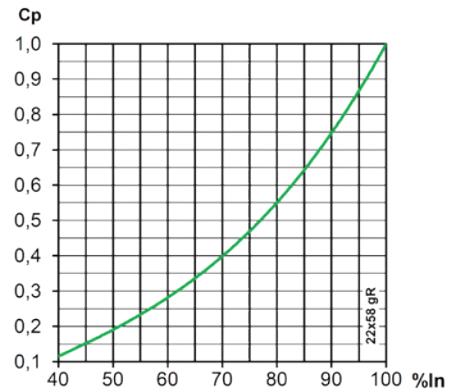
### DIMENSIONS



### I<sup>2</sup>t CORRECTION FACTOR (K)



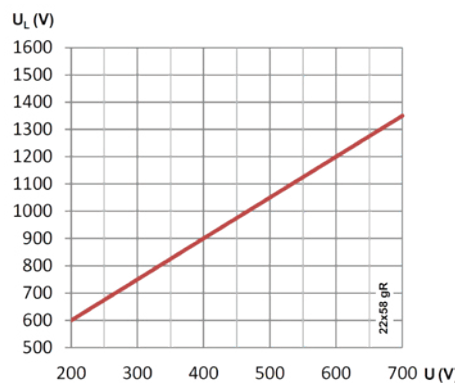
### CORRECTION FACTOR FOR POWER LOSS (Cp)



### POWER DISSIPATION

I <sub>n</sub> (A)	I <sup>2</sup> t PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> t @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
20	19	103	3,00	5,25
25	34	182	3,40	5,85
32	60	324	4,50	8,20
40	94	506	6,10	10,80
50	158	856	7,50	13,70
63	375	2025	7,70	14,00
80	634	3422	9,65	17,60
100	1500	8100	10,30	18,00

### PEAK ARC VOLTAGE (U<sub>L</sub>)

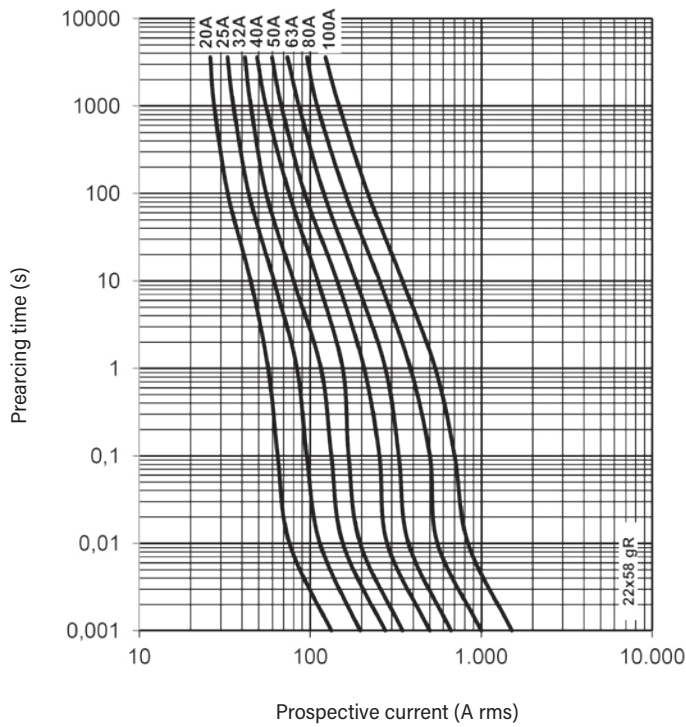




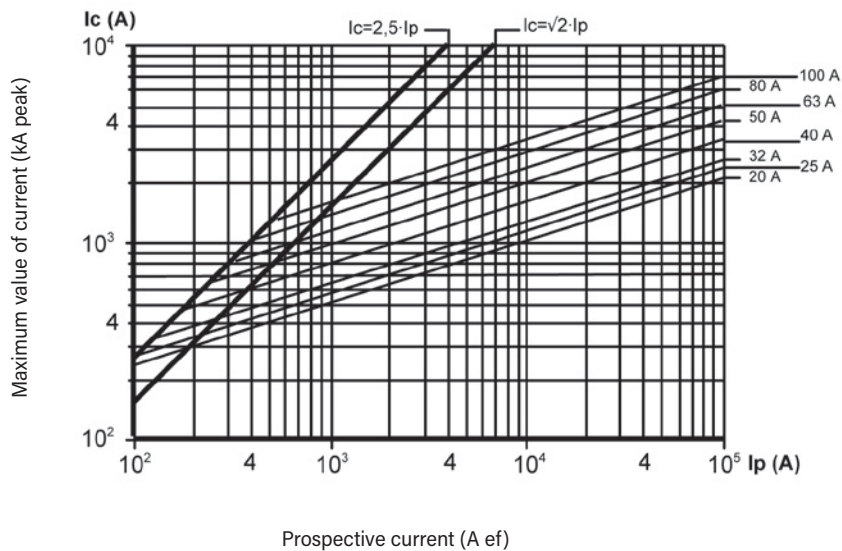


**gR**  
CYLINDRICAL  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS





**aR**  
CYLINDRICAL  
fuse links

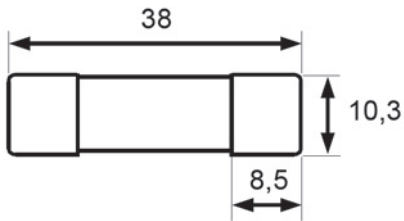
**RATED VOLTAGE**  
690V AC

**RATED CURRENT**  
1A...32A

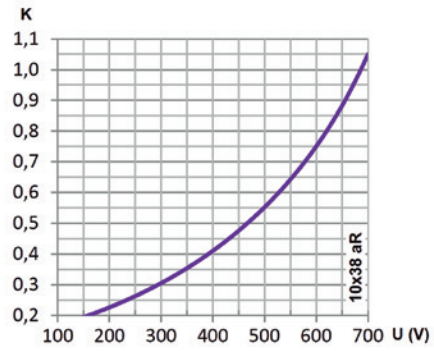
**BREAKING CAPACITY**  
200kA  
(690V AC)  
  
30kA  
(700V DC)



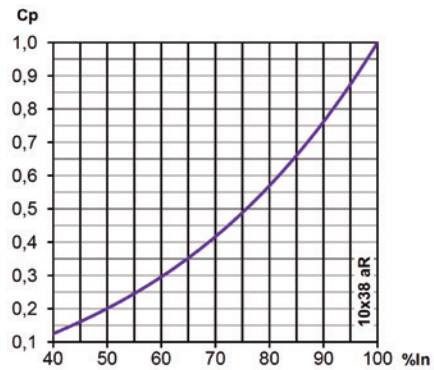
## DIMENSIONS



## I<sup>2</sup>t CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)

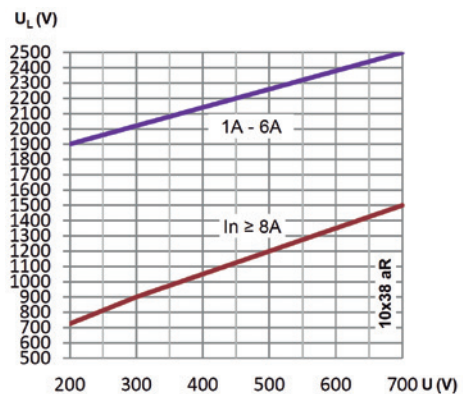


## POWER DISSIPATION

I <sub>n</sub> (A)	I <sup>2</sup> t PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> t @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
1*	0,20	1,2	0,45	0,75
2	0,80	2,6	0,75	1,40
3	2,5	8,0	0,95	1,70
4	4,9	10	0,97	1,69
6	14,0	28	1,4	2,46
8	3,0	24	0,91	1,52
10	4,7	38	1,23	2,07
12	6,8	54	1,53	2,62
16	12,0	96	2,11	3,72
20	18,8	150	2,57	4,50
25	48,0	384	2,60	4,55
32	75,0	600	3,65	6,65

\* not UL certified

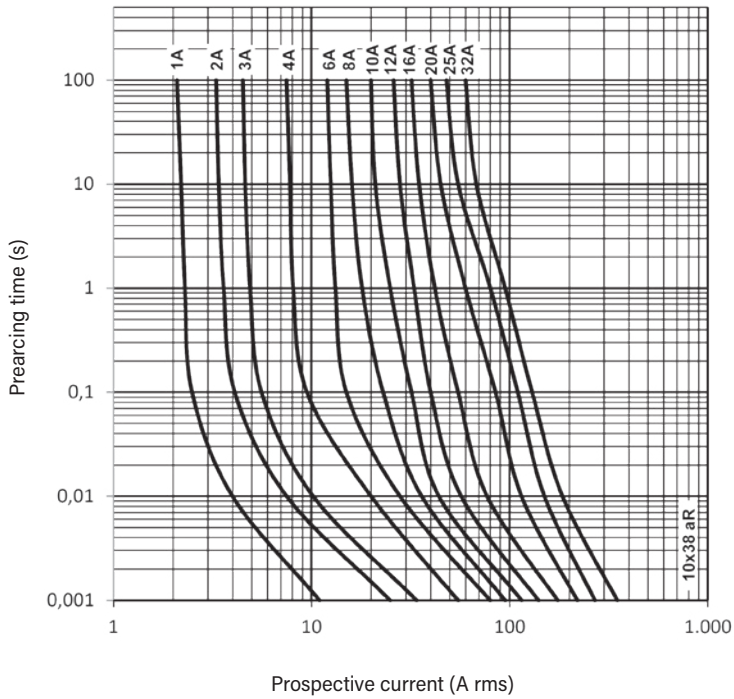
## PEAK ARC VOLTAGE (U<sub>L</sub>)



