

# General Purpose Fuses IEC



## Ferrule Fuses aM & gG 400V to 690V with/without Striker aM & gG 8x32, 10x38, 14x51, 22x58

### Residential and Industrial Cylindrical Fuse-links

Ferraz Shawmut gF/gG-gG and aM fuse-links cover a wide range of physical sizes and ampere ratings for 250, 380\*/ 400, 500, and 660\* 690volts AC. gF/gG fuse-links are for residential use. gG and aM fuse-links are for industrial applications. Most ratings are available with an optional indicator. All industrial fuse-links have the option of a built-in striker. All cylindrical fuse-links have ceramic bodies and silver-plated ferrules.

*\* Fuse-links marked 380V (gF/gG) and 660V (gG-aM) will be re-marked (and safely used at ) 400V AC and 690V AC in compliance with changes in IEC Standard 269, but should not be used above 418V AC or 726V AC.*

#### gF/gG

##### Residential Full Range Protection

- 7 physical sizes from 6.3 x 23mm to 10.3 x 38 mm
- 250 and 380 Volt ratings - 0.5A through 32A
- Most ratings available with indicator
- Meet IEC, NFC, UNE standards
- See residential fuse-links, Special Purpose section

#### gG

##### Full Range Protection

- 4 physical sizes from 8 x 31mm to 22 x 58 mm
- 400, 500 and 690 Volt ratings -0.5A through 125A
- Most ratings available with indicator
- Meet IEC, NFC and UNE standards
- Approved by Lloyds Register of Shipping and Bureau Veritas

#### gG

##### Full Range Protection

##### Fuse-links with striker

- 2 sizes- 14 x 51mm and 22 x 58 mm
- 400, 500 and 690 Volt ratings 4A through 125A
- All ratings include striker
- Meet IEC, NFC and UNE standards
- Approved by Lloyds Register of Shipping and Bureau Veritas

#### aM

##### Short Circuit Protection

##### Fuse-links with striker

- 4 physical sizes from 8 x 31 mm to 22 x 58 mm
- 400, 500 and 690 Volt ratings- 0.16A through 125A
- Most ratings available with indicator
- Meet IEC, NFC and UNE standards
- Approved by Lloyds Register of Shipping and Bureau Veritas

#### aM

##### Short Circuit Protection

##### Fuse-links with striker

- 2 sizes - 14 x 51mm and 22 x 58mm
- 400, 500 and 690 Volt ratings - 2A through 125A
- All ratings include striker
- Meet IEC, NFC and UNE standards
- Approved by Lloyds Register of Shipping and Bureau Veritas

# General Purpose Fuses IEC

Ferrule Fuses  
gG 400V to 690V  
with/without Striker  
gG 8x32, 10x38, 14x51, 22x58

## Ratings - gG (Optional Blown-Fuse Indicator)

Size	Rated In Current (A)	Rated Voltage	Previous References		Reference Number		Breaking Capacity	Catalog Number	
			w/o Indicator	w Indicator	w/o Indicator	w Indicator		w/o Indicator	w Indicator
8 x 31	0.5	400V	15009	-	P218191	-	20kA - 400V	FR8GG40V0.5	
	1		15011	-	C218709			FR8GG40V1	
	2		15013	15213	Q219227	B222204		FR8GG40V2	FR8GG40V2I
	4		15019	15219	W222958	X222959		FR8GG40V4	FR8GG40V4I
	6		15023	15223	A211025	V201291		FR8GG40V6	FR8GG40V6I
	8		15027	15227	B213096	B211026		FR8GG40V8	FR8GG40V8I
	10		15031	15231	A214613	A212060		FR8GG40V10	FR8GG40V10I
	12		15033	15233	R216146	C213097		FR8GG40V12	FR8GG40V12I
	16		15035	15235	P216650	Y214105		FR8GG40V16	FR8GG40V16I
	20		15037	15237	F217677	J215127		FR8GG40V20	FR8GG40V20I
25	15039	15239	D218710	S216147	FR8GG40V25	FR8GG40V25I			
10 X 38	0.5	500V	16009	-	C211027	-	120kA - 500V	FR10GG50V0.5	FR10GG50V2I
	1		16011	-	B212061	-		FR10GG50V1	FR10GG50V4I
	2		16013	16213	D213098	S216653		FR10GG50V2	FR10GG50V6I
	4		16019	16219	X213598	E217170		FR10GG50V4	FR10GG50V10I
	6		16023	16223	K215128	T218195		FR10GG50V6	FR10GG50V10I
	8		16027	16227	D217169	V219231		FR10GG50V8	FR10GG50V12I
	10		16031	16231	S218194	E222207		FR10GG50V10	FR10GG50V16I
	12		16033	16233	W219761	H200751		FR10GG50V12	FR10GG50V20I
	16		16035	16235	G200750	H201809		FR10GG50V16	FR10GG50V25I
	20		16037	16237	D211028	X211551		FR10GG50V20	FR10GG50V32I
25	16039	16239	E213099	W212585	FR10GG50V25	FR10GG50V2I			
32	400V	16043	16243	A214107	Z213600	120kA - 400V	FR10GG50V32	FR10GG50V4I	
14 X 51	1	690V	17011	-	K218716	-	80kA - 690V	FR14GG69V1	
	2		17013	17213	Y219234	C201298		FR14GG69V2	FR14GG69V2I
	4		17019	17219	A219765	H211032		FR14GG69V4	FR14GG69V4I
	6		17023	17223	H222210	G212066		FR14GG69V6	FR14GG69V6I
	8		17027	17227	D222965	K213104		FR14GG69V8	FR14GG69V8I
	10		17031	17231	L200754	H214620		FR14GG69V10	FR14GG69V10I
	12		17033	17233	L201812	R215640		FR14GG69V12	FR14GG69V12I
	16		17035	17235	A211554	X216657		FR14GG69V16	FR14GG69V16I
	20		17037	17237	Z212588	N217684		FR14GG69V20	FR14GG69V20I
	25		17039	17239	C213603	M218718		FR14GG69V25	FR14GG69V25I
32	500V	17043	17243	W216656	C219767	120kA - 500V	FR14GG69V32	FR14GG69V32I	
40		17047	17247	X218198	F222967	FR14GG69V40	FR14GG69V40I		
50	400V	17051	17251	Z219235	D201299	120kA - 400V	FR14GG69V50	FR14GG69V50I	
22 x 58	2	690V	18013	-	F219241	-	80kA - 690V	FR22GG69V2	
	4		18019	18219	H219772	Q211039		FR22GG69V4	FR22GG69V4I
	6		18023	18223	P222216	P212073		FR22GG69V6	FR22GG69V6I
	8		18027	18227	L222972	R213110		FR22GG69V8	FR22GG69V8I
	10		18031	18231	T200761	N214119		FR22GG69V10	FR22GG69V10I
	12		18033	18233	J201304	Y215140		FR22GG69V12	FR22GG69V12I
	16		18035	18235	S201818	D216157		FR22GG69V16	FR22GG69V16I
	20		18037	18237	P211038	R217181		FR22GG69V20	FR22GG69V20I
	25		18039	18239	N212072	F218206		FR22GG69V25	FR22GG69V25I
	32		500V	18043	18243	F212594		H219243	FR22GG69V32
40	18047	18247		J213609	R222218	FR22GG69V40	FR22GG69V40I		
50	400V	18051	18251	P214626	W200763	FR22GG69V50	FR22GG69V50I		
63		18055	18255	Y215646	V201820	FR22GG69V63	FR22GG69V63I		
80	500V	18059	18259	Q217180	K211563	FR22GG69V80	FR22GG69V80I		
100		18063	18263	E218205	H212596	120kA - 500V	FR22GG69V100	FR22GG69V100I	
125		18065	18265	J219773	L213611	120kA - 400V	FR22GG69V125	FR22GG69V125I	

