

IEC General Purpose Fuses Ferrule Fuses Modulostar® CMS14, CMS22

IEC fuse holders: CMS 14

Fuse holder compliant with IEC 60269-1 & 2, and tested in accordance with IEC 60947-1 & 3 for fuse
disconnecter usage

IEC fuse disconnectors: CMS 14

Fuse disconnectors compliant with IEC 60947-1 & 3 and IEC 60269-1 & 2

Electrical characteristics

Rated insulation voltage U _i AC/DC	Rated impulse withstand voltage U _{imp}	Rated current	Max. power dissipation per fuse	Fuse rating	Maximum current in use for 1, 2, 3 et 3+N poles with FS-fuses. for 4, 5 and 6 poles, multiply by 0.8 for 7, 8, 9 x 0.7 and for ≥ 10 x 0.6						Recommended wire cross-section (mm ²)
					gG	aM	URD - URC	URGA URGB	gRB	gLB	
690 V AC 20 B	8 kV	50 A	5 W	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	2.5
				20	20	20	18	18	18	20	2.5
				25	25	25	20	20	20	25	4
				32	32	32	25	25	25	32	6
				40	40	40	30	30	30	40	6
				50	50	50	35	35	35	45	10
				63			38			10	

* Values shown for 20°C ambient temperature.

Wiring: Rigid wire = 1.5 - 35 mm² (16 - 3 AWG) - Multistrand wire: Maximum 25 mm² (4 AWG)

Tightening torque: 3.5 Nm max / 30 lbs.in

Ferraz Shawmut recommends to use screwdrivers PZ 2 or Flat 5.5 x 1 mm (maximum diameter 6 mm).

CMS 14 fuse holders

for 14x51 fuses without striker



Fuse holders without indicator light				
Nb of Poles	Cat. Num	Ref. Num	Nb of Mod. (17.5 mm)	Pckg box of
N	CMS14N	N222468	1.5	6
1	CMS141	F222990	1.5	6
1 + N	CMS141N	E201323	3	3
2	CMS142	J211056	3	3
3	CMS143	J212091	4.5	2
3 + N	CMS143N	L213128	6	1
4	CMS144	G214136	6	1

Fuse holders with indicator light				
Nb of Poles	Cat. Num	Ref. Num	Nb of Mod. (17.5 mm)	Pckg box of
1	CMS141I	M200778	1.5	6
1 + N	CMS141NI	M201836	3	3
2	CMS142I	C211579	3	3
3	CMS143I	Z212611	4.5	2
3 + N	CMS143NI	D213627	6	1

for 14x51 fuses with striker

Nb of Pole	Standard ready for accessories		Nb of Mod. (17.5 mm)	Pckg box of	Possible Functions
	Ref. Num	Cat. Num			
1	L223524	CMS141AC	1.5	6	Indicator light & blown fuse only

CMS 14 fuse disconnectors

for all types of 14x51 fuses

Nb of Pole	Model without indicator light ready for accessories		Model with indicator light ready for auxiliary microswitch		Model fitted with auxiliary microswitch		Model fitted with auxiliary microswitch & indicator light		Nb of Mod. (17.5 mm)	Pckg box of
	Cat. Num	Ref. Num	Ref. Num	Cat. Num	Cat. Num	Ref. Num	Cat. Num	Ref. Num		
N		N222468							1.5	6
1	CMS141P	P217708			CMS141M	K214645	CMS141MI	N201837	1.5	6
1 + N		P222469							3	3
2*	CMS142P	G222991			CMS142M	R215157	CMS142MI	K211057	3	3
3	CMS143P	N200779		consult us	CMS143M	T215665	CMS143MI	D211580	4.5	2
3*					CMS143M2	Y216681	CMS143M2I	K212092	4.5	2
3 + N	CMS143NP	F201324			CMS143NM	L217199	CMS143NMI	A212612	6	1
4									6	1

* Two auxiliary microswitches (see instructions for mounting) – The auxiliary microswitch function requires use of fuses with strikers.

