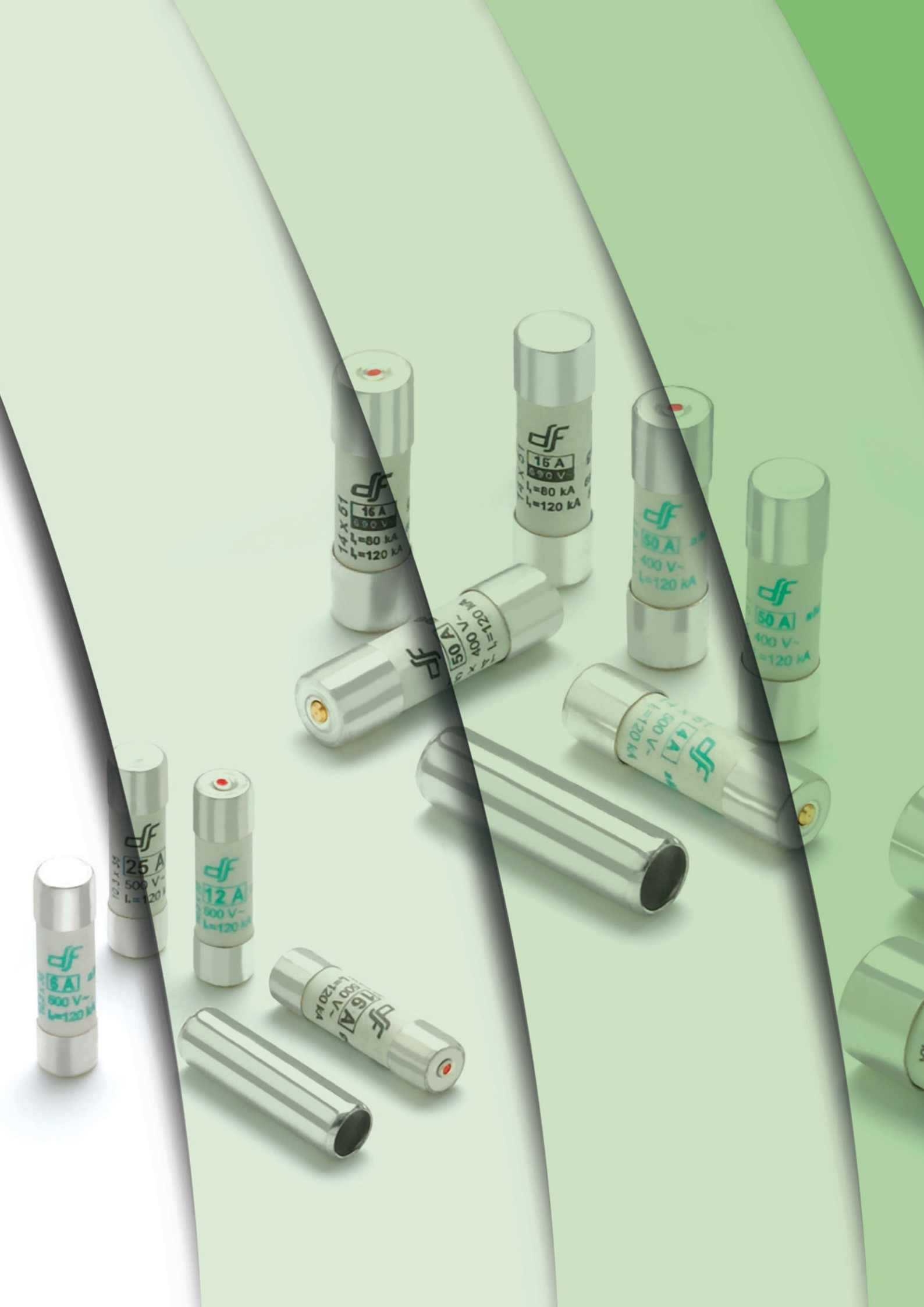


fuses

CYLINDRICAL



df
16 A
500 V
I_n=120 kA

df
25 A
500 V
I_n=120 kA

df
12 A
500 V
I_n=120 kA

df
16 A
500 V
I_n=120 kA

df
50 A
400 V
I_n=120 kA

df
16 A
500 V
I_n=80 kA
I_n=120 kA

df
16 A
500 V
I_n=80 kA
I_n=120 kA

df
50 A
400 V
I_n=120 kA

df
50 A
400 V
I_n=120 kA

df
50 A
400 V
I_n=120 kA

CYLINDRICAL FUSES

FUSES

gG CYLINDRICAL FUSES
aM CYLINDRICAL FUSES

PAGE 02 |
PAGE 04 |



CYLINDRICAL FUSES

gG CYLINDRICAL FUSES

Cylindrical fuse links gG class for use as general protection against overloads and short circuits, intended as protection of cables, power lines and equipment. Made of ceramic tube with high withstand to internal pressure and thermal shock, that allow a high breaking capacity in a reduced physical space. The melting elements are specially designed in order to avoid aging and thus maintain unalterable the electrical characteristics. Contact caps are made of silver plated copper. Versions available with fusing indicator or with striker for use in fuse holders with microswitch.

www.df-sa.es/cylindrical/fuses/gG/

I _n (A)	REFERENCE		U (V)	BREAKING CAPACITY (kA)	REFERENCE WITH STRIKER	U (V)	BREAKING CAPACITY (kA)	PACKING Uni./BOX
	WITHOUT INDICATOR	WITH INDICATOR						
8x32	0,5	420500	-	400	-	-	-	10/100
	1	420501	-	400	-	-	-	10/100
	2	420502	420602	400	20	-	-	10/100
	4	420504	420604	400	20	-	-	10/100
	6	420506	420606	400	20	-	-	10/100
	8	420508	420608	400	20	-	-	10/100
	10	420510	420610	400	20	-	-	10/100
	12	420512	420612	400	20	-	-	10/100
	16	420516	420616	400	20	-	-	10/100
	20	420720	420820	400	20	-	-	10/100



420500

10x38	0,5	420000	-	500	120	-	-	10/100
	1	420001	-	500	120	-	-	10/100
	2	420002	420102	500	120	-	-	10/100
	4	420004	420104	500	120	-	-	10/100
	6	420006	420106	500	120	-	-	10/100
