

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

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

Ratings - aM (Optional Blown-Fuse Indicator)



S219229



F214618



Q217686

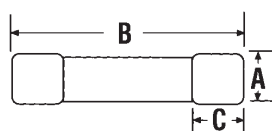


C215650

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	20kA - 400V	15511	-	C217168	-	FR8AM40V1		
			15513	-	R218193	-		FR8AM40V2	
			15519	-	S219229	-		FR8AM40V4	
			15523	-	C222205	-		FR8AM40V6	
			15527	-	F200749	-		FR8AM40V8	
			15531	-	W201292	-		FR8AM40V10	
10 X 38	500V	120kA - 500V	0.16	-	E214617	-	FR10AM50V0.16		
			0.25	-	M215130	-	FR10AM50V0.25		
			0.5	-	W216150	-	FR10AM50V0.5		
			1	16711	F217171	X219233	FR10AM50V1	FR10AM50V11	
			2	16713	H218714	G222209	FR10AM50V2	FR10AM50V21	
			4	16719	W219232	K200753	FR10AM50V4	FR10AM50V41	
	400V	120kA - 400V	120kA - 400V	6	16723	F222208	K201811	FR10AM50V6	FR10AM50V61
				8	16727	Z201295	Z211553	FR10AM50V10	FR10AM50V101
				10	16731	Y211552	H213102	FR10AM50V10	FR10AM50V101
				12	16733	A213601	D214110	FR10AM50V12	FR10AM50V121
				16	16735	F214618	P215132	FR10AM50V16	FR10AM50V161
				20	16737	X216151	V216655	FR10AM50V20	FR10AM50V201
14 X 51	690V	80kA - 690V	25	16739	G217172	L217682	FR10AM50V25	FR10AM50V251	
			32	-	J218715	-	FR10AM50V32		
			0.25	-	B212590	-	FR14AM69V0.25		
			0.5	-	L213105	-	FR14AM69V0.5		
			1	17711	E213605	C212591	FR14AM69V1	FR14AM69V11	
			2	17713	H214114	M213106	FR14AM69V2	FR14AM69V21	
	500V	120kA - 500V	120kA - 500V	4	17719	K214622	J214115	FR14AM69V4	FR14AM69V41
				6	17723	S215135	T215136	FR14AM69V6	FR14AM69V61
				8	17727	T215642	A216660	FR14AM69V8	FR14AM69V81
				10	17731	Z216659	R217687	FR14AM69V10	FR14AM69V101
				12	17733	M217177	Q218721	FR14AM69V12	FR14AM69V121
				16	17735	Q217686	F219770	FR14AM69V16	FR14AM69V161
22 x 58	690V	80kA - 690V	20	17737	P218720	R200759	FR14AM69V20	FR14AM69V201	
			25	17739	E219769	Q201816	FR14AM69V25	FR14AM69V251	
			32	17743	M222214	F211559	FR14AM69V32	FR14AM69V321	
			40	17747	Q200758	D212592	FR14AM69V40	FR14AM69V401	
			45	17749	L211035	G213607	FR14AM69V45	FR14AM69V451	
			50	17751	E211558	M214624	FR14AM69V50	FR14AM69V501	
	400V	120kA - 400V	120kA - 400V	1	-	M219776	-	FR22AM69V1	
				2	-	T222220	-	FR22AM69V2	
				4	18719	Q222976	L219246	FR22AM69V4	FR22AM69V41
				6	18723	Y200765	V222221	FR22AM69V6	FR22AM69V61
				8	18727	N201308	Y201823	FR22AM69V8	FR22AM69V81
				10	18731	X201822	N211566	FR22AM69V10	FR22AM69V101
500V	690V	80kA - 690V	12	18731	T211042	K212598	FR22AM69V12	FR22AM69V121	
			16	18735	M211565	P213614	FR22AM69V16	FR22AM69V161	
			20	18737	S212076	V214631	FR22AM69V20	FR22AM69V201	
			25	18739	J212597	D215651	FR22AM69V25	FR22AM69V251	
			32	18743	V213113	J216668	FR22AM69V32	FR22AM69V321	
			40	18747	N213613	Z217694	FR22AM69V40	FR22AM69V401	
	400V	120kA - 400V	120kA - 400V	50	18751	R214122	P219778	FR22AM69V50	FR22AM69V501
				63	18755	C215650	Z200766	FR22AM69V63	FR22AM69V631
				80	18759	H216667	P211567	FR22AM69V80	FR22AM69V801
				100	18763	Y217693	L212599	FR22AM69V100	FR22AM69V1001
				125	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

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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

Ratings - aM with Striker

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		17951	D218204		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		18959	Z218729		FR22AM69V80P
	100		18963	T222979		FR22AM69V100P
125	18965	S201312	FR22AM69V125P			