Accessories

Description	Cat. Num	References	Nb of Mod. (17.5 mm)	Pckg
Auxiliary microswitch kit 1 pole CMS 14	CMS14W1	M218741	1.5	1
Auxiliary microswitch kit 3 poles CMS 14	CMS14W2	C219261	4.5	1
2 auxiliary microswitch kit 3 poles CMS 14	CMS14W3	D219791	4.5	1
Auxiliary microswitch assembly pin (between 2 kits)	CMS1422PTH	J214138		10*
Enlargement pin for auxiliary microswitch	CMS1422BP	F213629		10*
Multi-pole assembly kit	CMS1422PAK	Z218223		10*
Indicator light kit	CMS1422LHI	A225653		1
Lock	LOCK	M223525		1

* 10 per bag

Auxiliary micro-switch kit M218741



Enlargement pin for auxiliary microswitch - F213629



Auxiliary microswitch assembly pin J214138

Gears & Fuse Gears



IEC General Purpose Fuses

Ferrule Fuses

Modulostar® CMS14, CMS22

IEC fuse holders: CMS 22 - Fuse holder compliant with IEC 60269-1 & 2, and tested in accordance with IEC 60947-1 & 3 for fuse disconnecter usage

IEC fuse disconnectors: CMS 22 - Fuse disconnectors compliant with IEC 60947-1 & 3 and IEC 60269-1 & 2

Electrical characteristics

Rated insulation voltage Ui AC/DC	Rated impulse withstand voltage Uimp	Rated current	Max. power dissipation per fuse	Fuse rating	Maximum current in use for 1, 2, 3 et 3+N poles with FS-fuses. for 4, 5 and 6 poles, multiply by 0.8 for 7, 8, 9 x 0.7 and for ≥ 10 x 0.6						Recommended wire cross-section (mm²)
					gG	aM	URD - URC	URGA URGB	gRB	gLB	
690 V AC 20 B	8 kV	125 A	9.5 W	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	2.5
				20	20	20	20	20	20	20	4
				25	25	25	25	25	25	25	6
				32	32	32	29	29	29	32	10
				40	40	40	35	35	35	40	10
				50	50	50	40	40	40	50	16
				63	63	63	52	50	50	63	25
				80	80	80	63	60	65	75	35
				100	100	100	76	65	76	85	35
			125	110	125	85		125			

* Values shown for 20°C ambient temperature.

Wiring: Rigid wire = 1.5 - 50 mm² (16 - 1 AWG) - Multistrand wire: Maximum 35 mm² (3 AWG). Tightening torque: max. 4.5 Nm - 45 lbs.in
Ferraz Shawmut recommends to use screwdrivers PZ 2 or Flat 6.5 x 1.2 mm (maximum diameter 7 mm).

CMS 22 fuse holders

for 22x58 fuses without striker

Fuse holders without indicator light				
Nb of Poles	Cat.Num	Ref.Num	Nb of Mod. (17.5 mm)	Pckg box of
N	CMS22N	M213129	1.5	6
1	CMS221	E213628	1.5	6
1 + N	CMS221N	L214646	3	3
2	CMS222	V215666	3	3
3	CMS223	Z216682	4.5	2
3 + N	CMS223N	Q217709	6	1
4	CMS224	N218742	6	1

Fuse holders with indicator light				
Nb of Poles	Cat.Num	Ref.Num	Nb of Mod. (17.5 mm)	Pckg box of
1	CMS221I	H214137	1.5	6
1 + N	CMS221NI	S215158	3	3
2	CMS222I	Z216176	3	3
3	CMS223I	M217200	4.5	2
3 + N	CMS223NI	A218224	6	1



G201325

for 22x58 fuses with striker

Nb of Pole	Standard ready for accessories Cat.Num	Ref.Num	Nb of Mod. (17.5 mm)	Pckg box of	Possible Functions
1	CMS22AC	P201838	1.5	6	Indicator light & blown fuse only

CMS 22 fuse disconnectors

for all types of 22x58 fuses

Nb of Pole	Model without indicator light ready for accessories		Model with indicator light ready for auxiliary microswitch		Model fitted with auxiliary microswitch		Model fitted with auxiliary microswitch & indicator light		Nb of Mod. (17.5 mm)	Pckg box of
	Cat.Num	Ref.Num	Cat.Num	Ref.Num	Cat.Num	Ref.Num	Cat.Num	Ref.Num		
N	CMS22N	M213129							1.5	6
1	CMS221P	G201325			CMS221M	D219262	CMS221MI	A216683	1.5	6
1 + N	CMS221NP	M214647							3	3
2	CMS222P	T215159			CMS222M	E219792	CMS222MI	N217201	3	3
3	CMS223P	W215667		consult us	CMS223M	Q222470	CMS223MI	R217710	4.5	2
3*		W215667			CMS223M2	H222992	CMS223M2I	B218225	6	2
3 + N	CMS223NP	A216177			CMS223NM	P200780	CMS223NMI	P218743	6	1



D219262

* Two auxiliary microswitches (see instructions for mounting) – The auxiliary microswitch function requires use of fuses with strikers.