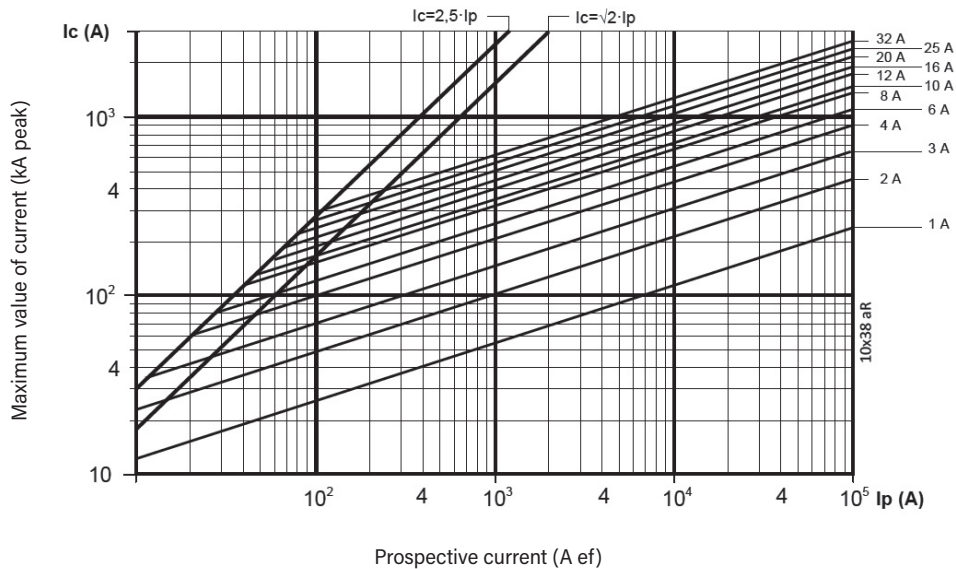


aR  
CYLINDRICAL  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS





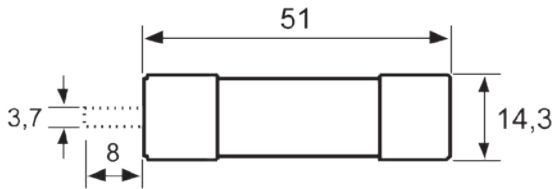


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CYLINDRICAL  
fuse links

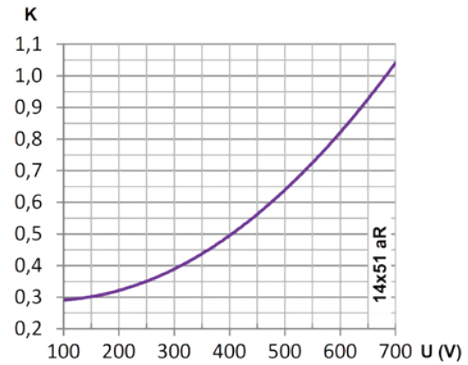
RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	4A...50A	200kA (690V AC)
		30kA (700V DC)



## DIMENSIONS



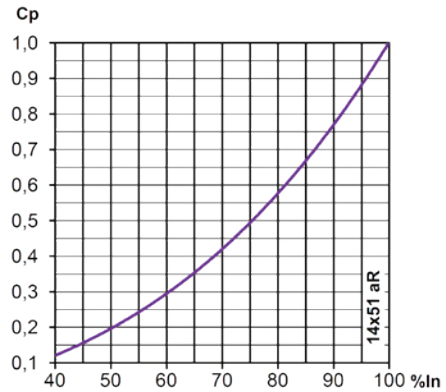
## I<sup>2</sup>t CORRECTION FACTOR (K)



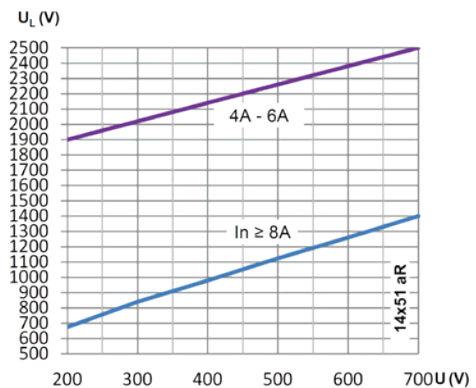
## POWER DISSIPATION

I <sub>n</sub> (A)	I <sup>2</sup> <sub>t</sub> PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> <sub>t</sub> @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
4	5,6	14	1,32	2,28
6	16,0	40	1,80	3,18
8	4,1	23	1,01	1,69
10	6,3	37	1,39	2,36
12	9,1	53	1,63	2,78
16	12,4	72	2,43	4,16
20	20,6	119	3,04	5,43
25	36,6	211	3,75	6,11
32	82,3	475	3,92	7,17
40	146,3	844	4,52	8,15
50	260,0	1500	5,60	10,6

## CORRECTION FACTOR FOR POWER LOSS (C<sub>p</sub>)



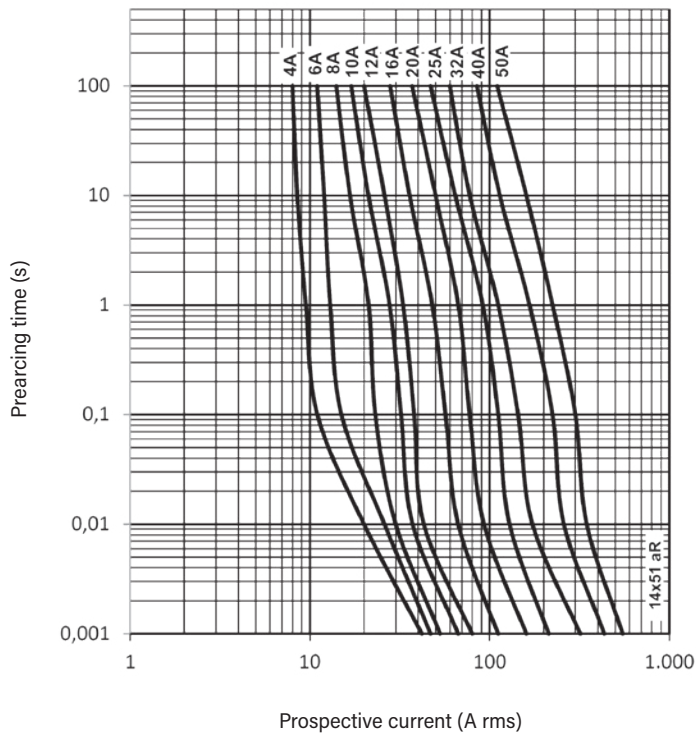
## PEAK ARC VOLTAGE (U<sub>L</sub>)



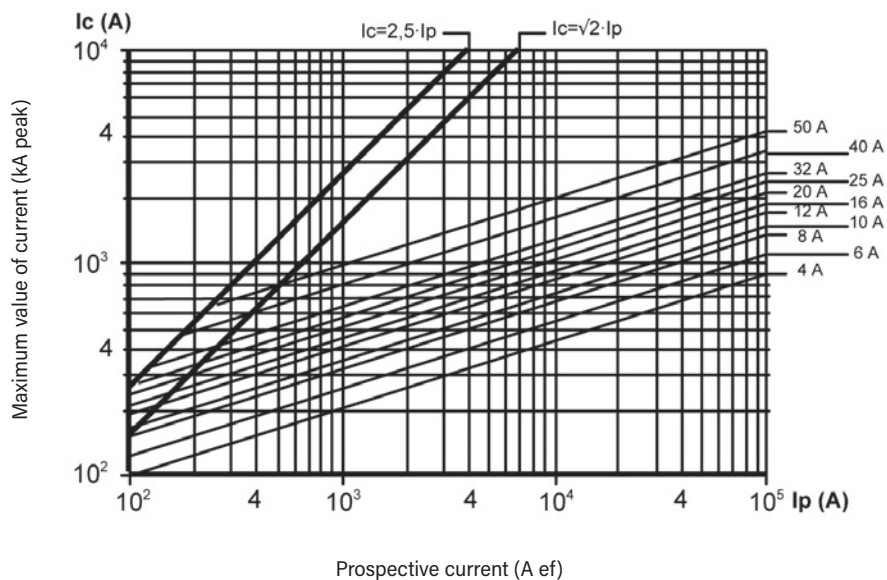


aR  
CYLINDRICAL  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



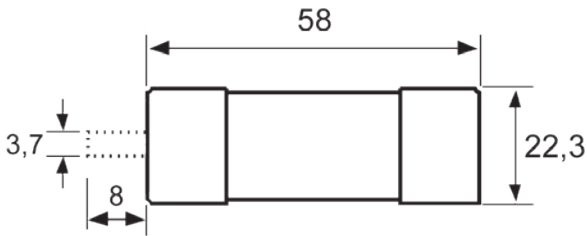


## aR CYLINDRICAL fuse links

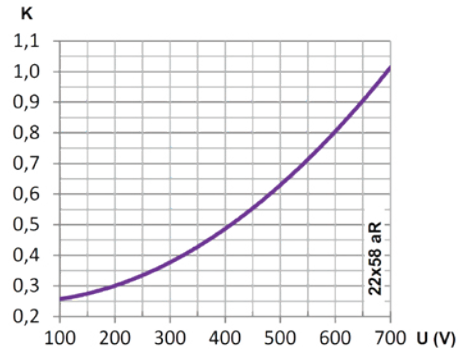
RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	20A...100A	200kA (690V AC)
		30kA (700V DC)



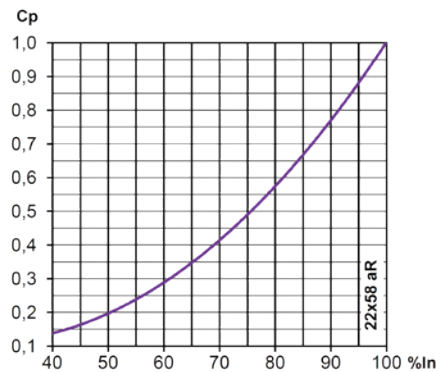
### DIMENSIONS



### I<sup>2</sup>t CORRECTION FACTOR (K)



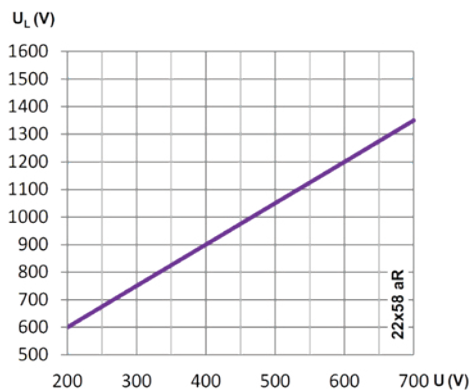
### CORRECTION FACTOR FOR POWER LOSS (Cp)



### POWER DISSIPATION

I <sub>n</sub> (A)	I <sup>2</sup> <sub>t</sub> PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> <sub>t</sub> @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
20	19	103	3,00	5,25
25	34	182	3,40	5,85
32	60	324	4,50	8,20
40	94	506	6,10	10,80
50	158	856	7,50	13,70
63	375	2025	7,70	14,00
80	634	3422	9,65	17,60
100	1500	8100	10,30	18,00