	8	420008	420108	500	120	-	-	10/100
	10	420010	420110	500	120	-	-	10/100
	12	420012	420112	500	120	-	-	10/100
	16	420016	420116	500	120	-	-	10/100
	20	420020	420120	500	120	-	-	10/100
25	420025	420125	500	120	-	-	10/100	
32	420032	420132	400	120	-	-	10/100	



420025

14x51	1	421001	-	690	80	-	-	10/50
	2	421002	421102	690	80	421202	500 120	10/50
	4	421004	421104	690	80	421204	500 120	10/50
	6	421006	421106	690	80	421206	500 120	10/50
	8	421008	421108	690	80	421208	500 120	10/50
	10	421010	421110	690	80	421210	500 120	10/50
	12	421012	421112	690	80	421212	500 120	10/50
	16	421016	421116	690	80	421216	500 120	10/50
	20	421020	421120	690	80	421220	500 120	10/50
	25	421025	421125	690	80	421225	500 120	10/50
32	421032	421132	500	120	421232	500 120	10/50	
40	421040	421140	500	120	421240	500 120	10/50	
50	421050	421150	400	120	421250	400 120	10/50	



CYLINDRICAL FUSES

gG CYLINDRICAL FUSES

	I _n (A)	REFERENCE		U (V)	BREAKING CAPACITY (kA)	REFERENCE WITH STRIKER	U (V)	BREAKING CAPACITY (kA)	PACKING Uni./BOX
		WITHOUT INDICATOR	WITH INDICATOR						
22x58	2	422002	422102	690	80	—	—	—	10/5
	4	422004	422104	690	80	422204	690	80	10/5
	6	422006	422106	690	80	422206	690	80	10/5
	8	422008	422108	690	80	422208	690	80	10/5
	10	422010	422110	690	80	422210	690	80	10/5
	12	422012	422112	690	80	422212	690	80	10/5
	16	422016	422116	690	80	422216	690	80	10/5
	20	422020	422120	690	80	422220	690	80	10/5
	25	422025	422125	690	80	422225	690	80	10/5
	32	422032	422132	690	80	422232	690	80	10/5
	40	422040	422140	690	80	422240	690	80	10/5
	50	422050	422150	690	80	422250	690	80	10/5
	63	422063	422163	690	80	422263	690	80	10/5
	80	422080	422180	500	120	422280	500	120	10/5
	100	422000	422100	500	120	422200	500	120	10/5
	125*	422015	422115	400	120	422215	400	120	10/5