Accessories

Description	Cat.Num	References	Nb of Mod. (17.5 mm)	Pckg
Auxiliary microswitch kit 1 pole CMS 22	CMS22W1	E211581	1.5	1
Auxiliary microswitch kit 3 poles CMS 22	CMS22W2	L212093	4.5	1
2 auxiliary microswitch kit 3 poles CMS 22	CMS22W3	B212613	4.5	1
Auxiliary microswitch assembly pin (between 2 kits)	CMS1422PTH	J214138		10*
Enlargement pin for auxiliary microswitch	CMS1422BP	F213629		10*
Multi-pole assembly kit	CMS1422PAK	Z218223		10*
Indicator light kit	CMS1422LHI	A225653		1
Lock	LOCK	M223525		1



E211581



Enlargement pin for auxiliary microswitch - F213629



Auxiliary microswitch assembly pin - J214138

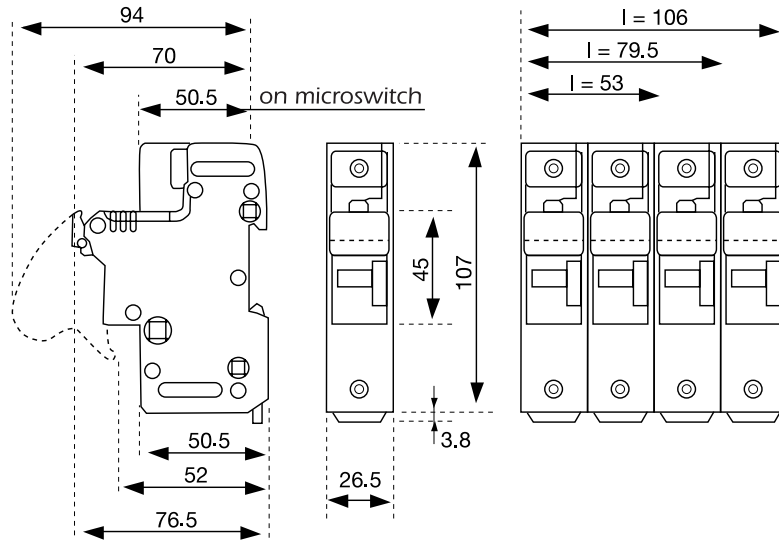


Gears & Fuse Gears

IEC General Purpose Fuses Ferrule Fuses Modulostar® CMS14, CMS22

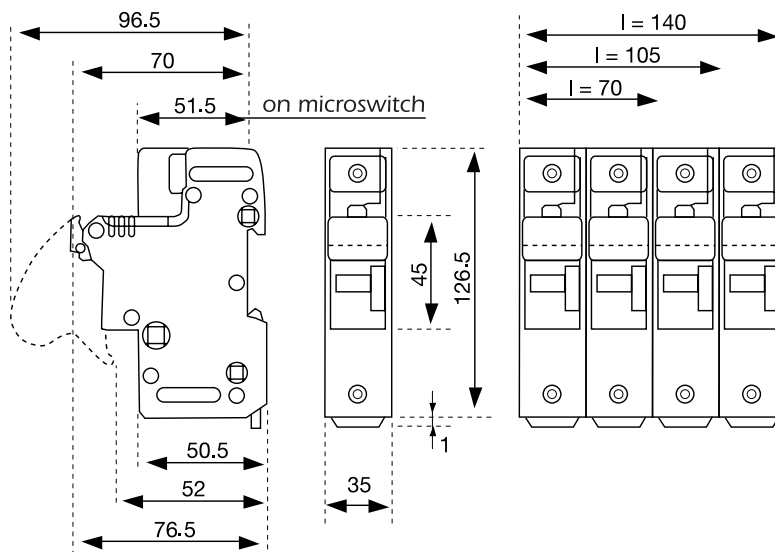
Mecanics for CMS 14 & 22

Dimensions of CMS 14 and US 14 products



Width depending on nb. of 17.5 mm modules	Nb poles	1	2	3	4	5	6
	Nb of modules	1.5	3	4.5	6	7.5	9
	mm	26.5	53	79.5	106	132.5	159

Dimensions of CMS 22 and US 22 products



Width depending on nb. of 17.5 mm modules	Nb poles	1	2	3	4	5	6
	Nb of modules	2	4	6	8	10	12
	mm	35	70	105	140	175	210