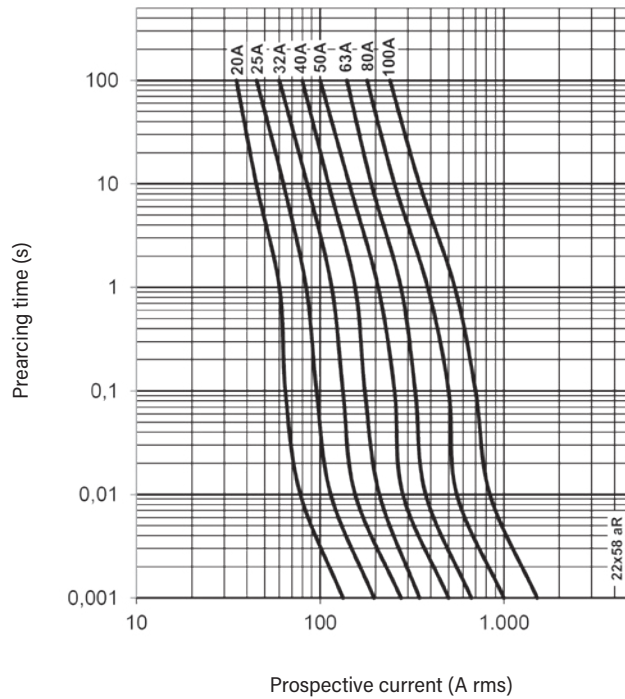
### PEAK ARC VOLTAGE (U<sub>L</sub>)



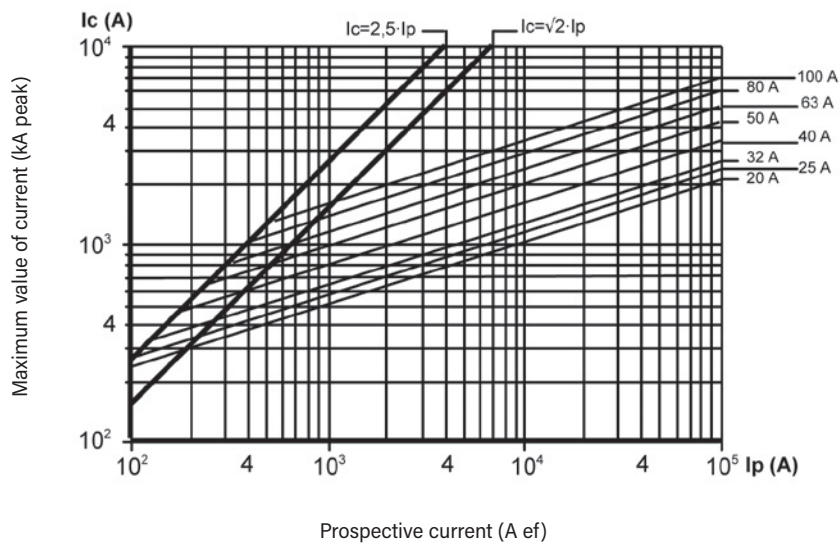


aR  
CYLINDRICAL  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS







**gS**  
**NH**  
fuse links

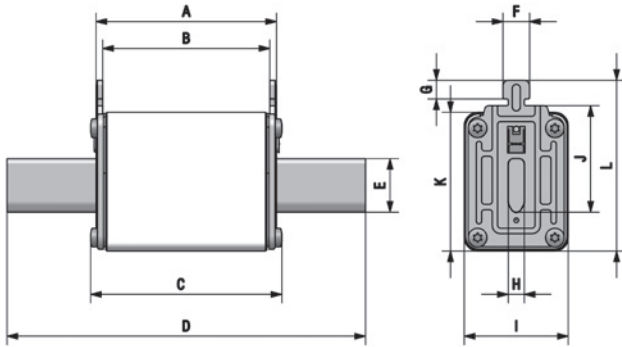
**RATED VOLTAGE**  
690V AC

**RATED CURRENT**  
20A...160A

**BREAKING CAPACITY**  
100kA (690V AC)  
30kA (440V DC)



## DIMENSIONS



	A	B	C	D	E	F	G	H	I	J	K	L
NH000	49	45	52	78,5	15	10	9,5	6	21	35	40	53
NH00*	49	44	52	78,5	15	10	9,5	6	29	35	47	59

\* only available in gS semiconductor fuse links

## POWER DISSIPATION

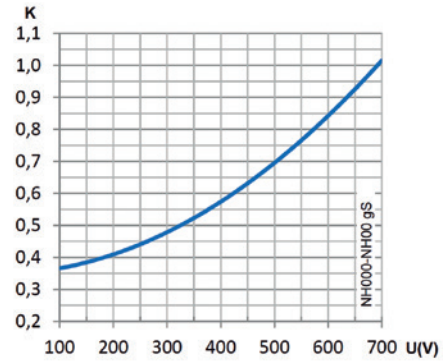
$I_n$	$I_t^2$ PREARcing	OPERATING $I_t^2$	POWER LOSS	POWER LOSS
(A)	(A <sup>2</sup> S)	@690V (A <sup>2</sup> S)	$0,8 \cdot I_n$ (W)	$I_n$ (W)
20	31	116	2,9	5,1
25	49	181	3,2	5,6
32	96	355	3,9	6,6
40	196	724	4,2	7,2
50	331	1.224	5,1	8,5
63	782	2.897	5,3	9,1
80	1.420	5.270	6,3	11,0
100	2.130	7.880	7,6	13,3



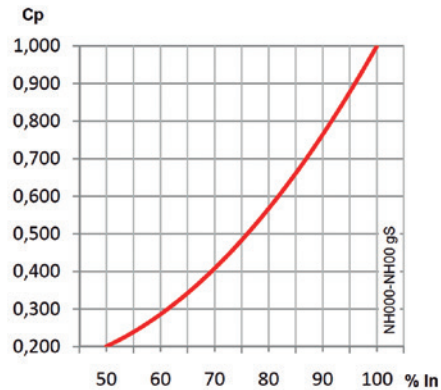
125	3.380	11.550	8,3	14,7
160	6.400	21.840	10,5	18,2



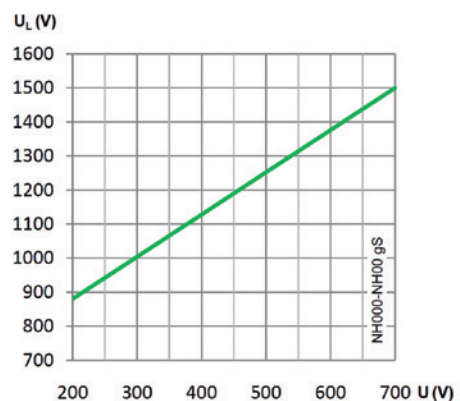
## I<sup>2</sup>t CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)



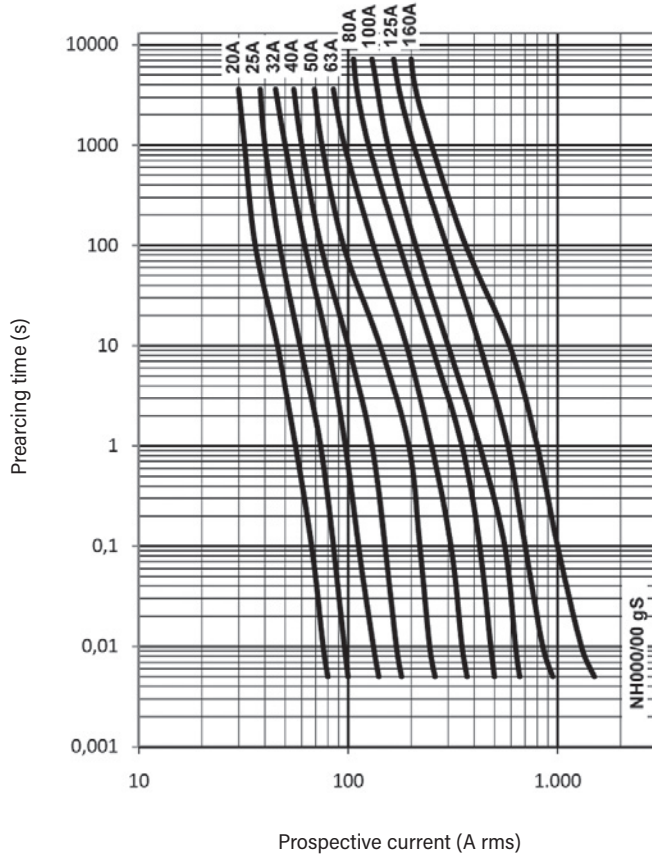
## PEAK ARC VOLTAGE (U<sub>L</sub>)



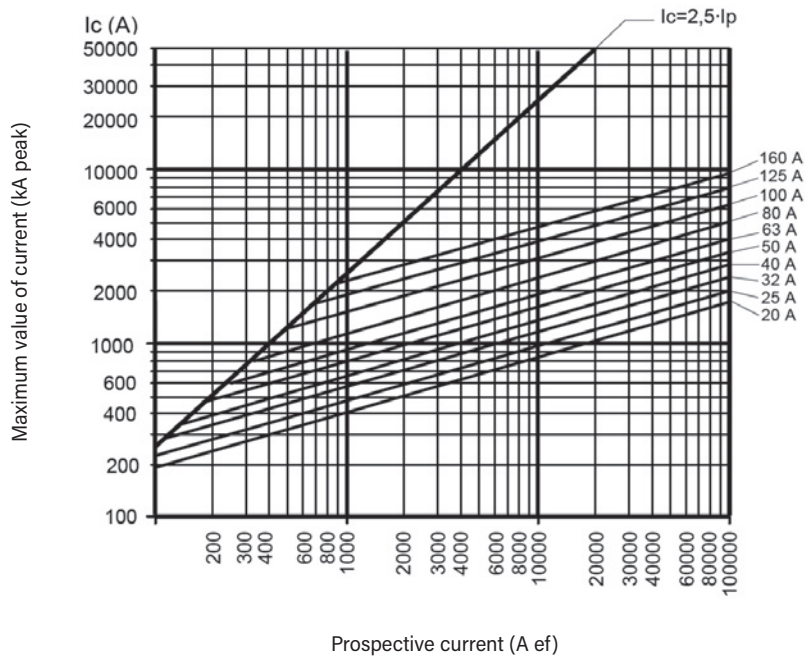


gS  
NH  
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## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



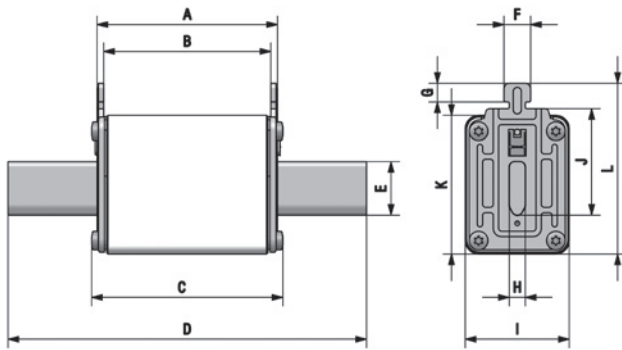


gS  
NH  
fuse links

RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	125A...280A	100kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