Packaging 10



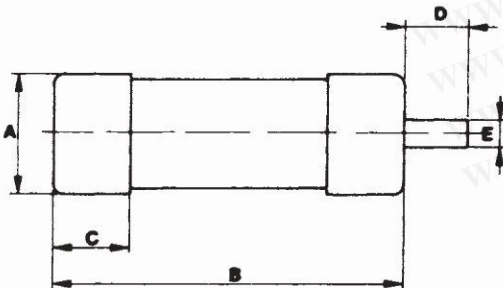
X215645



K216669

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

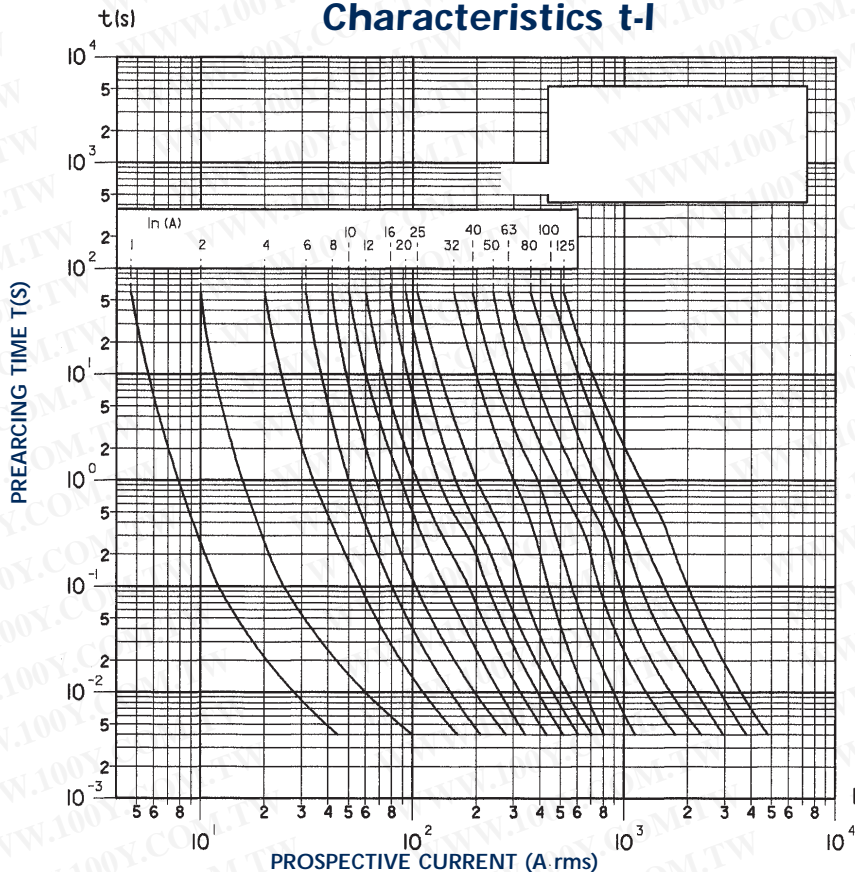
Neutral

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

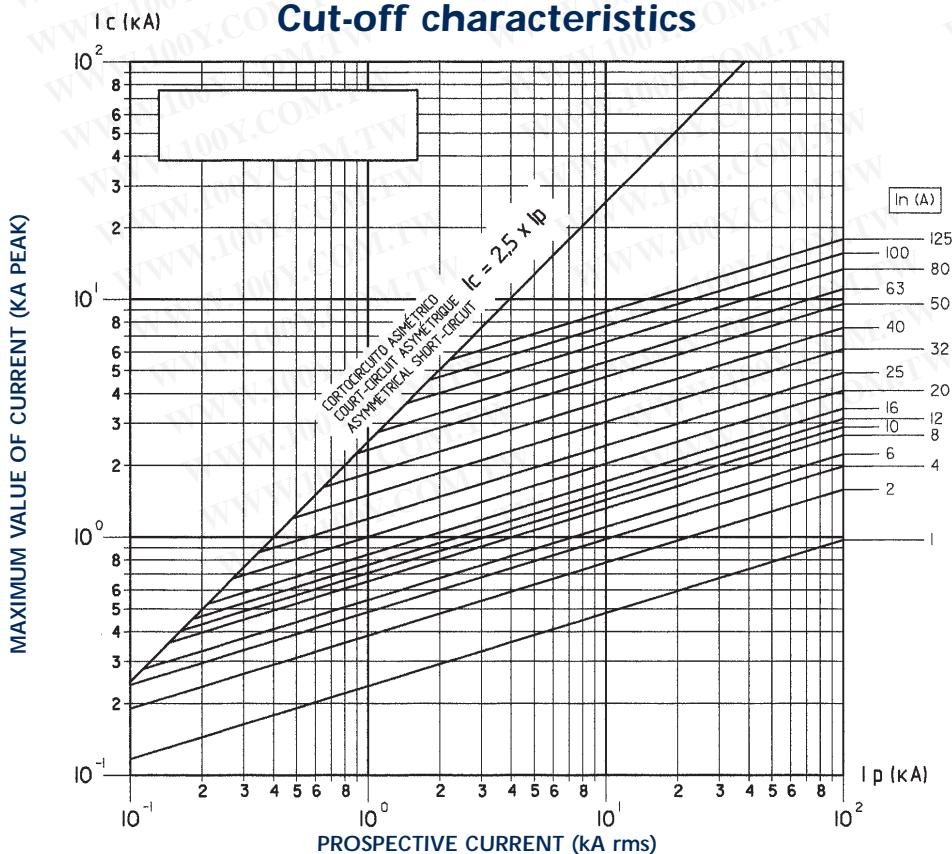
General Purpose Fuses IEC

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with/without Striker
aM 8x32, 10x38, 14x51, 22x58