Packaging 10



X211551

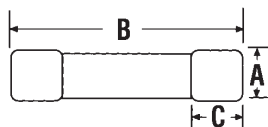


M218718



K211563

## Blown-Fuse Indicator



## Dimensions

Fuse Size	A	B	C
8 x 31	8.5	31.5	6.3
10 x 38	10.3	38	10.5
14 x 51	14.3	51	13.8
22 x 58	22.2	58	16.2

# General Purpose Fuses IEC

## Ferrule Fuses gG 400V to 690V with/without Striker gG 8x32, 10x38, 14x51, 22x58

### Ratings - gl-gG with Striker



P201815



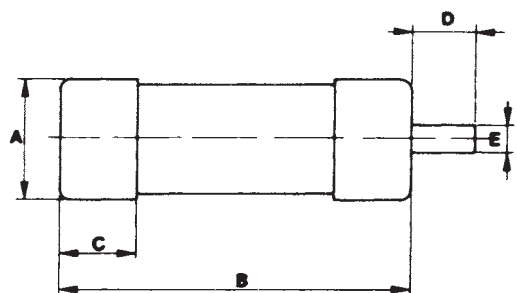
R212075

Size (mm x mm)	Rated Current In (A)	Rated Voltage	Previous Reference	Reference Number	Breaking Capacity	Catalog Number
14 X 51	2	500V	17413	J211033	120kA - 500V	FR14GG69V2P
	4		17419	H212067		FR14GG69V4P
	6		17423	G214113		FR14GG69V6P
	8		17427	R215134		FR14GG69V8P
	10		17431	Z216153		FR14GG69V10P
	12		17433	L217176		FR14GG69V12P
	16		17435	Z218200		FR14GG69V16P
	20		17437	B219237		FR14GG69V20P
	25		17439	L222213		FR14GG69V25P
	32		17443	P200757		FR14GG69V32P
22 X 58	40	690V	17447	P201815	80kA - 690V	FR14GG69V40P
	50		17451	D211557		FR14GG69V50P
	4		18419	R214628		FR22GG69V4P
	6		18423	A215648		FR22GG69V6P
	8		18427	F216665		FR22GG69V8P
	10		18431	W217691		FR22GG69V10P
	12		18433	W218726		FR22GG69V12P
	16		18435	L219775		FR22GG69V16P
	20		18437	P222975		FR22GG69V20P
	25		18439	M201307		FR22GG69V25P
22 X 58	32	500V	18443	S211041	120kA - 500V	FR22GG69V32P
	40		18447	R212075		FR22GG69V40P
	50		18451	M213612		FR22GG69V50P
	63		18455	S214629		FR22GG69V63P
	80		18459	F216159		FR22GG69V80P
	100		18463	T217183		FR22GG69V100P
	125		18465	H218208		FR22GG69V125P
			400V			

Packaging 10

### Dimensions

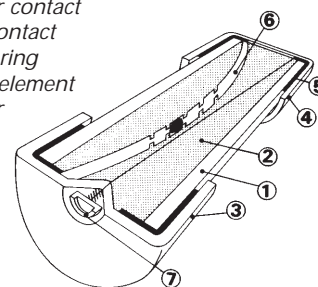
Fuse Size	A	B	C	D	E
14 x 51	14.3	51	13.8	7.5	3.8
22 x 58	22.2	58	16.2	7.5	3.8