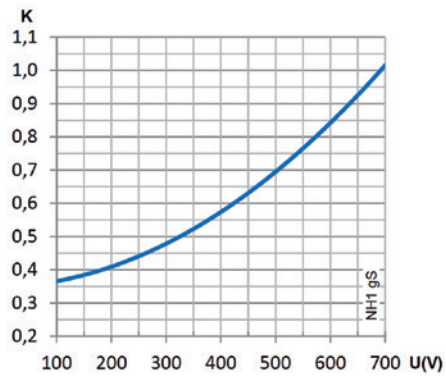


A	B	C	D	E	F	G	H	I	J	K	L
68	62	71,5	135	20	10	9,5	6	39	40	52	64

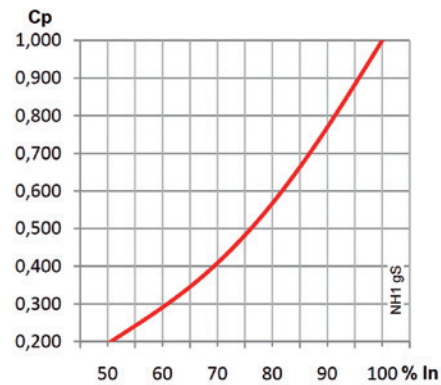
## POWER DISSIPATION

$I_n$	$I^2t$ PREARcing	OPERATING $I^2t$ @690V	POWER LOSS $0.8 \cdot I_n$	POWER LOSS $I_n$
(A)	(A <sup>2</sup> S)	(A <sup>2</sup> S)	(W)	(W)
125	3.800	11.680	10,7	19,7
160	6.290	19.300	14,5	25,3
200	13.120	40.280	16,1	28,6
250	25.160	77.230	19,5	33,2
280	37.590	115.370	20,1	35,7

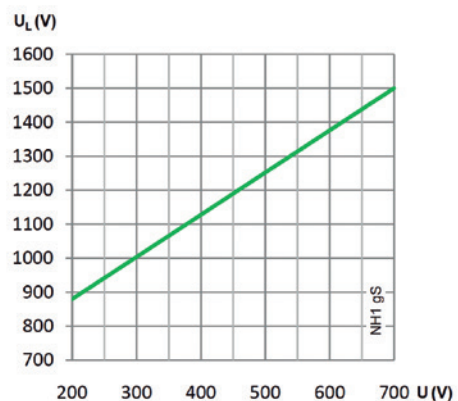
## $I^2t$ CORRECTION FACTOR (K)



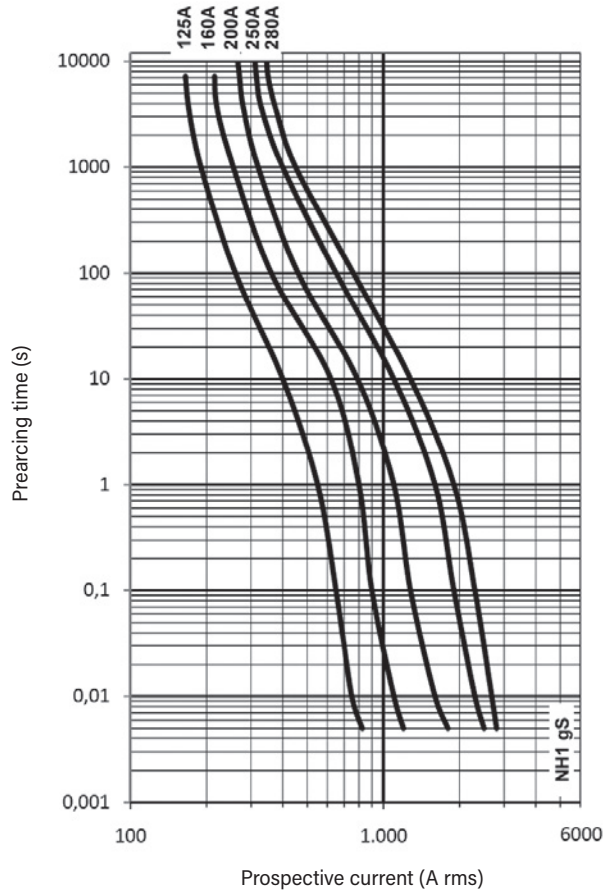
## CORRECTION FACTOR FOR POWER LOSS (Cp)



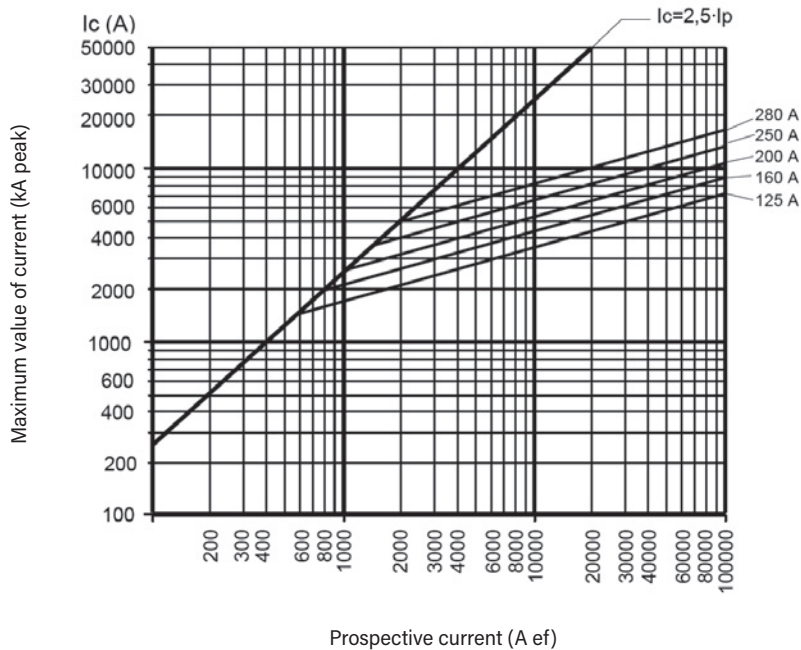
## PEAK ARC VOLTAGE ( $U_L$ )



## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



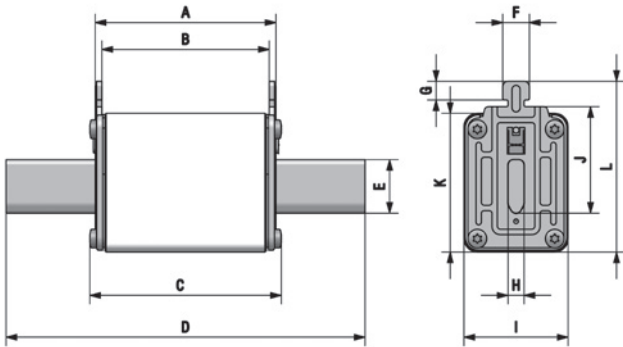


gS  
NH  
fuse links

RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	250A...450A	100kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

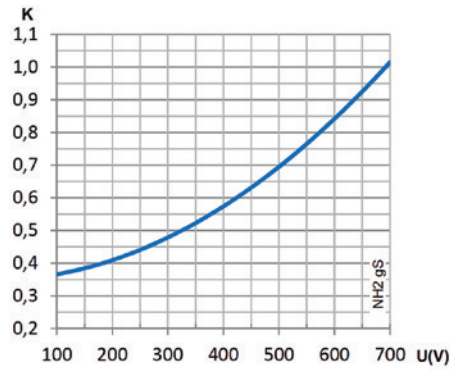


A	B	C	D	E	F	G	H	I	J	K	L
68	62	71,5	150	25	10	9,5	6	53	48	60	72

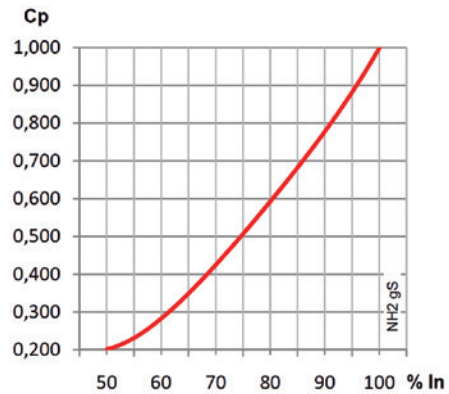
## POWER DISSIPATION

$I_n$ (A)	$I_t^2$ PREARcing (A <sup>2</sup> S)	OPERATING $I_t^2$ @690V (A <sup>2</sup> S)	POWER LOSS $0.8 \cdot I_n$ (W)	POWER LOSS $I_n$ (W)
250	24.280	74.460	18,6	32,2
315	50.660	155.360	20,8	35,8
355	67.450	206.850	23,4	40,1
400	100.770	309.000	24,4	42,6
450	140.740	431.580	33,9	47,2

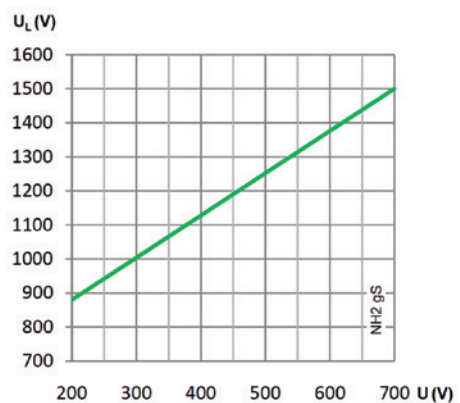
## $I^2t$ CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)



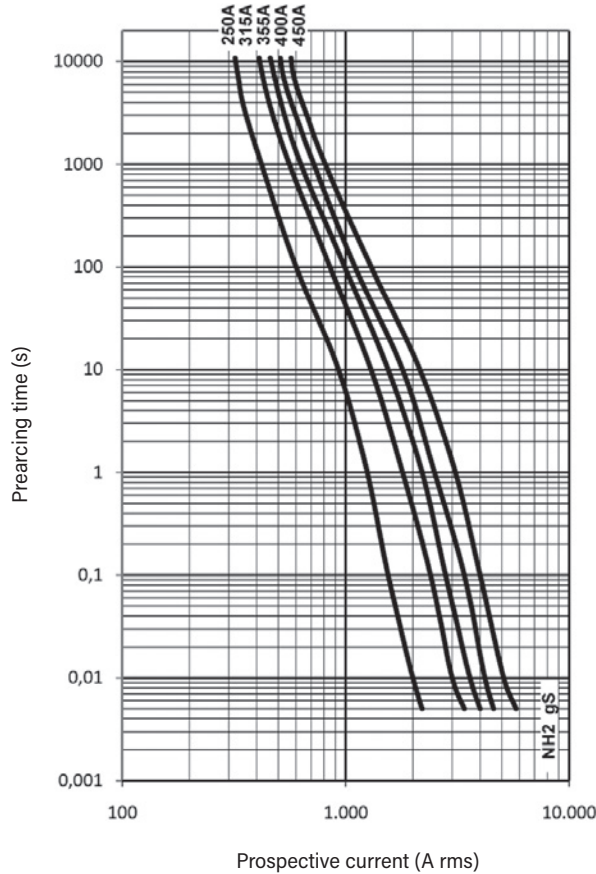
## PEAK ARC VOLTAGE ( $U_t$ )