Characteristics t-I



Cut-off characteristics

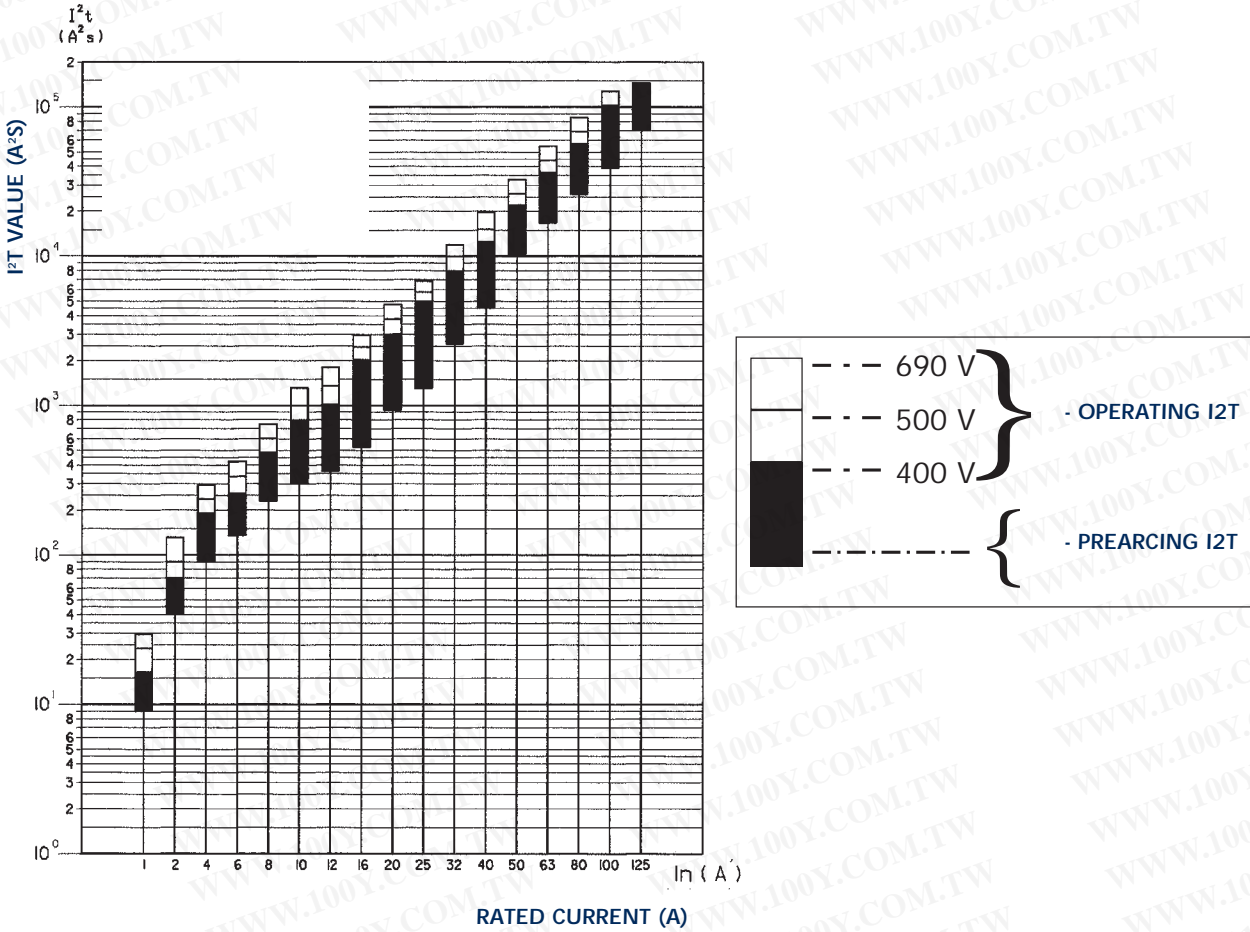


General Purpose Fuses IEC

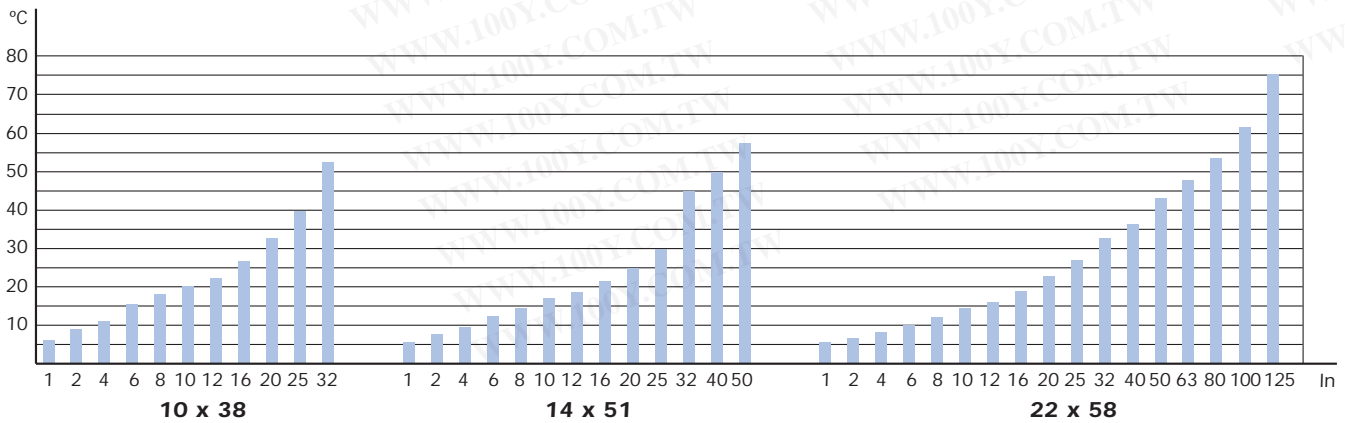
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Ferrule Fuses
 gG 400V to 690V
 with/without Striker
 aM 8x32, 10x38, 14x51, 22x58

Characteristics I²t



Temperature increase table (testing in superior contact)



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 ²)	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	

gG 8.5 x 31.5 - 400V



Size	Current (A)	Voltage (V)	Cat. number w/o indicator	Ref. number w/o indicator	Cat. number with indicator	Ref. number with indicator	Voltage (V)	Ref. number with striker	Cat. number with striker	Pckg
8,5 x 31,5	0,5	400	FR8GG40V0.5	P218191J	-					10
8,5 x 31,5	1	400	FR8GG40V1	C218709J	-					10
8,5 x 31,5	2	400	FR8GG40V2	Q219227J	FR8GG40V2I	B222204J				10
8,5 x 31,5	4	400	FR8GG40V4	W222958J	FR8GG40V4I	X222959J				10
8,5 x 31,5	6	400	FR8GG40V6	A211025J	FR8GG40V6I	V201291J				10
8,5 x 31,5	8	400	FR8GG40V8	B213096J	FR8GG40V8I	B211026J				10
8,5 x 31,5	10	400	FR8GG40V10	A214613J	FR8GG40V10I	A212060J				10
8,5 x 31,5	12	400	FR8GG40V12	R216146J	FR8GG40V12I	C213097J				10
8,5 x 31,5	16	400	FR8GG40V16	P216650J	FR8GG40V16I	Y214105J				10
8,5 x 31,5	20	400	FR8GG40V20	F217677J	FR8GG40V20I	J215127J				10
8,5 x 31,5	25	400	FR8GG40V25	D218710J	FR8GG40V25I	S216147J				10
8,5 x 31,5	Neutral		FRN832	X211045J	FRN832	X211045J				10

gG 10.3 x 38 - 400/500V



Size	Current (A)	Voltage (V)	Cat. number w/o indicator	Ref. number w/o indicator	Cat. number with indicator	Ref. number with indicator	Voltage (V)	Cat. number with striker	Ref. number with striker	Pckg
10,3 x 38	0,5	500	FR10GG50V0.5	C211027J						10
10,3 x 38	1	500	FR10GG50V1	B212061J						10
10,3 x 38	2	500	FR10GG50V2	D213098J	FR10GG50V2I	S216653J	400	FR10GG40V2P	G083703J	10
10,3 x 38	4	500	FR10GG50V4	X213598J	FR10GG50V4I	E217170J	400	FR10GG40V4P	D084758J	10
10,3 x 38	6	500	FR10GG50V6	K215128J	FR10GG50V6I	T218195J	400	FR10GG40V6P	Y084799J	10
10,3 x 38	8	500	FR10GG50V10	D217169J	FR10GG50V8I	V219231J	400	FR10GG40V8P	F083955J	10
10,3 x 38	10	500	FR10GG50V10	S218194J	FR10GG50V10I	E222207J	400	FR10GG40V10P	A084801J	10
10,3 x 38	12	500	FR10GG50V12	W219761J	FR10GG50V12I	H200751J	400	FR10GG40V12P	G083956J	10
10,3 x 38	16	500	FR10GG50V16	G200750J	FR10GG50V16I	H201809J	400	FR10GG40V16P	X084798J	10
10,3 x 38	20	500	FR10GG50V20	D211028J	FR10GG50V20I	X211551J	400	FR10GG40V20P	Z084800J	10
10,3 x 38	25	400	FR10GG40V25	E213099J	FR10GG40V25I	W212585J	250	FR10GG25V25P	H083957J	10
10,3 x 38	32	400	FR10GG40V32	A214107J	FR10GG40V32I	Z213600J	250	FR10GG25V32P	E083954J	10
10,3 x 38	Neutral		FRN1038	R211569J	FRN1038	R211569J				10