* OVERRATING FUSES



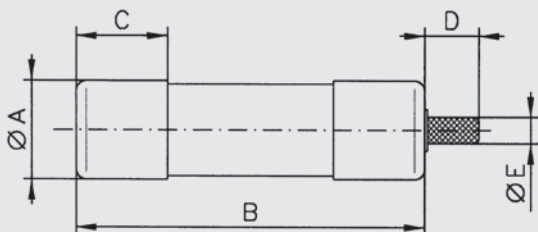
gG aM NEUTRAL LINKS

SIZE	REFERENCE	PACKING Uni./BOX
8x32	430000	10/100
10x38	431000	10/100
14x51	432000	10/50
22x58	433000	10/50



431000

TECHNICAL gG CYLINDRICAL FUSES DIMENSIONS



SIZE	A	B	C	D	E
8,5x31,5	8,5	31,5	6,3	—	—
10,3x38	10,3	38	8,5	—	—
14,3x51	14,3	51	11,5	8	4
22,2x58	22,2	58	15,5	8	4

CYLINDRICAL FUSES

aM CYLINDRICAL FUSES

Cylindrical fuse links aM class are intended for short circuit protection in motors, transformer and other load with high inrush currents. Excellent protection of switchgear (contactor, thermal switch) due to the good current limiting capability and low I^2t values. These fuse links must be associated to an overload device protection as a thermal switch. Made of ceramic tube with high withstand to internal pressure and thermal shock, that allow a high breaking capacity in a reduced physical space. The melting elements are silver plated in order to avoid the aging and thus keep unalterable the electric characteristics. Contacts caps are made of silver plated copper. Available versions with fusing indicator or with striker for use in fuse holders with microswitch.

www.df-sa.es/cylindrical/fuses/aM/

I_n (A)	REFERENCE		U (V)	BREAKING CAPACITY (kA)	REFERENCE WITH STRIKER	U (V)	BREAKING CAPACITY (kA)	PACKING Uni./BOX
	WITHOUT INDICATOR	WITH INDICATOR						
8x32	1	411101	411201	400	20	-	-	10/100
	2	411102	411202	400	20	-	-	10/100
	4	411104	411204	400	20	-	-	10/100
	6	411106	411206	400	20	-	-	10/100
	8	411108	-	400	20	-	-	10/100
	10	411110	411210	400	20	-	-	10/100



411106

10x38	0,16	440031	-	500	120	-	-	10/100
	0,25	440033	-	500	120	-	-	10/100
	0,5	440000	-	500	120	-	-	10/100
	1	440001	440101	500	120	-	-	10/100
	2	440002	440102	500	120	-	-	10/100
	4	440004	440104	500	120	-	-	10/100
	6	440006	440106	500	120	-	-	10/100
	8	440008	440108	500	120	-	-	10/100
	10	440010	440110	500	120	-	-	10/100
	12	440012	440112	500	120	-	-	10/100
	16	440016	440116	500	120	-	-	10/100
	20	440020	440120	400	120	-	-	10/100
	25	440025	440125	400	120	-	-	10/100



440006

14x51	0,25	441031	-	690	80	-	-	10/50	
	0,5	441000	-	690	80	-	-	10/50	
	1	441001	441101	690	80	441201	500	120	10/50
	2	441002	441102	690	80	441202	500	120	10/50
	4	441004	441104	690	80	441204	500	120	10/50
	6	441006	441106	690	80	441206	500	120	10/50
	8	441008	441108	690	80	441208	500	120	10/50
	10	441010	441110	690	80	441210	500	120	10/50
	12	441012	441112	690	80	441212	500	120	10/50
	16	441016	441116	690	80	441216	500	120	10/50
	20	441020	441120	690	80	441220	500	120	10/50
	25	441025	441125	690	80	441225	500	120	10/50
	32	441032	441132	500	120	441232	500	120	10/50
	40	441040	441140	500	120	441240	500	120	10/50
45	441045	441145	500	120	441245	500	120	10/50	
50	441050	441150	400	120	441250	400	120	10/50	