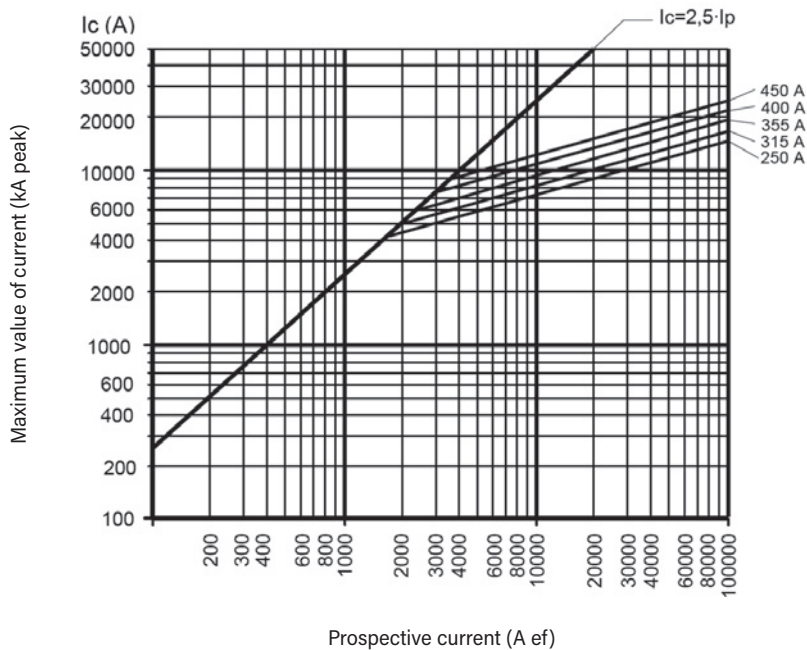




## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



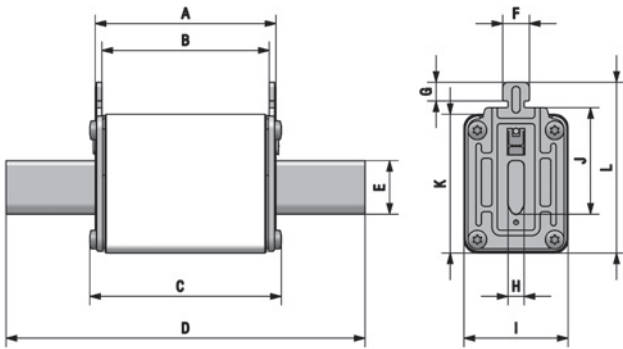


gS  
NH  
fuse links

RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	355A...630A	100kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

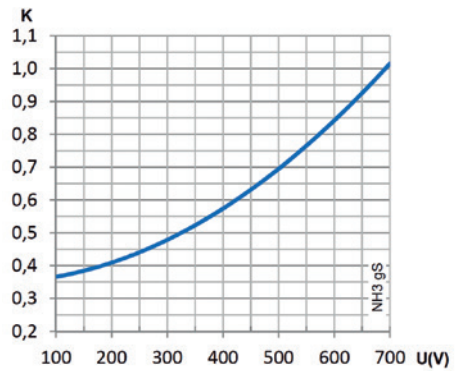


A	B	C	D	E	F	G	H	I	J	K	L
68	62	73	150	32	10	9,5	6	70	60	75	87

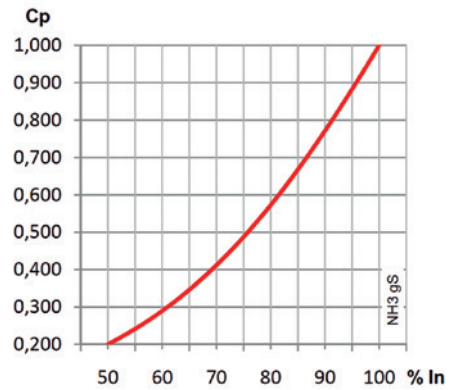
## POWER DISSIPATION

$I_n$ (A)	$I_t^2$ PREARcing (A <sup>2</sup> S)	OPERATING $I_t^2$ @690V (A <sup>2</sup> S)	POWER LOSS $0.8 \cdot I_n$ (W)	POWER LOSS $I_n$ (W)
355	54.240	151.700	22,7	39,6
400	75.760	211.900	24,3	42,7
450	114.770	320.970	26,3	46,0
500	165.270	462.200	27,6	47,1
630	303.060	847.570	34,3	60,4

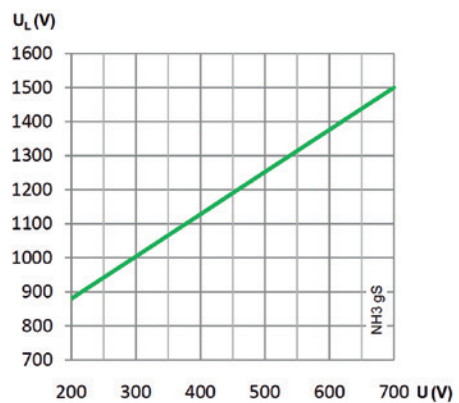
## $I_t^2$ CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)

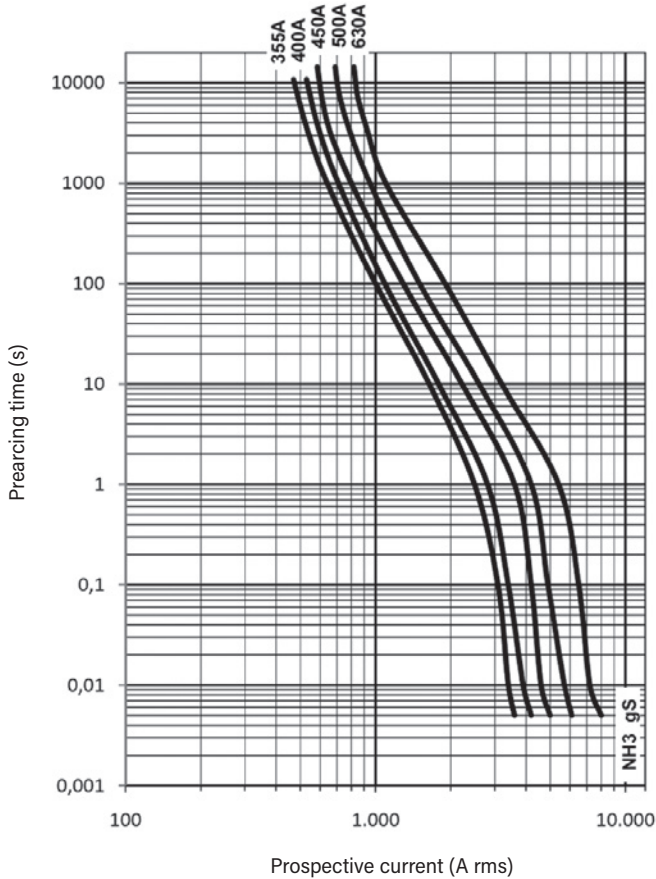


## PEAK ARC VOLTAGE ( $U_L$ )

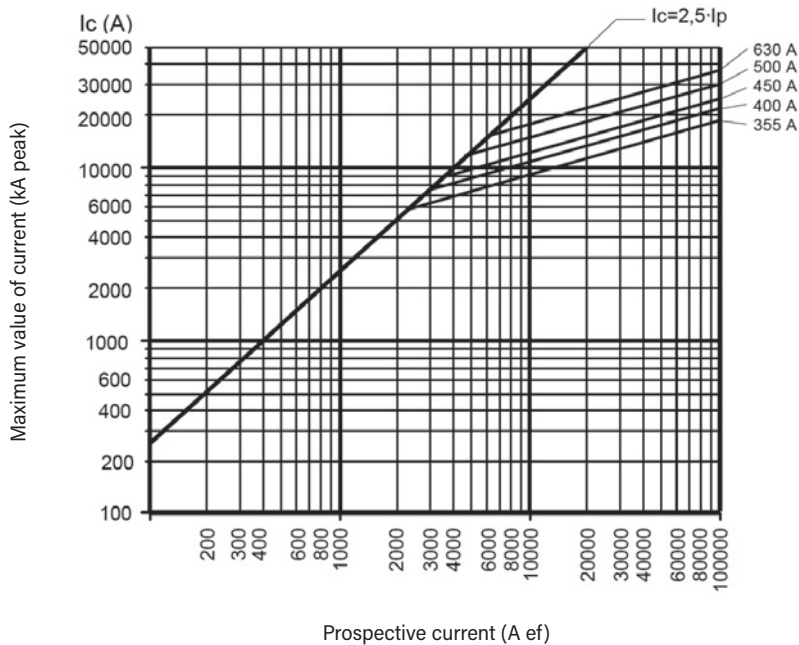




## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS





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NH  
fuse links

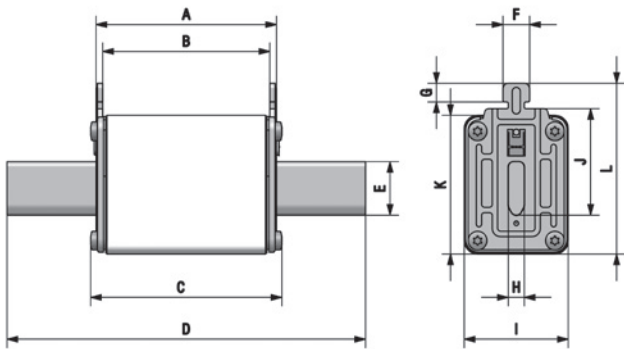
**RATED VOLTAGE**  
690V AC

**RATED CURRENT**  
16A...250A

**BREAKING CAPACITY**  
120kA  
(690V AC)  
  
30kA  
(440V DC)