gG 10.3 x 38 - 690V



Size	Current (A)	Voltage (V)	Cat. number w/o indicator	Ref. number w/o indicator	Cat. number with indicator	Ref. number with indicator	Voltage (V)	Cat. number with striker	Ref. number with striker	Pckg
10,3 x 38	1	690	FR10GG69V1	R302787J						10
10,3 x 38	2	690	FR10GG69V2	S302788J						10
10,3 x 38	4	690	FR10GG69V4	T302789J						10
10,3 x 38	6	690	FR10GG69V6	V302790J						10
10,3 x 38	8	690	FR10GG69V8	W302791J						10
10,3 x 38	10	690	FR10GG69V10	X302792J						10
10,3 x 38	12	690	FR10GG69V12	Y302793J						10
10,3 x 38	16	690	FR10GG69V16	Z302794J						10



gG 14 x 51 - 400 to 690V

Size	Current (A)	Voltage (V)	Cat.number w/o indicator	Ref.number w/o indicator	Voltage (V)	Cat.number with striker	Ref.number with striker	Pckg
14 x 51	1	690	FR14GG69V1	K218716J	500	-	-	10
14 x 51	2	690	FR14GG69V2	Y219234J	500	FR14GG50V2P	J211033J	10
14 x 51	4	690	FR14GG69V4	A219765J	500	FR14GG50V4P	H212067J	10
14 x 51	6	690	FR14GG69V6	H222210J	500	FR14GG50V6P	G214113J	10
14 x 51	8	690	FR14GG69V8	D222965J	500	FR14GG50V8P	R215134J	10
14 x 51	10	690	FR14GG69V10	L200754J	500	FR14GG50V10P	Z216153J	10
14 x 51	12	690	FR14GG69V12	L201812J	500	FR14GG50V12P	L217176J	10
14 x 51	16	690	FR14GG69V16	A211554J	500	FR14GG50V16P	Z218200J	10
14 x 51	20	690	FR14GG69V20	Z212588J	500	FR14GG50V20P	B219237J	10
14 x 51	25	690	FR14GG69V25	C213603J	500	FR14GG50V25P	L222213J	10
14 x 51	32	500	FR14GG50V32	W216656J	500	FR14GG50V32P	P200757J	10
14 x 51	40	500	FR14GG50V40	X218198J	500	FR14GG50V40P	P201815J	10
14 x 51	50	400	FR14GG40V50	Z219235J	400	FR14GG40V50P	D211557J	10
14 x 51	Neutral		FRN1451	M212600J		FRN1451	M212600J	10
Fuse extractor			PMCP 14	M097554A		PMCP 14	M097554A	1

gG 22 x 58 - 400 to 690V

Size	Current (A)	Voltage (V)	Cat.number w/o indicator	Ref.number w/o indicator	Voltage (V)	Cat.number with striker	Ref.number with striker	Pckg
22 x 58	2	690	FR22GG69V2	F219241J	-	-		10
22 x 58	4	690	FR22GG69V4	H219772J	690	FR22GG69V4P	R214628J	10
22 x 58	6	690	FR22GG69V6	P222216J	690	FR22GG69V6P	A215648J	10
22 x 58	8	690	FR22GG69V8	L222972J	690	FR22GG69V8P	F216665J	10
22 x 58	10	690	FR22GG69V10	T200761J	690	FR22GG69V10P	W217691J	10
22 x 58	12	690	FR22GG69V12	J201304J	690	FR22GG69V12P	W218726J	10
22 x 58	16	690	FR22GG69V16	S201818J	690	FR22GG69V16P	L219775J	10
22 x 58	20	690	FR22GG69V20	P211038J	690	FR22GG69V20P	P222975J	10
22 x 58	25	690	FR22GG69V25	N212072J	690	FR22GG69V25P	M201307J	10
22 x 58	32	690	FR22GG69V32	F212594J	690	FR22GG69V32P	S211041J	10
22 x 58	40	690	FR22GG69V40	J213609J	690	FR22GG69V40P	R212075J	10
22 x 58	50	690	FR22GG69V50	P214626J	690	FR22GG69V50P	M213612J	10
22 x 58	63	690	FR22GG69V63	Y215646J	500	FR22GG50V63P	S214629J	10
22 x 58	80	690	FR22GG69V80	O217180J	500	FR22GG50V80P	F216159J	10
22 x 58	100	500	FR22GG50V100	E218205J	500	FR22GG50V100P	T217183J	10
22 x 58	125	400	FR22GG40V125	J219773J	400	FR22GG40V125P	H218208J	10
22 x 58	Neutral		FRN2258	R213616J		FRN2258	R213616J	10
Fuse extractor			PMCP20+22	K100036A		PMCP20+22	K100036A	1

Functions

gG curve industrial fuse (black marking) – NF EN 60269-1 and 2-1 compliant.
 Protection for power cables and equipment except motors.
 Selective coordination between two fuses two ratings apart (e.g. 160A and 100A).
 Breaking capacity: 20 kA for 8.5 x 31.5 fuses - 80 to 120 kA for other sizes at rated voltage.

Applications

Protection from overloads and short circuits at all levels in power distribution.
 Mains, branch circuits, service entrance equipment.



for sizes 10, 14 and 22

To select a fuse holder, fuse disconnecter or fuse switch-disconnector for our ferrule-style fuses, turn to pages 14 to 18.

For further information on our ferrule fuse lines, consult our complete technical catalog The Advisor on CD-ROM or on our Web site at

<http://www.ferrazshawmut.com/en/act-e-advisor.php>

under the heading IEC general purpose fuses > ferrule fuses



Modulostar breakthrough a range for every kind of protection now on the shelves!

- Modulostar fuse holders and fuse disconnectors meet every need for ferrule-style fuses, from 8mm to 27mm in diameter. And they cover applications from low voltage power distribution in residential and office environments to protection of high power electronic devices in enclosures. Only a brand name signed by a global leader in the industry can guarantee an OEM or electrical contractor that his customer is getting top-quality components.
- CMS 8, 10, 14, 22, 27 and USFM models are now available on the shelves.