STANDARDS IEC 60269-1 IEC 60269-2 EN 60269-1 EN 60269-2	APPROVALS Cd-Pb FREE RoHS compliant	TECHNICAL I-1 AND CUT-OFF CHARACTERISTICS PAGE 15	TECHNICAL I ² t CHARACTERISTICS AND POWER DISSIPATION PAGE 16	COMPATIBLE PMX MODULAR FUSE HOLDERS PAGE 06	COMPATIBLE PMC & PMX-CC FUSE HOLDERS PAGE 09	COMPATIBLE PMF MODULAR FUSE HOLDERS PAGE 10	COMPATIBLE SC SCREW FIXING & BAC OPEN FUSE HOLDERS PAGE 11	COMPATIBLE PMP PANEL MOUNTING & PMB SOCKET FUSE HOLDERS PAGE 12
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CYLINDRICAL FUSES

aM CYLINDRICAL FUSES

I _n (A)	REFERENCE		U (V)	BREAKING CAPACITY (kA)	REFERENCE WITH STRIKER	U (V)	BREAKING CAPACITY (kA)	PACKING Uni./BOX	
	WITHOUT INDICATOR	WITH INDICATOR							
22x58	2	442002	442102	690	80	442202	690	80	10/50
	4	442004	442104	690	80	442204	690	80	10/50
	6	442006	442106	690	80	442206	690	80	10/50
	8	442008	442108	690	80	442208	690	80	10/50
	10	442010	442110	690	80	442210	690	80	10/50
	12	442012	442112	690	80	442212	690	80	10/50
	16	442016	442116	690	80	442216	690	80	10/50
	20	442020	442120	690	80	442220	690	80	10/50
	25	442025	442125	690	80	442225	690	80	10/50
	32	442032	442132	690	80	442232	690	80	10/50
	40	442040	442140	690	80	442240	690	80	10/50
	50	442050	442150	690	80	442250	690	80	10/50
	63	442063	442163	690	80	442263	690	80	10/50
	80	442080	442180	500	120	442280	500	120	10/50
	100	442000	442100	500	120	442200	500	120	10/50
	125*	442015	442115	400	120	442215	400	120	10/50

* OVERRATING FUSES



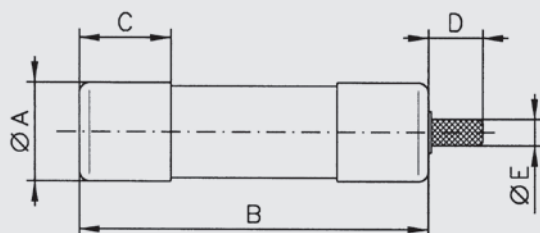
gG aM NEUTRAL LINKS

SIZE	REFERENCE	PACKING Uni./BOX
8x31	430000	10/100
10x38	431000	10/100
14x51	432000	10/50
22x58	433000	10/50