### Striker



- 1 Ceramic body
- 2 Sand
- 3 Indicator contact
- 4 Lower contact
- 5 Contact ring
- 6 Melting element
- 7 Indicator



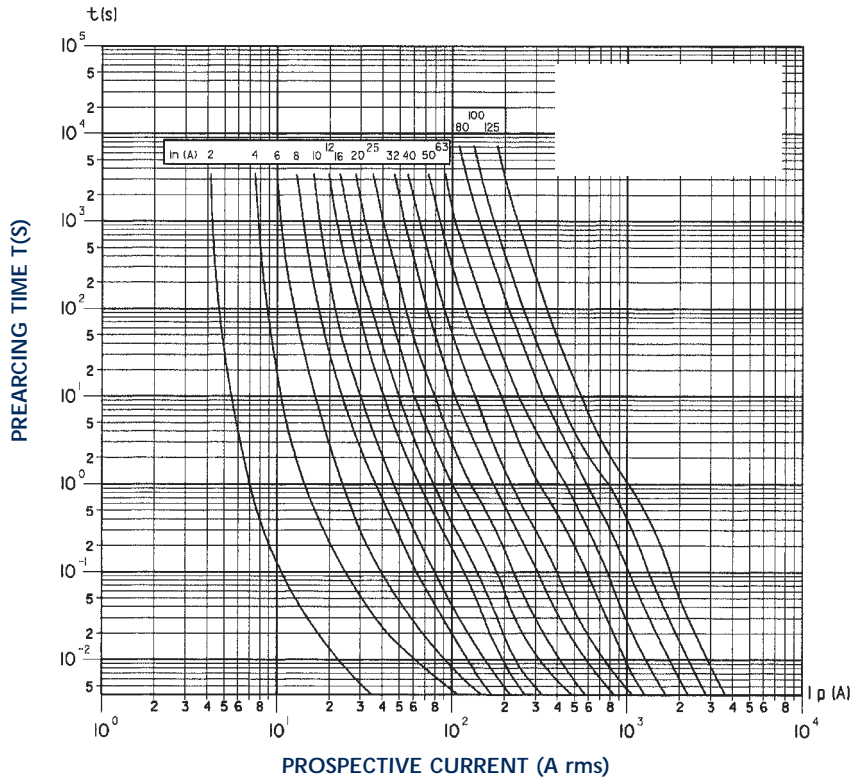
### Neutral

Size (mm x mm)	Previous Reference	Reference Number	Standard Pack/CTN	Catalog Number
10 x 38	19100	R211569		FRN1038
14 x 51	19200	M212600	10	FRN1451
22 x 58	19300	R213616		FRN2258

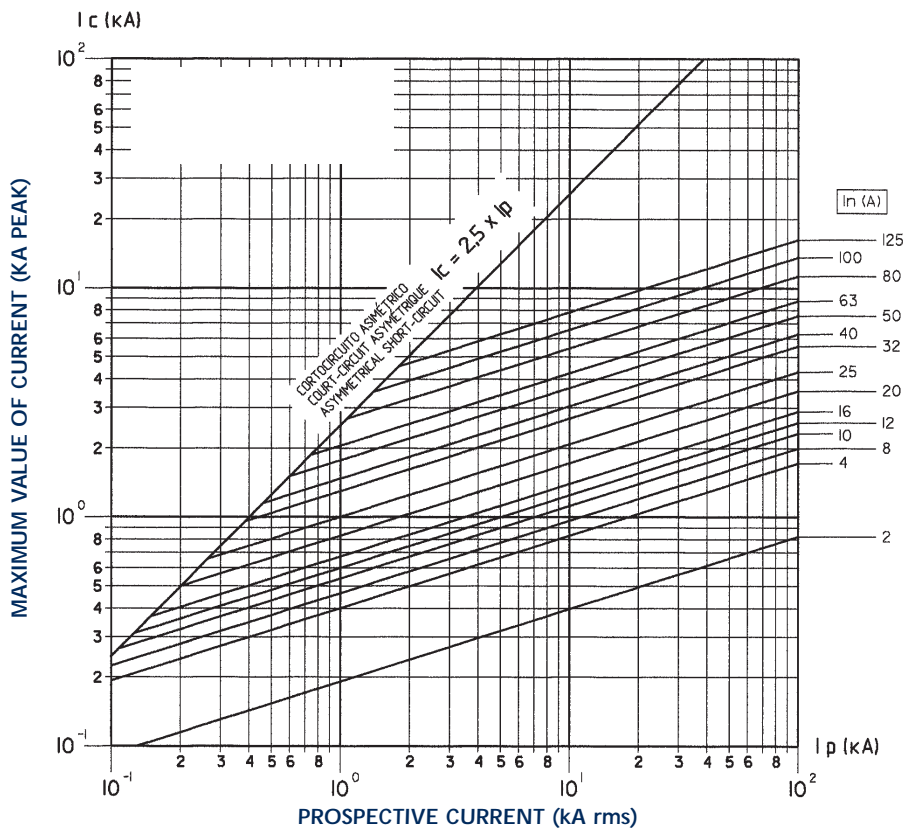
# General Purpose Fuses IEC

Ferrule Fuses  
 gG 400V to 690V  
 with/without Striker  
 gG 8x32, 10x38, 14x51, 22x58