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Standard width for a perfect fit in enclosures

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Dual position DIN rail snap for easier mounting and dismounting

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The Ferraz Shawmut indicator eye for instant blown fuse detection



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aM 8.5 x 31,5 - 400V

Size	Current (A)	Voltage (V)	Cat. number w/o indicator	Ref. number w/o indicator	Cat. number with indicator	Ref. number with indicator	Voltage (V)	Cat. number with striker	Ref. number with striker	Pckg
8,5 x 31,5	1	400	FR8AM40V1	C217168J						10
8,5 x 31,5	2	400	FR8AM40V2	R218193J						10
8,5 x 31,5	4	400	FR8AM40V4	S219229J						10
8,5 x 31,5	6	400	FR8AM40V6	C222205J						10
8,5 x 31,5	8	400	FR8AM40V8	F200749J						10
8,5 x 31,5	10	400	FR8AM40V10	W201292J						10
8,5 x 31,5	Neutral		FRN832	X211045J						10

aM 10.3 x 38 - 400 to 690V

10,3 x 38	0,16	500	FR10AM50V0.16	E214617J						10
10,3 x 38	0,25	500	FR10AM50V0.25	M215130J						10
10,3 x 38	0,5	500	FR10AM50V0.5	W216150J						10
10,3 x 38	1	500	FR10AM50V1	F217171J	FR10AM50V11	X219233J				10
10,3 x 38	2	500	FR10AM50V2	H218714J	FR10AM50V21	G222209J	400	FR10AM40V2P	Z084984J	10
10,3 x 38	4	500	FR10AM50V4	W219232J	FR10AM50V41	K200753J	400	FR10AM40V4P	Y085259J	10
10,3 x 38	6	500	FR10AM50V6	F222208J	FR10AM50V61	K201811J	400	FR10AM40V6P	W085257J	10
10,3 x 38	8	500	FR10AM50V8	Z201295J	FR10AM50V81	Z211553J	400	FR10AM40V8P	A084985J	10
10,3 x 38	10	500	FR10AM50V10	Y211552J	FR10AM50V101	H213102J	400	FR10AM40V10P	B084986J	10
10,3 x 38	12	500	FR10AM50V12	A213601J	FR10AM50V121	D214110J	400	FR10AM40V12P	X085258J	10
10,3 x 38	16	500	FR10AM50V16	F214618J	FR10AM50V161	P215132J	400	FR10AM40V16P	C084757J	10
10,3 x 38	20	500	FR10AM50V20	X216151J	FR10AM50V201	V216655J	400	FR10AM40V20P	V085256J	10
10,3 x 38	25	400	FR10AM40V25	G217172J	FR10AM40V251	L217682J	250	FR10AM25V25P	A076038J	10
10,3 x 38	32	400	FR10AM40V32	J218715J			250	FR10AM25V32P	B076039J	10

NEW

10,3 x 38	1	690	FR10AM69V1	H302779J						10
10,3 x 38	2	690	FR10AM69V2	J302780J						10
10,3 x 38	4	690	FR10AM69V4	K302781J						10
10,3 x 38	6	690	FR10AM69V6	L302782J						10
10,3 x 38	8	690	FR10AM69V8	M302783J						10
10,3 x 38	10	690	FR10AM69V10	N302784J						10
10,3 x 38	12	690	FR10AM69V12	P302785J						10
10,3 x 38	Neutral		FRN1038	R211569J	FRN1038	R211569J				10

aM 14 x 51 - 400 to 690V

14 x 51	0,25	690	FR14AM69V0.25	B212590J						10
14 x 51	0,5	690	FR14AM69V0.5	L213105J						10
14 x 51	1	690	FR14AM69V1	E213605J			500	FR14AM50V1P	W215644J	10
14 x 51	2	690	FR14AM69V2	H214114J			500	FR14AM50V2P	B216661J	10
14 x 51	4	690	FR14AM69V4	K214622J			500	FR14AM50V4P	C218203J	10
14 x 51	6	690	FR14AM69V6	S215135J			500	FR14AM50V6P	E219240J	10
14 x 51	8	690	FR14AM69V8	T215642J			500	FR14AM50V8P	N222215J	10
14 x 51	10	690	FR14AM69V10	Z216659J			500	FR14AM50V10P	S200760J	10
14 x 51	12	690	FR14AM69V12	M217177J			500	FR14AM50V12P	R201817J	10
14 x 51	16	690	FR14AM69V16	Q217686J			500	FR14AM50V16P	G211560J	10
14 x 51	20	690	FR14AM69V20	P218720J			500	FR14AM50V20P	E212593J	10
14 x 51	25	690	FR14AM69V25	E219769J			500	FR14AM50V25P	H213608J	10
14 x 51	32	500	FR14AM50V32	M222214J			500	FR14AM50V32P	N214625J	10
14 x 51	40	500	FR14AM50V40	Q200758J			500	FR14AM50V40P	X215645J	10
14 x 51	45	500	FR14AM50V45	L211035J			500	FR14AM50V45P	C216662J	10
14 x 51	50	400	FR14AM40V50	E211558J			400	FR14AM40V50P	D218204J	10
14 x 51	Neutral		FRN1451	M212600J				FRN1451	M212600J	10
Fuse extractor			PMCP 14	M097554A				PMCP 14	M097554A	1

aM 22 x 58 - 400 to 690V

Size	Current (A)	Voltage (V)	Cat. number w/o indicator	Ref. number w/o indicator	Cat. number with indicator	Ref. number with indicator	Voltage (V)	Cat. number with striker	Ref. number with striker	Pckg
22 x 58	1	690	FR22AM69V1	M219776J			690	FR22AM69V1P	E215652J	10
22 x 58	2	690	FR22AM69V2	T222220J			690	FR22AM69V2P	J216162J	10
22 x 58	4	690	FR22AM69V4	Q222976J			690	FR22AM69V4P	A217695J	10
22 x 58	6	690	FR22AM69V6	Y200765J			690	FR22AM69V6P	Y218728J	10
22 x 58	8	690	FR22AM69V8	N201308J			690	FR22AM69V8P	O219779J	10
22 x 58	10	690	FR22AM69V10	X201822J			690	FR22AM69V10P	S222978J	10
22 x 58	12	690	FR22AM69V12	T211042J			690	FR22AM69V12P	R201311J	10
22 x 58	16	690	FR22AM69V16	M211565J			690	FR22AM69V16P	W211044J	10
22 x 58	20	690	FR22AM69V20	S212076J			690	FR22AM69V20P	W212079J	10
22 x 58	25	690	FR22AM69V25	J212597J			690	FR22AM69V25P	Q213615J	10
22 x 58	32	690	FR22AM69V32	V213113J			690	FR22AM69V32P	X214633J	10
22 x 58	40	690	FR22AM69V40	N213613J			690	FR22AM69V40P	F215653J	10
22 x 58	50	690	FR22AM69V50	R214122J			690	FR22AM69V50P	K216669J	10
22 x 58	63	690	FR22AM69V63	C215650J			500	FR22AM50V63P	B217696J	10
22 x 58	80	690	FR22AM69V80	H216667J			500	FR22AM50V80P	Z218729J	10
22 x 58	100	500	FR22AM50V100	Y217693J			500	FR22AM50V100P	T222979J	10
22 x 58	125	400	FR22AM40V125	J218209J			400	FR22AM40V125P	S201312J	10
22 x 58	Neutral		FRN2258	R213616J				FRN2258	R213616J	10
Fuse extractor			PMCP20+22	K100036A				PMCP20+22	K100036A	1