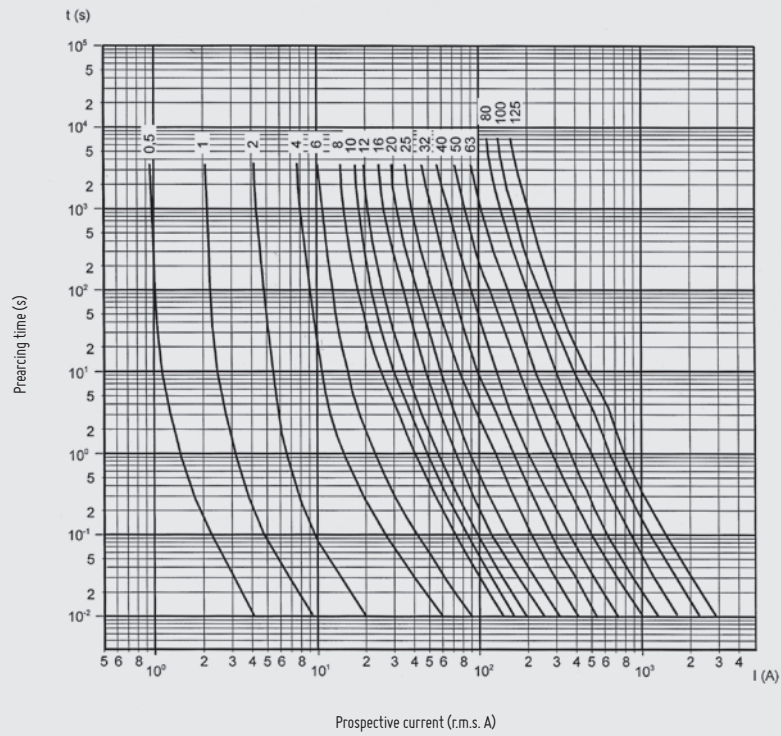
431000

TECHNICAL aM CYLINDRICAL FUSES DIMENSIONS

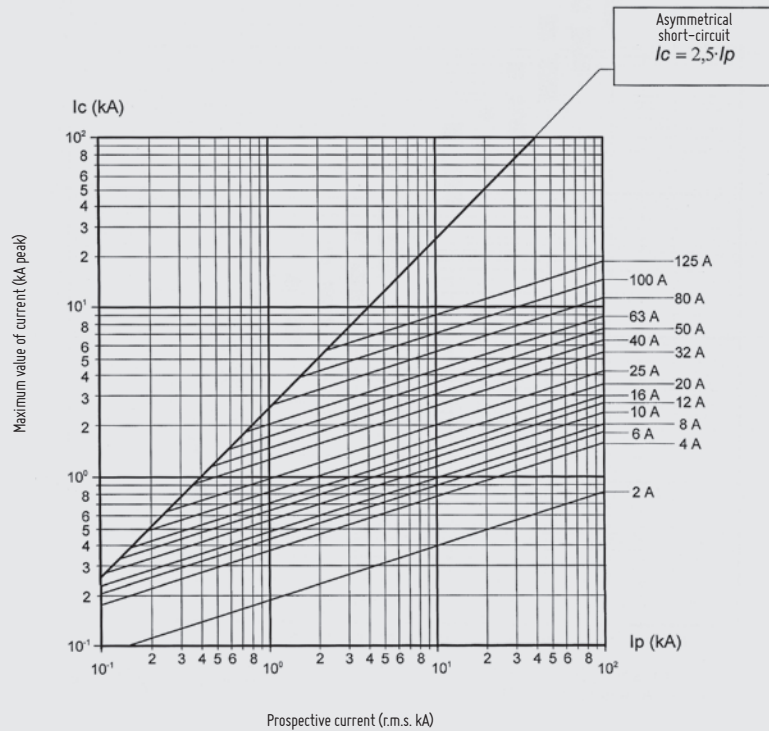


SIZE	A	B	C	D	E
8,5x31,5	8,5	31,5	6,3	-	-
10,3x38	10,3	38	8,5	-	-
14,3x51	14,3	51	11,5	8	4
22,2x58	22,2	58	15,5	8	4

TECHNICAL
gG CYLINDRICAL FUSES
t-I CHARACTERISTICS



TECHNICAL
gG CYLINDRICAL FUSES
CUT-OFF CHARACTERISTICS



TECHNICAL

gG CYLINDRICAL FUSES I²t CHARACTERISTICS

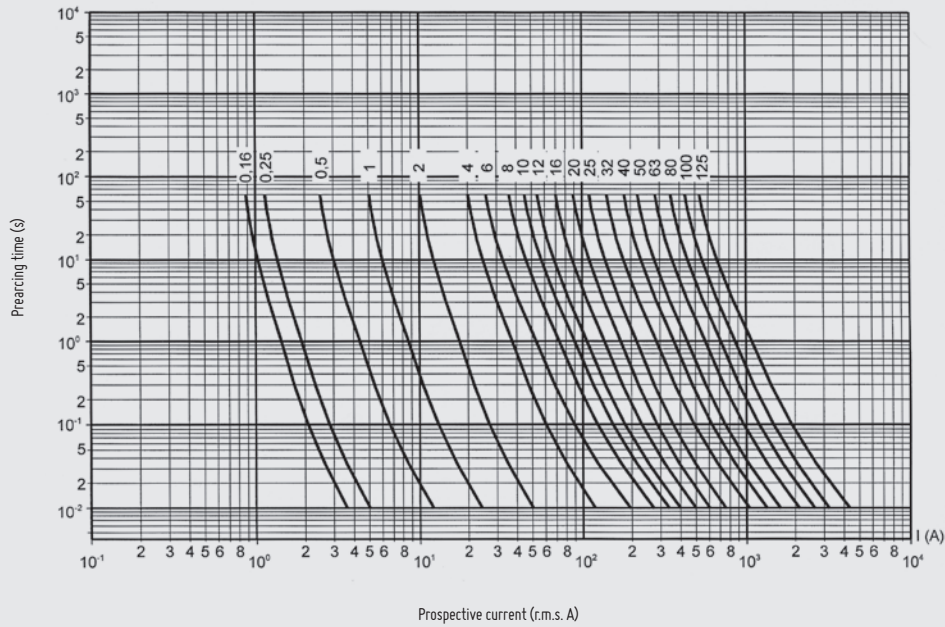
I _n (A)	I ² t Prearcing (A ² s)	I ² t 400 V (A ² s)	I ² t 500 V (A ² s)	I ² t 690 V (A ² s)
0,5	4,0	8,6	10,4	15,0
1	6,5	13,2	15,7	22,0
2	7,0	14,6	17,6	25,0
4	45	90	108	150
6	70	140	166	230
8	80	158	188	260
10	120	248	297	420
12	180	362	431	600
16	270	536	636	880
20	500	981	1.162	1.600
25	800	1.688	2.034	2.900
32	1.200	2.412	2.871	4.000
40	2.500	4.907	5.808	8.000
50	5.100	11.262	13.728	20.000
63	7.900	16.451	19.762	28.000
80	16.000	37.242	46.000	–
100	28.000	68.072	85.000	–
125	40.000	120.000	–	–