## Characteristics t-I



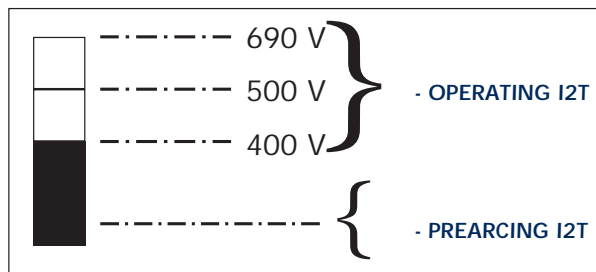
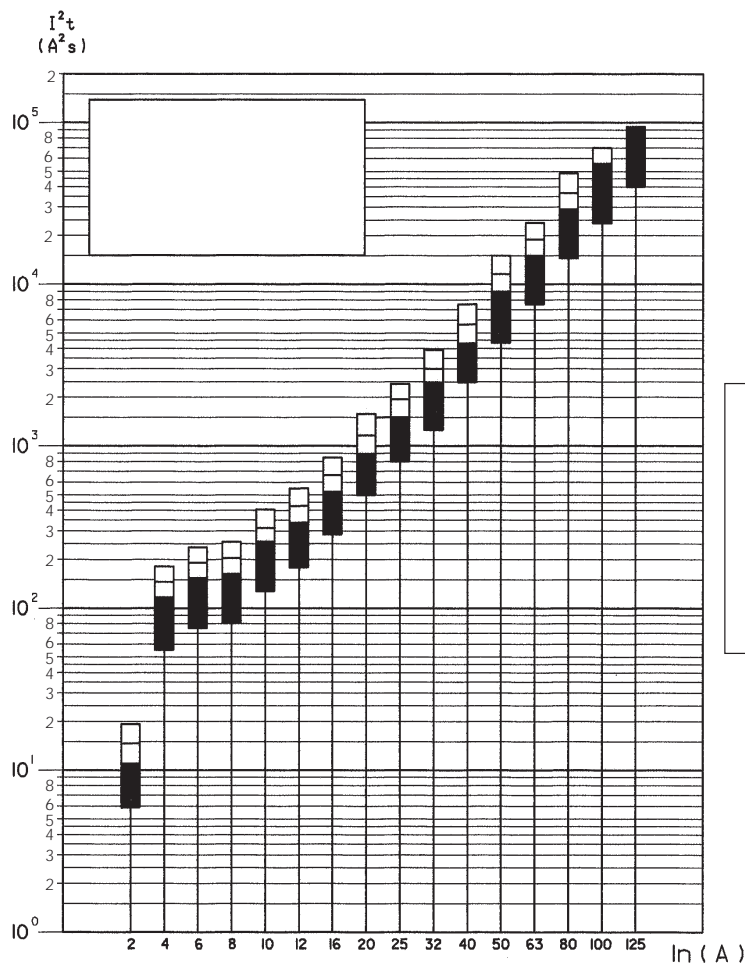
## Cut-off characteristics



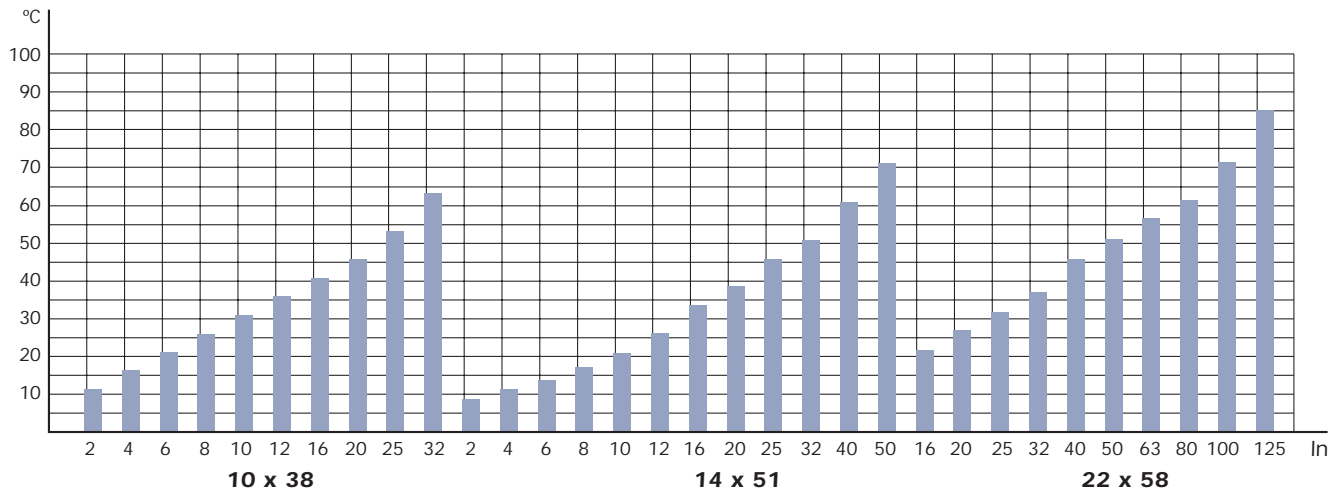
# General Purpose Fuses IEC

Ferrule Fuses  
 gG 400V to 690V  
 with/without Striker  
 gG 8x32, 10x38, 14x51, 22x58

## Characteristics I2t



## Table temperature increase (testing in superior contact)



# General Purpose Fuses IEC

## Ferrule Fuses gG 400V to 690V with/without Striker gG 8x32, 10x38, 14x51, 22x58

**Power loss table**

In	Size		
	10 x 38	14 x 51	22 x 58
0,5 A	2 W		
1 A	2,5 W	3,4 W	
2 A	0,70 W	1 W	1,20 W
4 A	0,80 W	1,10 W	1,30 W
6 A	0,90 W	1,20 W	1,40 W
8 A	1,10 W	1,50 W	1,65 W
10 A	1,35 W	1,80 W	2 W
12 A	1,55 W	2,10 W	2,40 W
16 A	1,90 W	2,55 W	3 W
20 A	2,30 W	3 W	3,40 W
25 A	2,80 W	3,50 W	3,80 W
32 A	3 W	3,80 W	4,30 W
40 A		4,40 W	5,10 W
50 A		4,7 W	5,50 W
63 A			6,70 W
80 A			8 W
100 A			9 W
125 A			12,5 W

Maximum standardized power low.