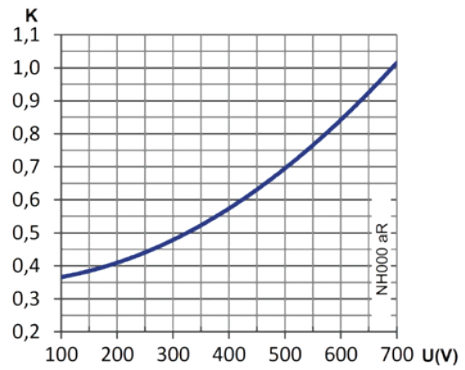


## DIMENSIONS

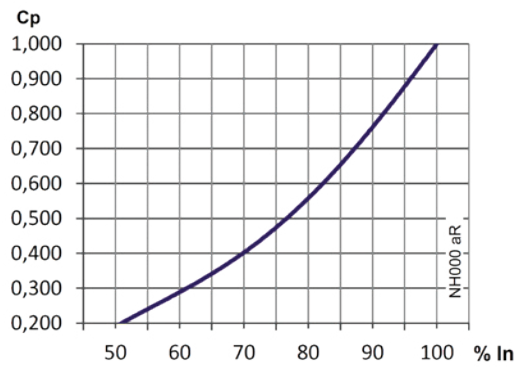


**A** 49   **B** 45   **C** 52   **D** 78,5   **E** 15   **F** 10   **G** 9,5   **H** 6   **I** 21   **J** 35   **K** 40   **L** 53

## I<sup>2</sup>t CORRECTION FACTOR (K)



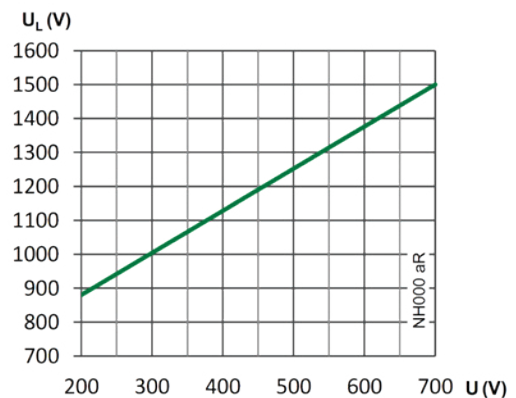
## CORRECTION FACTOR FOR POWER LOSS (Cp)



## POWER DISSIPATION

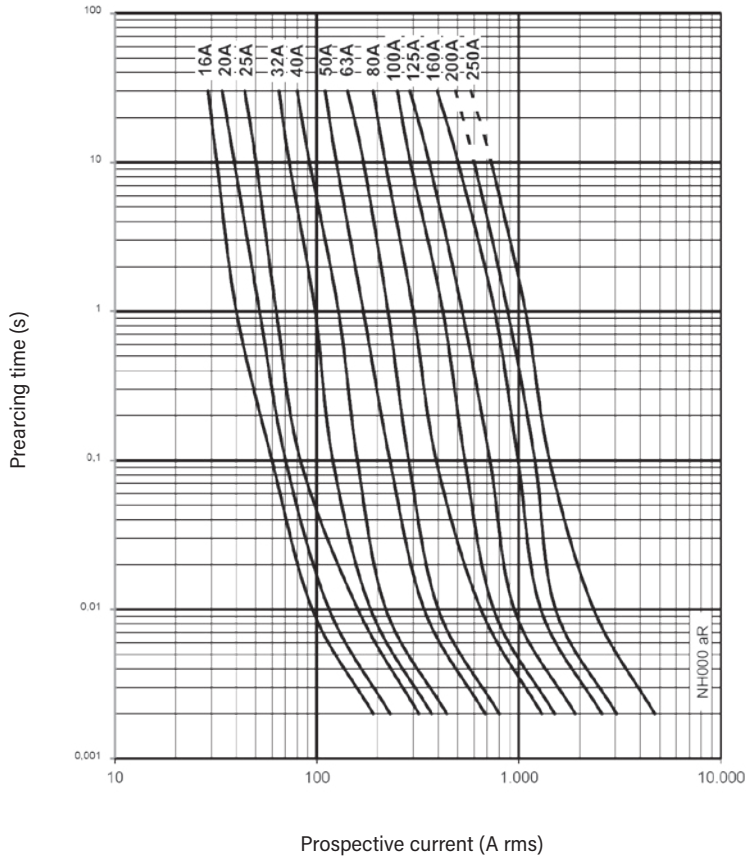
I <sub>n</sub> (A)	I <sup>2</sup> <sub>t</sub> PREARcing (A <sup>2</sup> S)	OPERATING I <sup>2</sup> <sub>t</sub> @690V (A <sup>2</sup> S)	POWER LOSS 0.8 · I <sub>n</sub> (W)	POWER LOSS I <sub>n</sub> (W)
16	7	62	2,5	4,5
20	15	121	2,9	5,2
25	24	200	3,8	6,8
32	33	213	4,5	8,0
40	59	379	5,1	9,1
50	157	1.000	5,3	9,5
63	290	2.270	6,9	12
80	550	4.300	8,4	15
100	720	5.880	9,5	17
125	1.410	11.540	11	20
160	2.340	19.080	15	26
200	3.490	28.500	20	36
250	6.500	53.000	26	46

## PEAK ARC VOLTAGE (U<sub>L</sub>)

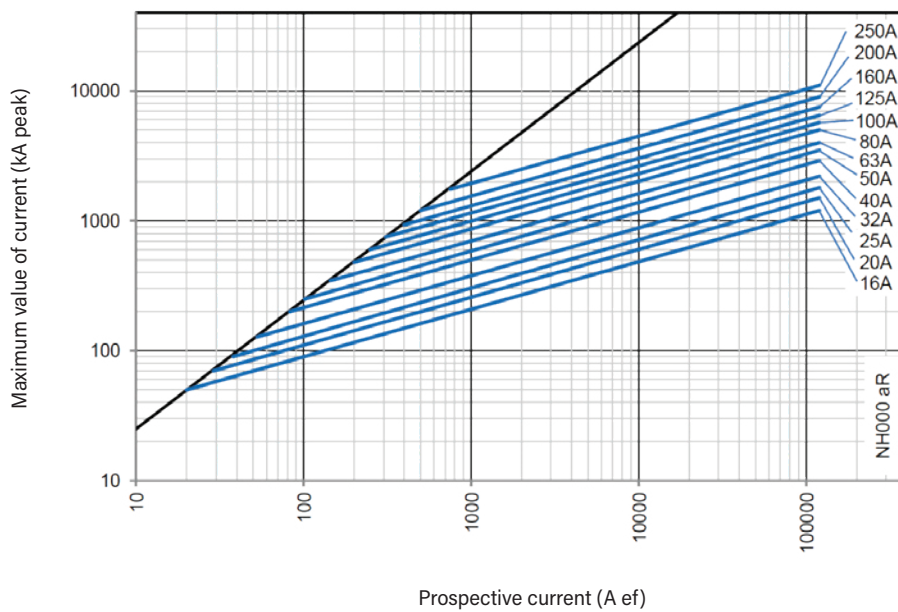




## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS





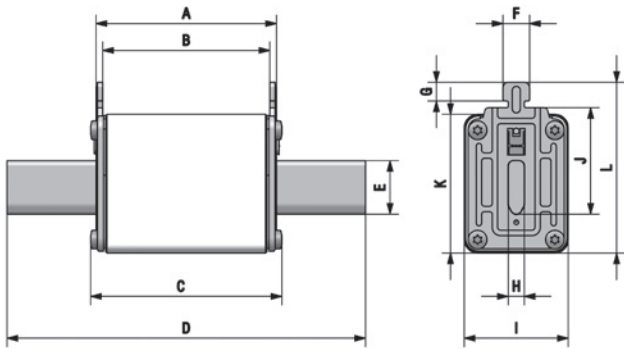


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RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	40A...400A	120kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

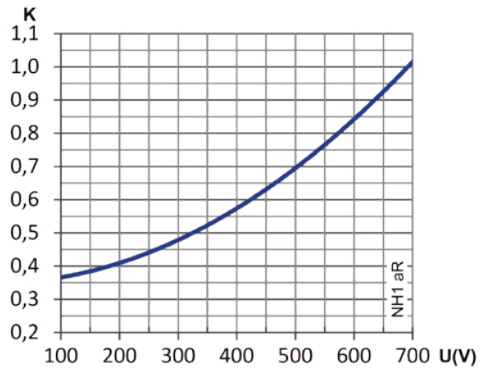


A	B	C	D	E	F	G	H	I	J	K	L
68	62	71,5	135	20	10	9,5	6	39	40	52	64

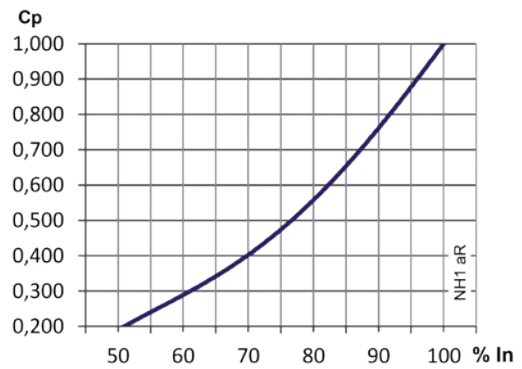
## POWER DISSIPATION

$I_n$	$I^2t$ PREARcing	OPERATING $I^2t$ @690V	POWER LOSS $0.8 \cdot I_n$	POWER LOSS $I_n$
(A)	(A <sup>2</sup> S)	(A <sup>2</sup> S)	(W)	(W)
40	55	320	8,1	14
50	97	570	9,6	17
63	220	1.300	11	19
80	370	2.300	13	23
100	570	3.590	18	32
125	980	6.080	24	44
160	1.710	10.560	25	45
200	3.040	18.770	33	59
250	5.400	33.380	41	73
315	10.220	63.110	43	77
350	12.160	75.100	45	80
400	23.000	142.000	52	93

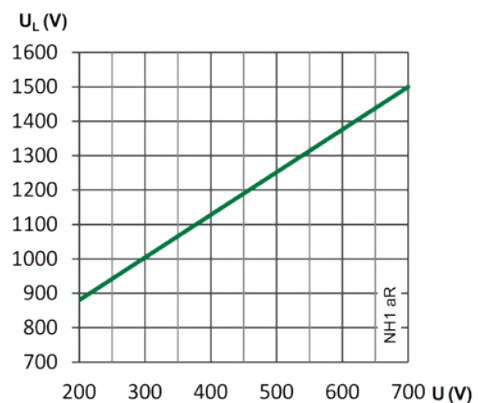
## $I^2t$ CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)