TECHNICAL

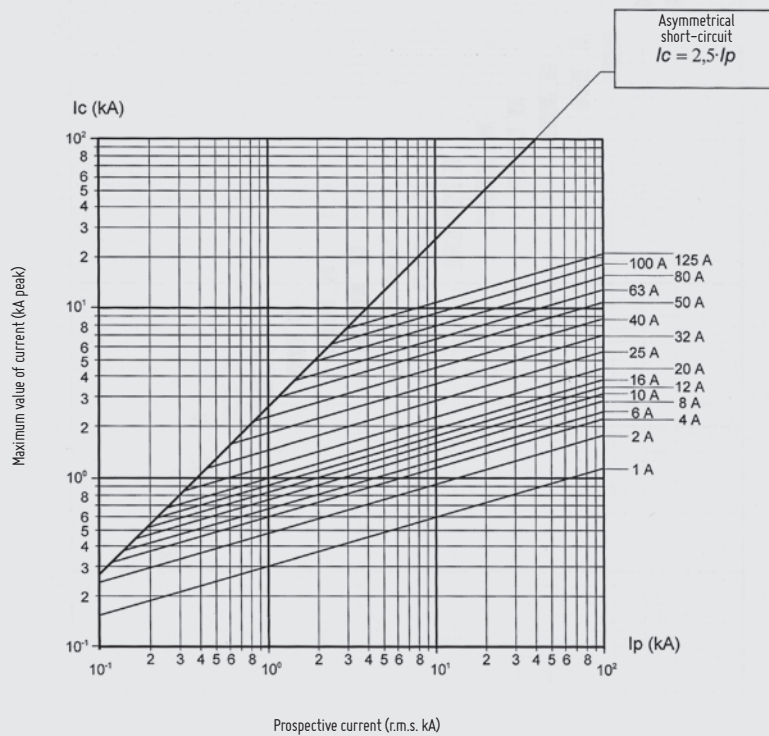
gG CYLINDRICAL FUSES POWER DISSIPATION

I _n (A)	SIZE			
	8,5x32 (VW)	10x38 (VW)	14x51 (VW)	22x58 (VW)
0,5	1,2	1,43	–	–
1	2,0	2,77	3,90	–
2	0,5	0,60	0,90	1,00
4	0,8	0,70	1,00	1,10
6	1,1	0,85	1,15	1,30
8	1,3	0,75	1,00	1,10
10	1,0	1,00	1,30	1,50
12	1,2	1,30	1,70	1,80
16	1,5	1,60	2,00	2,10
20	2,0	2,00	2,50	2,70
25	–	2,60	3,30	3,30
32	–	2,90	3,50	3,50
40	–	–	4,75	4,00
50	–	–	4,80	5,50
63	–	–	–	6,90
80	–	–	–	7,80
100	–	–	–	9,00
125	–	–	–	11,4