IEC 269-2-1 NFC 63.213 UNE 21.103-2-1	10 x 38	14 x 51	22 x 58
	25 A	40 A	100 A
	3 W	5 W	9,5 W

Table of maximum length of network in function of In and conductor section.  
Maximum standardized power low.

## gG Class Fuses

Copper conductor section (mm <sup>2</sup> )	Rated Current (In) OF gG Fuses (in A)									
	16	20	25	32	40	50	63	80	100	125
1,5	99/113	86/87	40/59	21/29	13/16	7/9				
2,5		134	110/122	67/84	41/51	25/33	13/20	8/11		
4			183	139	108/119	67/84	46/58	24/32	14/17	7,3/10
6				214	165	139	94/113	55/70	33/41	20/27
10					275	226	172	130	90/108	57/70
16							283	217	168	128
25								336	257	197
35									367	283
50										379

\* 99/118:

- 99: Cond. PVC / 118; Cond. PRC

# General Purpose Fuses IEC

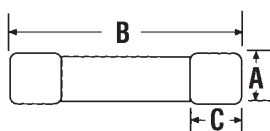
## Ferrule Fuses aM 400V to 690V with/without Striker aM 8x32, 10x38, 14x51, 22x58

### Ratings - aM (Optional Blown-Fuse Indicator)

Size (mm x mm)	Rated In Current (A)	Rated Voltage	Previous Reference		Reference Number		Breaking Capacity	Catalog Number	
			w/o Indicator	w Indicator	w/o Indicator	w Indicator		w/o Indicator	w Indicator
8 x 31	400V	400V	15511	-	C217168	-	20kA - 400V	FR8AM40V1	
			15513	-	R218193	-		FR8AM40V2	
			15519	-	S219229	-		FR8AM40V4	
			15523	-	C222205	-		FR8AM40V6	
			15527	-	F200749	-		FR8AM40V8	
			15531	-	W201292	-		FR8AM40V10	
10 X 38	500V	500V	16503	-	E214617	-	120kA - 500V	FR10AM50V0.16	
			16507	-	M215130	-		FR10AM50V0.25	
			16509	-	W216150	-		FR10AM50V0.5	
			16511	16711	F217171	X219233		FR10AM50V1	FR10AM50V11
			16513	16713	H218714	G222209		FR10AM50V2	FR10AM50V21
			16519	16719	W219232	K200753		FR10AM50V4	FR10AM50V41
	400V	400V	16523	16723	F222208	K201811	FR10AM50V6	FR10AM50V61	
			16527	16727	Z201295	Z211553	FR10AM50V10	FR10AM50V101	
			16531	16731	Y211552	H213102	FR10AM50V10	FR10AM50V101	
			16533	16733	A213601	D214110	FR10AM50V12	FR10AM50V121	
			16535	16735	F214618	P215132	FR10AM50V16	FR10AM50V161	
			16537	16737	X216151	V216655	FR10AM50V20	FR10AM50V201	
			16539	16739	G217172	L217682	FR10AM50V25	FR10AM50V251	
			16543	-	J218715	-	FR10AM50V32		
14 X 51	690V	690V	17507	-	B212590	-	80kA - 690V	FR14AM69V0.25	
			17509	-	L213105	-		FR14AM69V0.5	
			17511	17711	E213605	C212591		FR14AM69V1	FR14AM69V11
			17513	17713	H214114	M213106		FR14AM69V2	FR14AM69V21
			17519	17719	K214622	J214115		FR14AM69V4	FR14AM69V41
			17523	17723	S215135	T215136		FR14AM69V6	FR14AM69V61
	500V	500V	17527	17727	T215642	A216660	FR14AM69V8	FR14AM69V81	
			17531	17731	Z216659	R217687	FR14AM69V10	FR14AM69V101	
			17533	17733	M217177	Q218721	FR14AM69V12	FR14AM69V121	
			17535	17735	Q217686	F219770	FR14AM69V16	FR14AM69V161	
			17537	17737	P218720	R200759	FR14AM69V20	FR14AM69V201	
			17539	17739	E219769	Q201816	FR14AM69V25	FR14AM69V251	
			17543	17743	M222214	F211559	FR14AM69V32	FR14AM69V321	
			17547	17747	Q200758	D212592	FR14AM69V40	FR14AM69V401	
400V	400V	17549	17749	L211035	G213607	FR14AM69V45	FR14AM69V451		
		17551	17751	E211558	M214624	FR14AM69V50	FR14AM69V501		
		18511	-	M219776	-	FR22AM69V1			
		18513	-	T222220	-	FR22AM69V2			
		18519	18719	Q222976	L219246	FR22AM69V4	FR22AM69V41		
		18523	18723	Y200765	V222221	FR22AM69V6	FR22AM69V61		
22 x 58	690V	690V	18527	18727	N201308	Y201823	FR22AM69V8	FR22AM69V81	
			18531	18731	X201822	N211566	FR22AM69V10	FR22AM69V101	
			18533	18731	T211042	K212598	FR22AM69V12	FR22AM69V121	
			18535	18735	M211565	P213614	FR22AM69V16	FR22AM69V161	
			18537	18737	S212076	V214631	FR22AM69V20	FR22AM69V201	
			18539	18739	J212597	D215651	FR22AM69V25	FR22AM69V251	
	500V	500V	18543	18743	V213113	J216668	FR22AM69V32	FR22AM69V321	
			18547	18747	N213613	Z217694	FR22AM69V40	FR22AM69V401	
			18551	18751	R214122	P219778	FR22AM69V50	FR22AM69V501	
			18555	18755	C215650	Z200766	FR22AM69V63	FR22AM69V631	
			18559	18759	H216667	P211567	FR22AM69V80	FR22AM69V801	
			18563	18763	Y217693	L212599	FR22AM69V100	FR22AM69V1001	
			18565	18765	J218209	W214632	FR22AM69V125	FR22AM69V1251	
			18565	18765	J218209	W214632	FR22AM69V125	FR22AM69V1251	