Functions

aM curve industrial fuse (green marking) – NF EN 60269-1 and 2-1 compliant.
 Direct protection for electrical motors, must be used in combination with another protection device (thermal relay).
 Easy selective coordination with upstream gG fuses.
 Selective coordination between two fuses two ratings apart (i.e. 160A and 100A).
 Breaking capacity: 20 kA for 8.3 x 31.5 fuses - 80 to 120 kA for other sizes at rated voltage.

Applications

Protection for all low voltage electrical motors with direct-on-line start.



for sizes 10, 14 and 22

For further information on our ferrule fuse lines, consult our complete technical catalog **The Advisor** on CD-ROM or on our Web site at

<http://www.ferrazshawmut.com/en/act-e-advisor.php>

under the heading **IEC general purpose fuses**
 > ferrule fuses

Modulostar CMS8



Size	CCD configurations	Cat. number w/o indicator light	Ref.number	Cat. number with indicator light	Ref.number	Pckg
8 x 31,5	1	CMS81	X305000K	CMS81I	E305007K	12
8 x 31,5	1+N	CMS81N	Y305001F	CMS81NI	F305008F	6
8 x 31,5	2	CMS82	Z305002F	CMS82I	G305009F	6
8 x 31,5	3	CMS83	A305003D	CMS83I	H305010D	4
8 x 31,5	3+N	CMS83N	B305004C	CMS83NI	J305011C	3
8 x 31,5	4	CMS84	C305005C	CMS84I	K305012C	3
8 x 31,5	N *	CMS810N	D305006K			12

Modulostar CMS10



Size	CCD configurations	Cat. number w/o indicator light	Ref.number	Cat. number with indicator light	Ref.number	Pckg
10 x 38	1	CMS101	T305020K	CMS101I	A305026K	12
10 x 38	1+N	CMS101N	V305021F	CMS101NI	B305027F	6
10 x 38	2	CMS102	W305022F	CMS102I	C305028F	6
10 x 38	3	CMS103	X305023D	CMS103I	D305029D	4
10 x 38	3+N	CMS103N	Y305024C	CMS103NI	E305030C	3
10 x 38	4	CMS104	Z305025C	CMS104I	F305031C	3

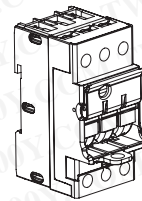
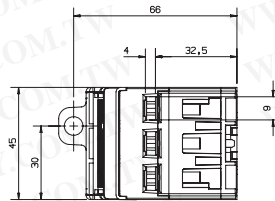
Modulostar CMSFM10



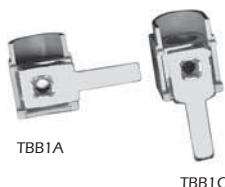
Compact Fusegear for Motor starter 3pole/45mm

Nb of pole	Cat Number	Ref.Number	Fonction		Pack
			Fuse Holder	Fuse Discon.	
3 poles	CMSFM10	S302765A	w/o Indicator		1
system /	CMSFM10M	T302766A		w/o Indicator	1
45 mm	CMSFM10I	W302768A	with Indicator		1
width	CMSFM10MI	V302767A		with Indicator	1

Fuse holder is without Prebreaking Microswitch (see accessories)
Fuse disconnector is with mounted Prebreaking Microswitch

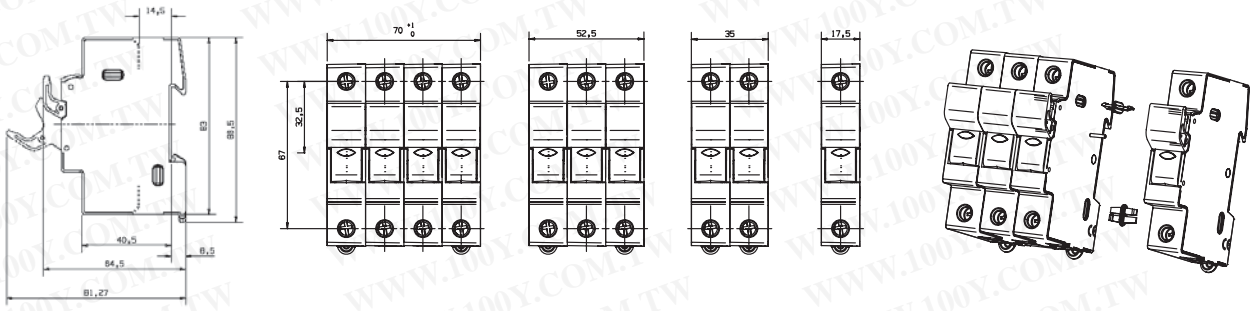


Accessories for CMS8, CMS10

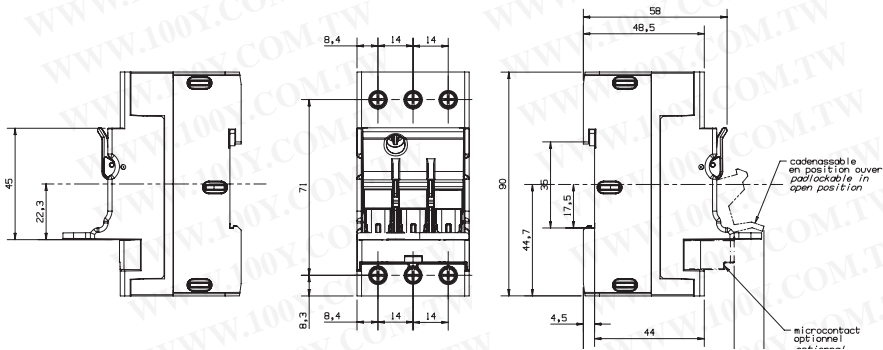


Description	Cat.number	Ref. number	Nb.Modules 17,5 mm	Courant maxi RMS (A)	Nb. of pole	Pckg
Multi-pole assembly kit	CMS810PAK	Z233725K				12
Lock	LOCK	M223525A				1
Locking kit	TAGLOCKCMS810	A235773A				1
Single-phase size 8/10 comb connection	CMS810BB1F13	T210306J	13	63	1	10
2-phase size 8/10 comb connection	CMS810BB2F6	V210307J	6	63	2	10
3-phase size 8/10 comb connection	CMS810BB3F4	W210308J	4	100	3	10
4-phase size 8/10 comb connection	CMS810BB4F3	X210309J	3	100	4	10
Single-pole terminal, side	TBB1C	E210316P		90		50
2/3-pole terminal, side	TBB23C	G210318P		90		50
Single-pole terminal, axial	TBB1A	D210315P		90		50
2/3-pole terminal, axial	TBB23A	F210317P		90		50