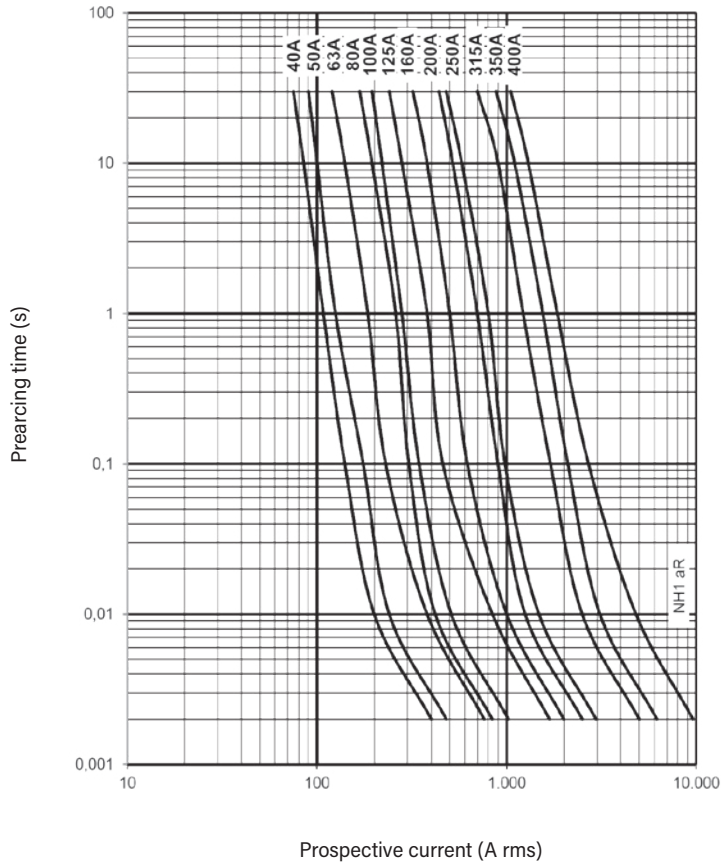
## PEAK ARC VOLTAGE ( $U_L$ )



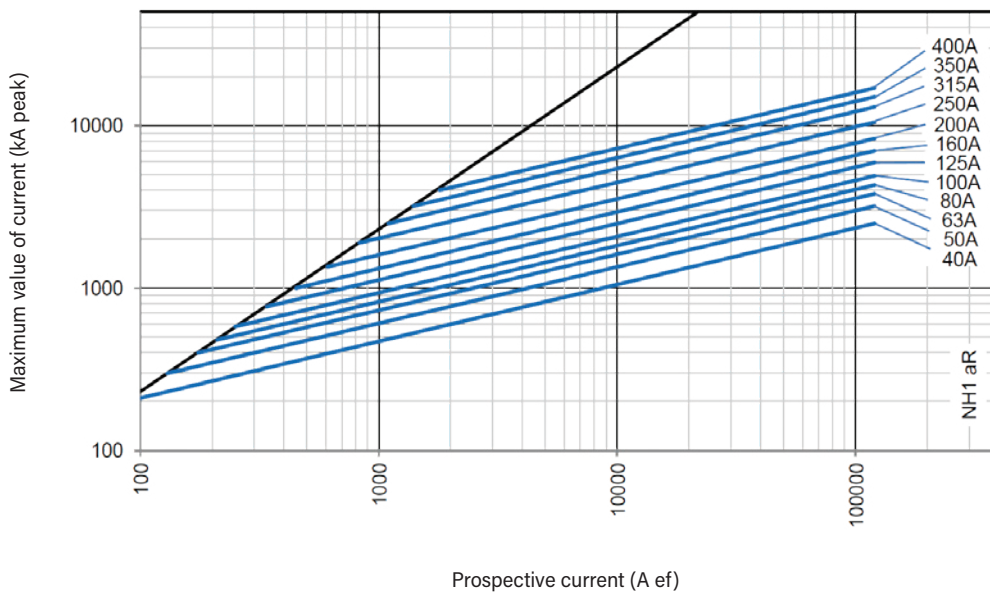


aR  
NH  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



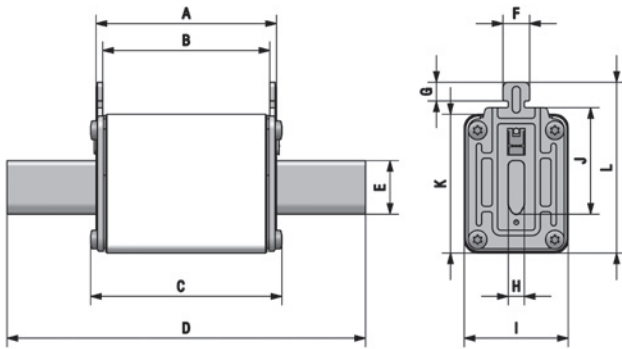


aR  
NH  
fuse links

RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	200A...700A	120kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

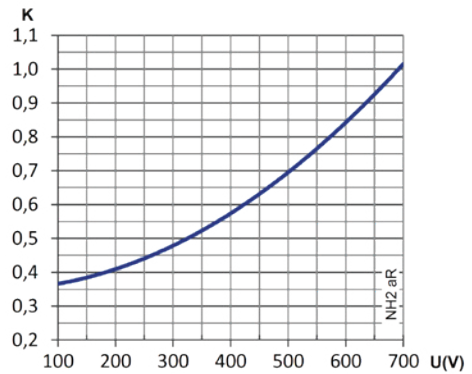


A	B	C	D	E	F	G	H	I	J	K	L
68	62	71,5	150	25	10	9,5	6	53	48	60	72

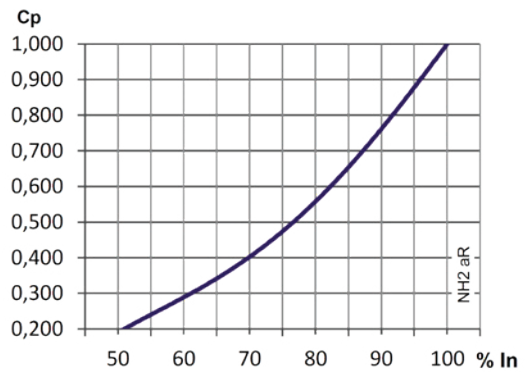
## POWER DISSIPATION

$I_n$ (A)	$I_t^2$ PREARcing (A <sup>2</sup> S)	OPERATING $I_t^2$ @690V (A <sup>2</sup> S)	POWER LOSS $0.8 \cdot I_n$ (W)	POWER LOSS $I_n$ (W)
200	1.550	9.430	53	95
250	3.250	19.670	56	100
315	6.230	37.720	57	102
350	9.300	56.340	58	104
400	13.000	78.700	72	129
450	17.000	102.000	77	137
500	24.500	147.000	83	148
550	36.000	216.000	85	152
630	47.220	283.330	95	170
700	68.000	408.000	99	178

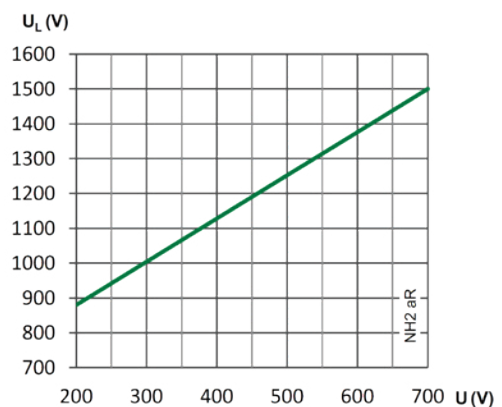
## $I_t^2$ CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)

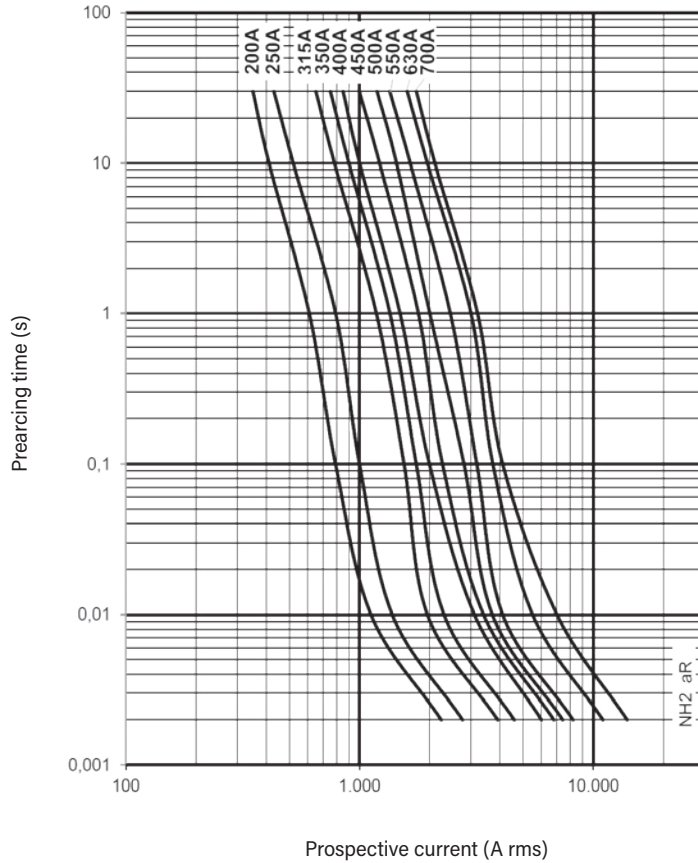


## PEAK ARC VOLTAGE ( $U_L$ )

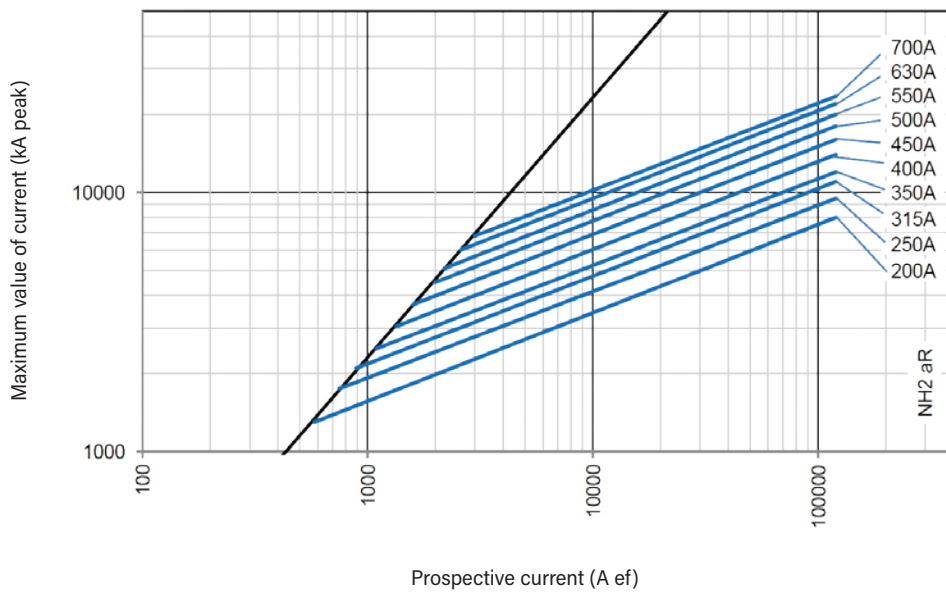




## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



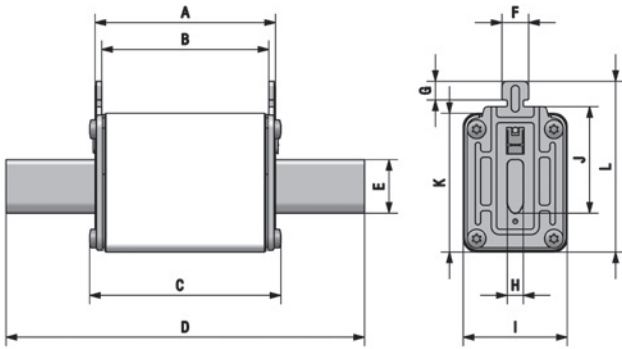


aR  
NH  
fuse links

RATED VOLTAGE	RATED CURRENT	BREAKING CAPACITY
690V AC	500A...1000A	120kA (690V AC)
		30kA (550V DC)