Packaging 10

### Blown-Fuse Indicator



### Dimensions

FUSE SIZE	A	B	C
8 x 31	8.5	31.5	6.3
10 x 38	10.3	38	10.5
14 x 51	14.3	51	13.8
22 x 58	22.2	58	16.2

# General Purpose Fuses IEC

Ferrule Fuses  
aM 400V to 690V  
with/without Striker  
aM 8x32, 10x38, 14x51, 22x58

## Ratings - aM with Striker



X215645



K216669

Size (mm x mm)	Rated Current In (A)	Rated Voltage	Previous Reference	Reference Number	Breaking Capacity	Catalog Number
14 X 51	1	500V	17911	W215644	120kA 500V	FR14AM69V1P
	2		17913	B216661		FR14AM69V2P
	4		17919	C218203		FR14AM69V4P
	6		17923	E219240		FR14AM69V6P
	8		17927	N222215		FR14AM69V8P
	10		17931	S200760		FR14AM69V10P
	12		17933	R201817		FR14AM69V12P
	16		17935	G211560		FR14AM69V16P
	20		17937	E212593		FR14AM69V20P
	25		17939	H213608		FR14AM69V25P
	32	17943	N214625	FR14AM69V32P		
	40	17947	X215645	FR14AM69V40P		
	45	17949	C216662	FR14AM69V45P		
	50	400V	17951	D218204	120kA - 400V	FR14AM69V50P
22 X 58	1	690V	18911	E215652	80kA - 690V	FR22AM69V1P
	2		18913	J216162		FR22AM69V2P
	4		18919	A217695		FR22AM69V4P
	6		18923	Y218728		FR22AM69V6P
	8		18927	Q219779		FR22AM69V8P
	10		18931	S222978		FR22AM69V10P
	12		18933	R201311		FR22AM69V12P
	16		18935	W211044		FR22AM69V16P
	20		18937	W212079		FR22AM69V20P
	25		18939	Q213615		FR22AM69V25P
	32		18943	X214633		FR22AM69V32P
	40		18947	F215653		FR22AM69V40P
	50		18951	K216669		FR22AM69V50P
	63	18955	B217696	FR22AM69V63P		
	80	500V	18959	Z218729	120kA - 500V	FR22AM69V80P
	100	18963	T222979	FR22AM69V100P		
	125	400V	18965	S201312	120kA - 400V	FR22AM69V125P