TECHNICAL
aM CYLINDRICAL FUSES
t-I CHARACTERISTICS



TECHNICAL
aM CYLINDRICAL FUSES
CUT-OFF CHARACTERISTICS



TECHNICAL

aM CYLINDRICAL FUSES I²t CHARACTERISTICS

I _n (A)	I ² t Prearcing (A ² s)	I ² t 400 V (A ² s)	I ² t 500 V (A ² s)	I ² t 690 V (A ² s)
0,16	3,0	6,7	8,2	12,0
0,25	4,0	8,6	10,4	15,0
0,5	6,5	13,2	15,7	22,0
1	9,5	18,5	21,9	30,0
2	40	83	99	140
4	90	181	215	300
6	120	250	300	425
8	220	448	535	750
10	300	733	916	1.400
12	380	936	1.173	1.800
16	550	1.608	2.103	3.500
20	950	2.488	3.165	5.000
25	1.300	3.728	4.851	8.000
32	2.500	6.207	7.791	12.000
40	4.500	10.685	13.263	20.000
45	8.000	16.538	19.831	28.000
50	10.000	19.626	23.230	32.000
63	15.000	31.520	37.950	54.000
80	30.000	59.088	70.000	–
100	50.000	113.945	140.000	–
125	80.000	200.000	–	–

TECHNICAL

aM CYLINDRICAL FUSES POWER DISSIPATION

I _n (A)	SIZE			
	8,5x32 (VW)	10x38 (VW)	14x51 (VW)	22x58 (VW)
0,16	–	0,24	–	–
0,25	–	0,36	0,41	–
0,5	–	0,49	0,69	–
1	0,10	0,10	0,14	–
2	0,16	0,18	0,24	0,29
4	0,25	0,31	0,45	0,48
6	0,35	0,32	0,42	0,47
8	0,40	0,52	0,70	0,73
10	0,65	0,55	0,53	0,74
12	–	0,63	0,88	0,83
16	–	0,92	1,16	1,21
20	–	0,96	1,23	1,29
25	–	1,40	1,46	1,53
32	–	–	2,04	2,13
40	–	–	2,60	3,40
45	–	–	2,85	–
50	–	–	2,90	3,48
63	–	–	–	4,46
80	–	–	–	5,86
100	–	–	–	6,61
125	–	–	–	8,42

TECHNICAL

gG CYLINDRICAL FUSES DC APPLICATIONS

Fuses are generally suitable for both AC and DC applications. The DC performance of fuse-links is different and AC ratings cannot be used for DC applications. There is no simple rule that safely converts an AC voltage rating of a fuse-link to DC voltage rating. For this reason it is necessary to take into account a lot of aspects in order to determine the DC applications.

In the **DF ELECTRIC gG cylindrical fuses** it is necessary to take into account the following considerations:

- The power dissipations are the same in AC (RMS value) and the DC values.
- The time current characteristics are the same for DC applications under steady-state conditions.
- The DC rated voltage and maximum breaking capacity are lower than the AC values (see the table).

SIZE	RATED CURRENT	MAX. DC VOLTAGE	DC BREAKING CAPACITY
8,5x31,5	0,5A...10A 12A...20A	150V DC 60V DC	5 kA
10x38	0,5A...16A 20A...32A	250V DC 80V DC	15 kA
14x51	1A...25A 32A & 40A 50A	440V DC 80V DC 48V DC	15 kA
22x58	2A...63A 80A & 100A 125A	440V DC 80V DC 48V DC	15 kA

NOTES

These values are referred to a time constant L/R = 15 ms.

For higher values of time constant, the maximum utilization voltage must be reduced.

For circuits with very inductive behaviour, we recommend to connect two fuses in series.

Electric

THE PROTECTION FORMULA

ELECTRONIC



CYLINDRICAL



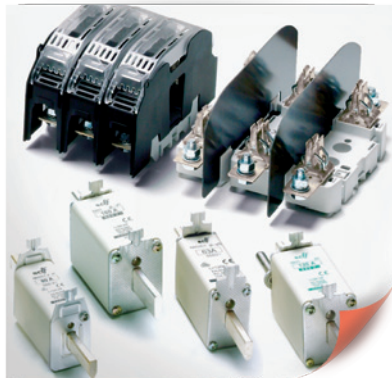
PHOTOVOLTAIC



RAPIDPLUS



NH



SPECIAL FUSES



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