Drawings for CMS8-10



Drawings for compact fusegear Motor starter



Accessories

Catalog Number	Reference	Cond.
PLUG3CMSFM	B264041E	5
WBAR2CMSFM	C264042E	5
RDINCCMSFM	D264043A	1
WIRCMSFMC	E264044E	5

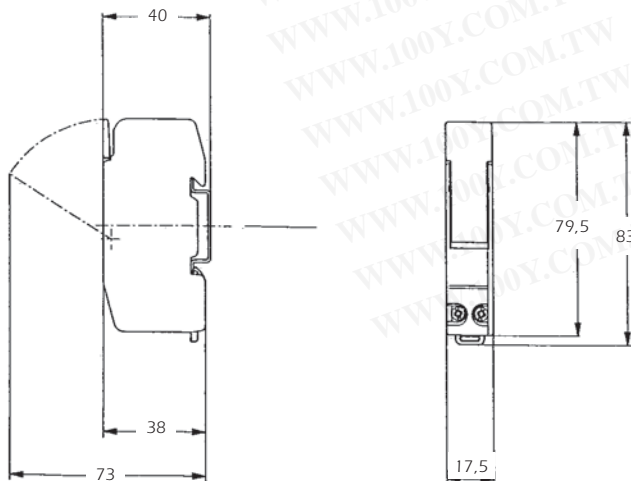
CCR fuse holder

Size	Number of pole	Cat.number	Reference Number	Number of Mod.	Pckg
10x38	N	CCR810N	Z214635K	1	12
10x38	1	CCR101	N218213K	1	12
10x38	1+N	CCR1N1M	H215655K	1	12
10x38	2	CCR102	X233723F	2	6
10x38	3	CCR103	Y233724D	3	4

Assembly accessories	Cat. Number	Ref. Number	Pckg
CCR multi-pole assembly kit	CMS810PAK	Z233725K	12*

* 12 per bag

Compact Fuse Holder



- Direct mounting on symmetrical DIN rail
- Wire cross sections: 1 x 10mm².
- Compact footprint.
- Insulated to IP 20 standard
- Single-pole weight
 - 8x31 ; 58g
 - 10x38 ; 63g
- Neutral tubes are systematically built in

With the indicator light a blown fuse can be quickly located if power is still on

MSC 10 fuse holder Phase + Neutral (1 mod.)

Fuse holder phase+neutral in a 17.5 mm - width compact module

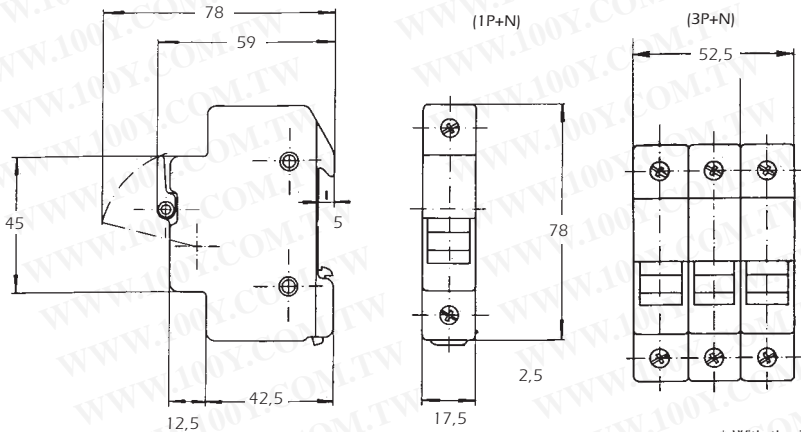
Compact Fuse Holder



Nb. of Poles	Model without blown fuse indicator light		Model with blown fuse indicator light		Nb Mod	Pckg
	Cat. Number	Ref. number	Cat. Number	Ref. Number		
1+N	MSC101N1M	Y201317K	MSC101N1MI	C211050K	1	12
3+N	MSC103N3M	S218217D	MSC103N3MI	S226612D	3	4

Assembly accessories	Cat. Number	Ref. Number	Pckg
2-pole pin	MSCMSDMAASS2	G215125J	10*
3-pole pin	MSCMSDMAASS3	Q216145J	10*
4-pole pin	MSCMSDMAASS4	A217166J	10*

* 10 Pins per bag



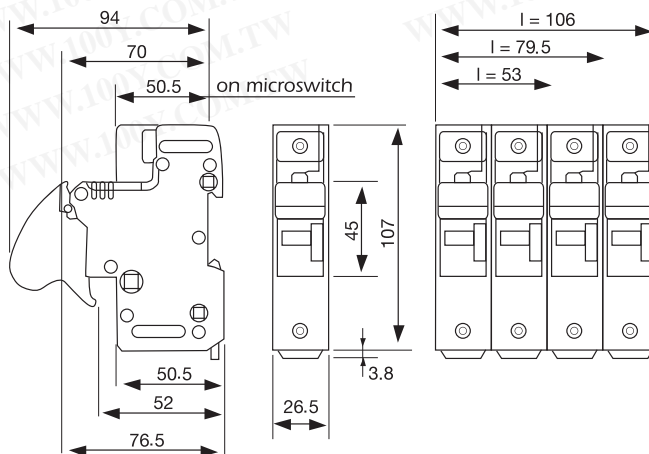
- Direct mounting on symmetrical DIN rail
- Indicator light (120/690V)*
- Wiring cross sections:
 - single-pole: 1 x 16mm²
 - single-pole + neutral: 1 x 10 mm²
- Insulated to IP 20 standard
- Single-pole weight
 - 8x31 ; 63 g
 - 8x31 - Ph + N1M ; 63 g
 - 10x38 ; 63 g
 - 10x38 - Ph + N1M ; 68 g

* With the indicator light a blown fuse can be quickly located if power is still on