Packaging 10

## Dimensions

Fuse Size	A	B	C	D	E
14 x 51	14.3	51	13.8	7.5	3.8
22 x 58	22.2	58	16.2	7.5	3.8

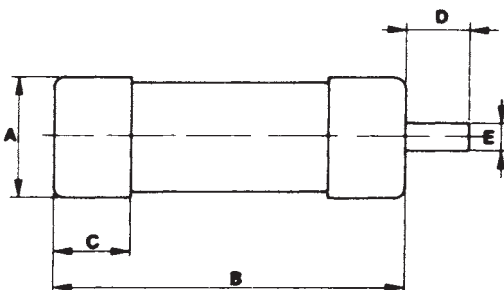
## Striker



BEFORE



AFTER



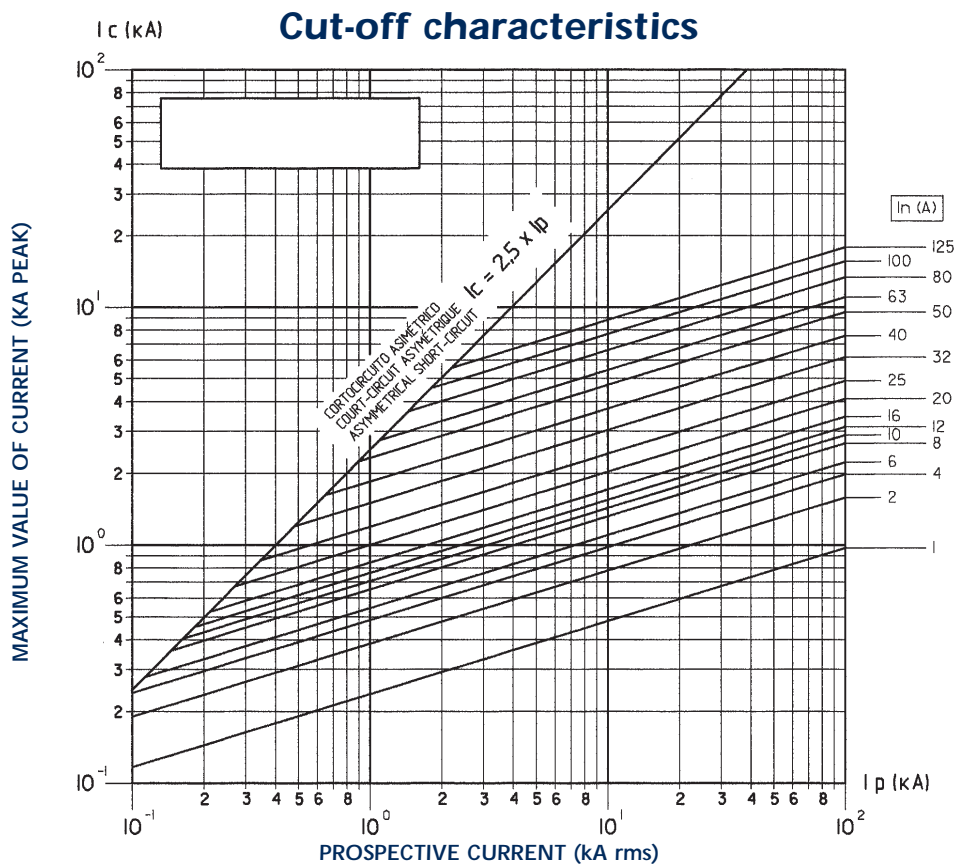
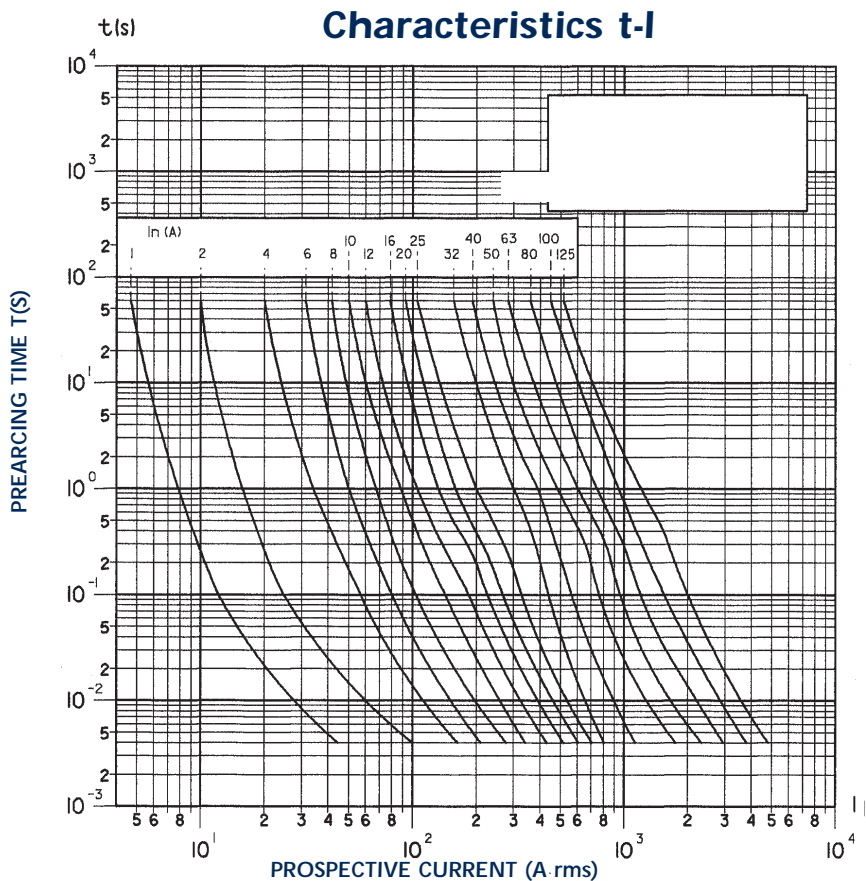
## Neutral

Size (mm x mm)	Previous Reference	Reference Number	Standard Pack/CTN	Catalog Number
10 x 38	19100	R211569		FRN1038
14 x 51	19200	M212600	10	FRN1451
22 x 58	19300	R213616		FRN2258



# General Purpose Fuses IEC

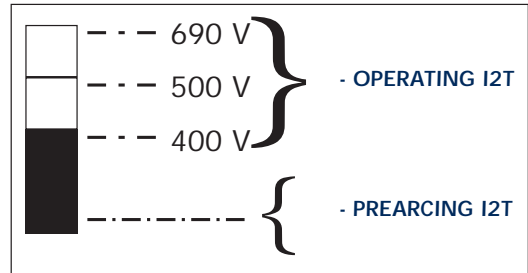
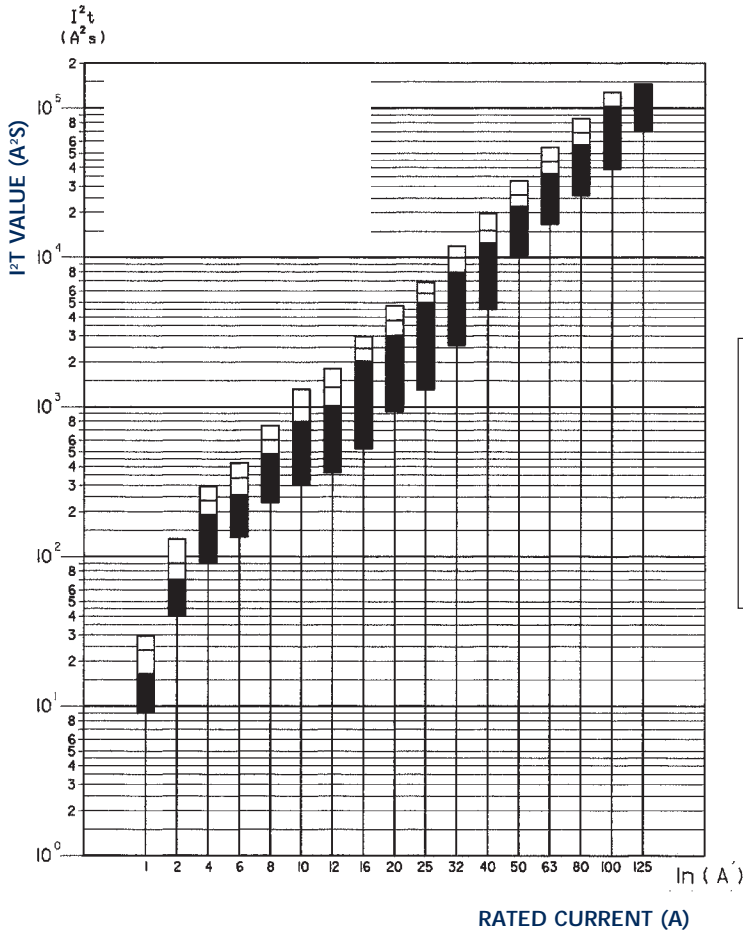
Ferrule Fuses  
 aM 400V to 690V  
 with/without Striker  
 aM 8x32, 10x38, 14x51, 22x58