## DIMENSIONS

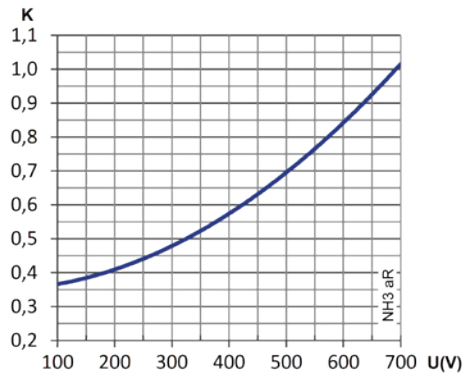


A	B	C	D	E	F	G	H	I	J	K	L
68	62	73	150	32	10	9,5	6	70	60	75	87

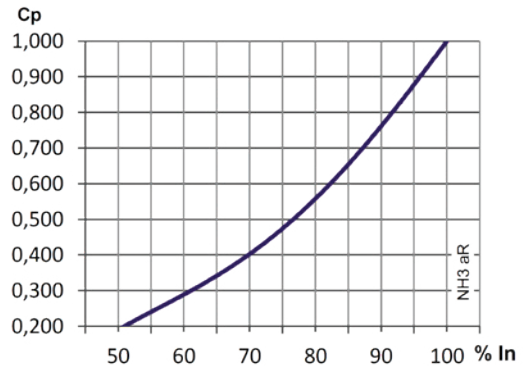
## POWER DISSIPATION

$I_n$	$I_t^2$ PREARcing	OPERATING $I_t^2$ @690V	POWER LOSS $0.8 \cdot I_n$	POWER LOSS $I_n$
(A)	(A <sup>2</sup> S)	(A <sup>2</sup> S)	(W)	(W)
500	22.160	109.000	76	136
550	32.100	158.060	81	145
630	45.500	220.000	89	159
700	65.520	322.200	103	184
800	97.870	481.310	107	191
900	126.380	621.520	121	216
1000	182.000	895.000	150	268

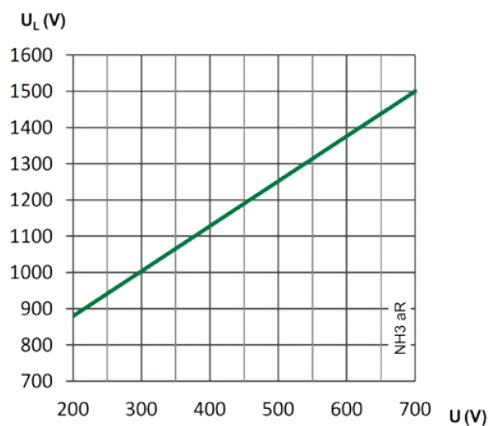
## $I_t^2$ CORRECTION FACTOR (K)



## CORRECTION FACTOR FOR POWER LOSS (Cp)



## PEAK ARC VOLTAGE ( $U_L$ )

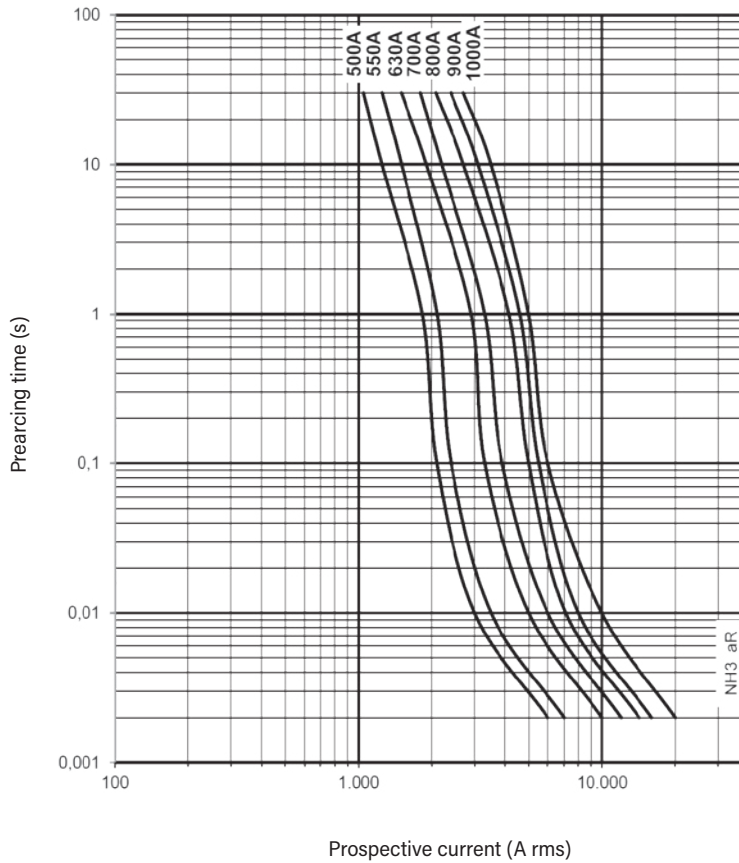




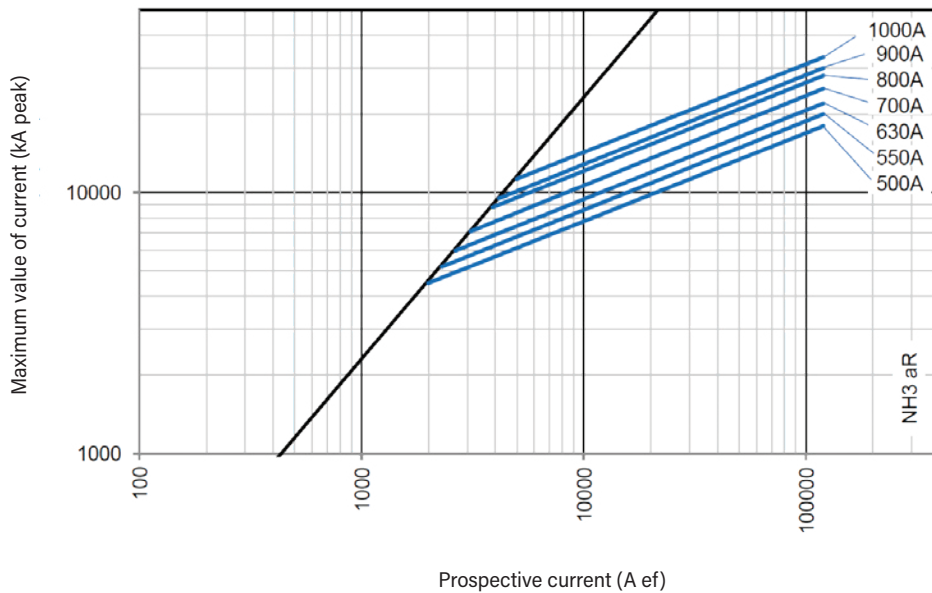


aR  
NH  
fuse links

## t-I CHARACTERISTICS



## CUT-OFF CHARACTERISTICS



**CYL** | aR | gR  
CYLINDRICAL  
fuse links



## USE OF SEMICONDUCTOR FUSE LINKS RAPIDPLUS® IN PMX MODULAR FUSE HOLDERS

The modular fuse holders for cylindrical fuses have a rated power acceptance according to the maximum power dissipations allowed for the general use fuse links (gG) and back up fuse links.

These maximum values allowed for the fuse links (gG/aM) are regulated by standards (IEC/EN60269-2). In the same way, this standards specify the minimum power acceptance for the fuse holders. This power acceptance is the power dissipated by the fuse links (converted in heat) that the fuse holder can accept with an acceptable increase of the temperature (values also regulated by standards).

The fuse links for protection of semiconductors RAPIDPLUS have a rated power dissipation (or power loss) higher than the gG or aM types, and for this reason there are some limitations for the application of these fuses in closed modular fuse holders.

It is necessary to check that the fuse links have a power diissipation not higher than the maximum value admissible of the fuse holder indicated by the manufacturer.

When it is no possible to use modular fuse holders the solution is the use of an open fuse base where the heat can be appropriately dissipated.

In the following table are indicated the maximum values of power acceptance for DF ELECTRIC fuse holders. These limits should never be exceeded:

**PMX** | PMX  
CYLINDRICAL  
fuse holders



RATED POWER ACCEPTANCE IEC/EN60269-2	3W	5W	9,5W
MAX. POWER ACCEPTANCE OF ELECTRIC FUSE HOLDERS	4W	6W	12W



**NH** aR  
NH  
fuse links



## FUSE LOAD CONSTANT $C_L$

Due to the high power dissipation of NH aR fuse-links, it is necessary to apply a derating factor that determines the maximum allowable continuous current when these fuses are installed in an NH base or in a fuse-switch-disconnector.

$$I_{MAX.} = I_N \times C_L$$



$I_n$ (A)	OPEN TYPE FUSE BASES	FUSE SWITCH DISCONNECTORS
16	1	1
20	1	1
25	1	1
32	1	1
40	1	1
50	1	1
63	1	1
80	1	0,95
100	1	0,90
125	0,95	0,85
160	0,90	0,75
200	0,80	0,70
250	0,80	0,60



$I_n$ (A)	OPEN TYPE FUSE BASES	FUSE SWITCH DISCONNECTORS
200	0,70	0,65
250	0,70	0,65
315	0,70	0,65
350	0,70	0,65
400	0,70	0,65
450	0,65	0,60
500	0,65	0,60
550	0,65	0,60
630	0,65	0,55
700	0,65	0,55



40	1	0,95
50	0,90	0,85
63	0,90	0,85
80	0,90	0,85
100	0,90	0,85
125	0,75	0,70
160	0,75	0,70
200	0,75	0,70
250	0,75	0,70
315	0,75	0,65
350	0,70	0,65
400	0,70	0,60



500	0,70	0,65
550	0,70	0,65
630	0,70	0,65
700	0,70	0,60
800	0,70	0,60
900	0,65	0,55
1000	0,60	0,50



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