Modulostar CMS14



Size	CCD configurations	Cat. number w/o indicator light	Ref. number	Cat. number with indicator light	Ref. number	Pckg
14 x 51	1	CMS141	A331016F	CMS141I	L331049F	6
14 x 51	1+N	CMS141N	T331010C	CMS141NI	M331050C	3
14 x 51	2	CMS142	R331031C	CMS142I	M331004C	3
14 x 51	3	CMS143	J212091B	CMS143I	K331071B	2
14 x 51	3+N	CMS143N	D331042A	CMS143NI	Q331007A	1
14 x 51	4	CMS144	F331021A			1
14 x 51	N	CMS14N	T331056F			6
14 x 51 for fuses with striker	1			CMS141AC	F331044F	6
14 x 51 with microswitches (+ pre-isolation)	1	CMS141M	Z331038F	CMS141MI	S331055F	6
	2 (2 switches)	CMS142M	A331062C	CMS142MI	X331036C	3
	3	CMS143M	F331067B	CMS143MI	P331006B	2
(for fuses with striker)	3 (2 switches)	CMS143M2	H331069B	CMS143M2I	Y331037B	2
	3+N	CMS143NM	E331043A	CMS143NMI	Y331037A	1



Accessories for CMS14



Description	Cat.number	Ref. number	Nb.Modules 17,5 mm	Pckg
Single-pole CMS14 auxiliary microswitch kit	CMS14W1	M218741	1.5	1
3-pole CMS14 auxiliary microswitch kit	CMS14W2	C219261	4.5	1
3-pole CMS14 2 auxiliary microswitch kit	CMS14W3	D219791	4.5	1
Auxiliary microswitch assembly pin (between 2 auxiliary microswitch kits)	CMS1422PTH	J214138		10
Enlargement pin for auxiliary microswitches	CMS14BP	F213629		10
Multi-pole assembly kit	CMS1422PAK	Z218223		10
Indicator light kit	CMS14LIH	A225653		1
Lock	CMS14LOK	M223525		1

Modulostar CMS22



Size	CCD configurations	Cat. number w/o indicator light	Ref. number	Cat. number with indicator light	Ref. number	Pckg
22 x 58	1	CMS221	T331079F	CMS221I	B331086F	6
22 x 58	1+N	CMS221N	H331092C	CMS221NI	S215158C	3
22 x 58	2	CMS222	Q331122C	CMS222I	D331134C	3
22 x 58	3	CMS223	E331135B	CMS223I	D331134B	2
22 x 58	3+N	CMS223N	A331108A	CMS223NI	A218224A	1
22 x 58	4	CMS224	Q331099A			1
22 x 58	N	CMS22N	K331094F			6
22 x 58 for fuses with striker	1			CMS22AC	V331103F	6
22 x 58 with microswitches (+ pre-isolation) (for fuses with striker)	1	CMS221M	D219262F	CMS221MI	N331074F	6
	2 (2 switches)	CMS222M	E219792C	CMS222MI	P331098C	3
	3	CMS223M	Q222470B	CMS223MI	E331112B	2
	3 (2 switches)	CMS223M2	H222992B	CMS223M2I	E331112B	2
	3+N	CMS223NM	P200780A	CMS223NMI	W331104A	1



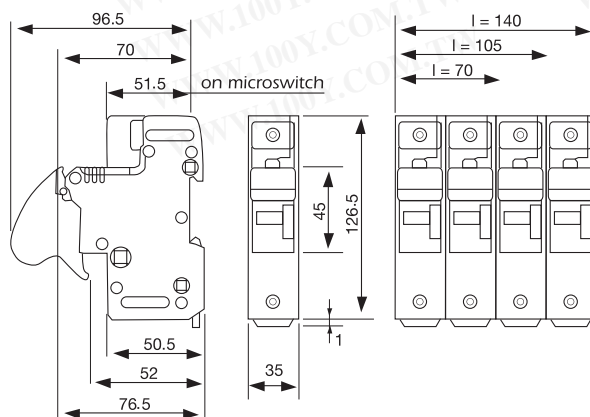
Fuse Holder

Accessories CMS22

Description	Cat.number	Ref. number	Nb.Modules 17,5 mm	Pckg
Single-pole CMS22 auxiliary microswitch kit	CMS22W1	E211581	2	1
3-pole CMS22 auxiliary microswitch kit	CMS22W2	L212093	6	1
3-pole CMS22 2 auxiliary microswitch kit	CMS22W3	B212613	6	1
Auxiliary microswitch assembly pin (between 2 auxiliary microswitch kits)	CMS1422PTH	J214138		10
Enlargement pin for auxiliary microswitches	CMS14BP	F213629		10
Multi-pole assembly kit	CMS1422PAK	Z218223		10
Indicator light kit	CMS14LIH	A225653		1
Lock	CMS14LOK	M223525		1



Drawings for CMS22



Fuse Monitoring for DIN Rail mounting



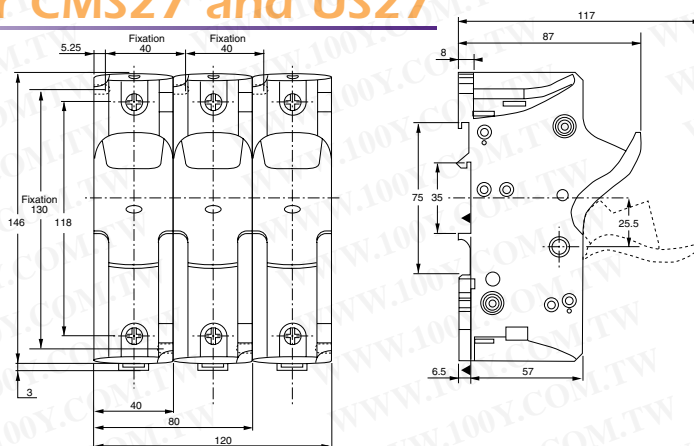
Cat Number	Ref.number	Rated voltage [Vac]	Mounting on	Weight [kg]	Pack [pcs]
FM100/260RD	S236824A	100...260	Rail DIN	0.19	1
FM380/690RD	T236825A	380...690	Rail DIN	0.19	1

Modulostar CMS27



Size	CCD configurations	Cat. number w/o indicator light	Ref.number	Pckg
27 x 60	1	CMS271	R210580C	3
27 x 60	1+N	CMS271N	S210581A	1
27 x 60	N	CMS27N	B210152C	3
27 x 60	2	CMS272	T210582A	1
27 x 60	3	CMS273	V210583A	1

Drawings for CMS27 and US27



For further information on our brand new Modulostar range for ferrule-style fuses, consult our complete technical catalog The Advisor on CD-ROM or on our Web site at

<http://www.ferrazshawmut.com/en/act-e-advisor.php>

under the heading **Gears & Fuse Gears**
 > for IEC general purpose fuses
 > for ferrule-style fuses