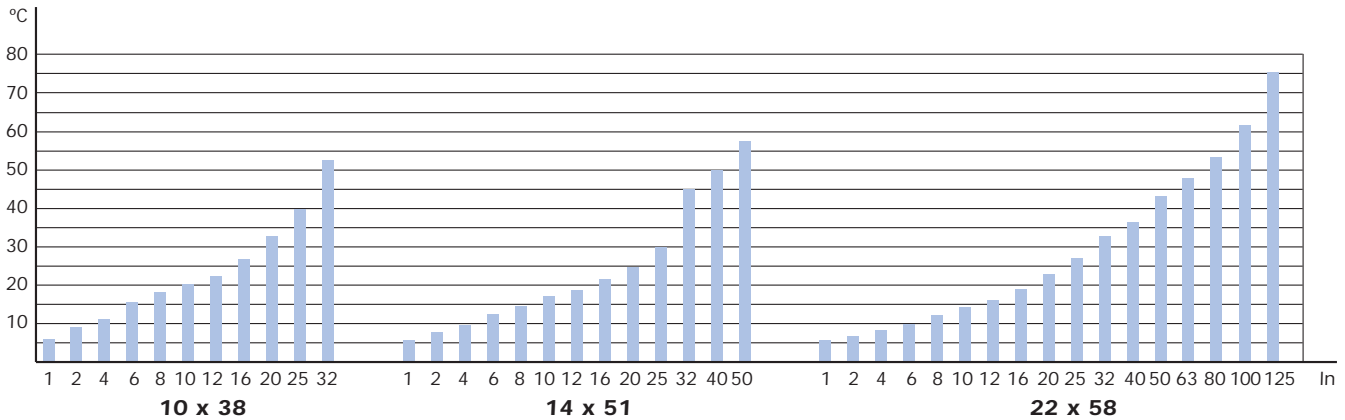
# General Purpose Fuses IEC

Ferrule Fuses  
 gG 400V to 690V  
 with/without Striker  
 aM 8x32, 10x38, 14x51, 22x58

## Characteristics I2t



## Temperature increase table (testing in superior contact)



# General Purpose Fuses IEC

Ferrule Fuses  
aM 400V to 690V  
with/without Striker  
aM 8x32, 10x38, 14x51, 22x58

## Power loss table

In	Size			
	10 x 38	14 x 51	22 x 58	
0,16 A	0,35 W			
0,25 A	0,50 W	0,70 W		
0,5 A	0,50 W	0,75 W		
1 A	0,13 W	0,18 W	0,20 W	
2 A	0,20 W	0,25 W	0,30 W	
4 A	0,30 W	0,40 W	0,50 W	
6 A	0,45 W	0,55 W	0,65 W	
8 A	0,55 W	0,65 W	0,75 W	
10 A	0,65 W	0,75 W	0,85 W	
12 A	0,75 W	0,85 W	1 W	
16 A	0,90 W	1,20 W	1,40 W	
20 A	1,10 W	1,50 W	1,70 W	
25 A	1,40 W	1,80 W	2 W	
32 A	2 W	2,10 W	2,60 W	
40 A		2,60 W	3,20 W	
45 A		2,80 W		
50 A		2,90 W	3,90 W	
63 A			4,60 W	
80 A			5,60 W	
100 A			6,50 W	
125 A			9,50 W	
Maximum standardized power low.	IEC 269-2-1	10 x 38	14 x 51	22 x 58
	NFC 63.213	16 A	50 A	100 A
	UNE 21.103-2-1	1,2 W	3 W	7 W

Table of maximum length of network in function of In and conductor section.  
Maximum standardized power low.

## aM Class Fuses

Copper conductor section (mm <sup>2</sup> )	Rated Current (In) OF aM Fuses (in A)									
	16	20	25	32	40	50	63	80	100	125
1,5	55/64	37/45	25/30	15/20						
2,5	116	84/94	58/68	40/49	26/32	17/20				
4	181	147	118	84/95	58/68	42/48	28/33	18/23		
6	273	223	178	139	105/117	79/89	55/64	37/42	26/31	14/20
10				227	181	147	113/125	80/94	57/69	40/47
16						236	189	151	120	83/97
25								231	185	147
35									262	210