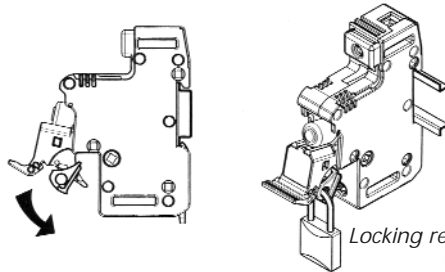
Gears & Fuse Gears



IEC General Purpose Fuses Ferrule Fuses Modulostar® CMS14, CMS22

Mechanics for CMS 14 & 22

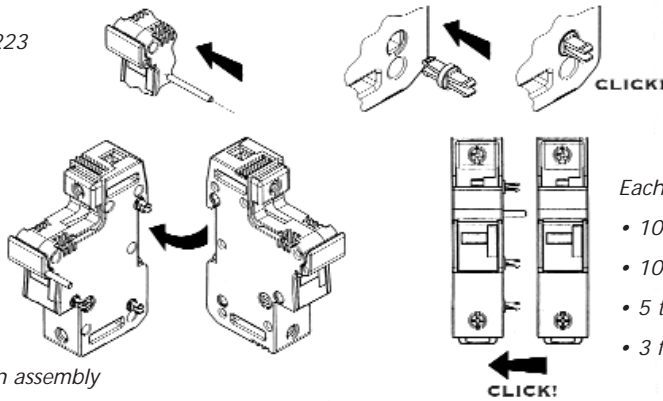
Locking system



Locking reference: M223525

Multipole assembly

Assembly kit
CMS14 & CMS 22: Z218223



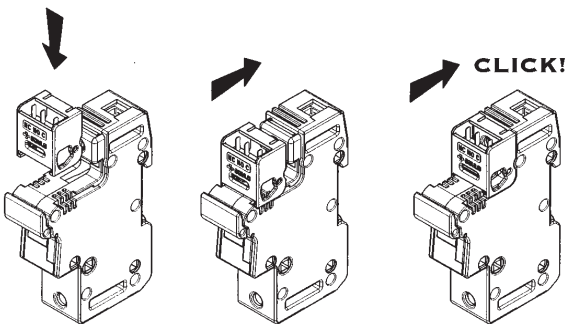
Assembly kit
US 14: X227927
US 22: F227958

Each bag of kits is sufficient for:

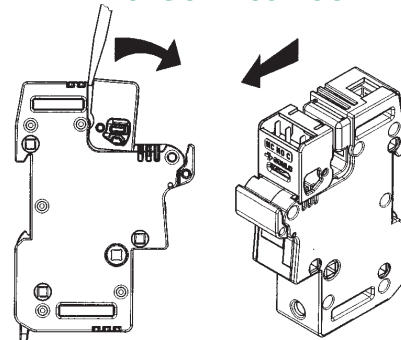
- 10 multipole assemblies
- 10 two-pole assemblies
- 5 three-pole assemblies
- 3 four-pole assemblies

NB: 6 poles maximum in an assembly

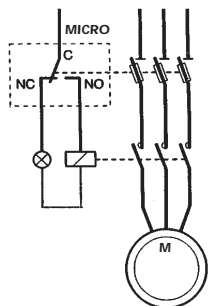
Mounting auxiliary microswitches



Dismounting auxiliary microswitches



Auxiliary microswitch functions



- Fuse melting:** A fuse holder containing a fuse with a striker sends out a signal when the fuse element melts
- Pre-isolation:** When the fuse holder opens
- Presence:** Sends a signal when the holder is closed with no fuse in it

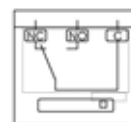
Characteristics of the auxiliary microswitch

Min. voltage and current for operation 10VAC-DC - 100mA

Rated current and breaking capacity (1) at 250V	6A	AC 12
	3A	AC 13
Rated current and breaking capacity (1) at 2 and 24 V	0,3A	AC 14
	0,1A	DC 12/13/14
	0,6A	

Rated current and breaking capacity (1) at 2 and 24 V	6A	DC 12/DC13
	5A	AC 13
	2A	AC 14/DC 13
	0,6A	DC 14

(1) as per standard IEC 947-5



With the fuse in the handle closed state.



No fuse
Fuse blown
Handle open



Gears & Fuse Gears

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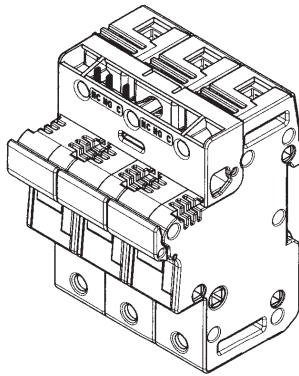
Mechanics for CMS 14 & 22

Microswitch options

Auxiliary microswitches can only be mounted on previously prepared fuse disconnectors. Use of the auxiliary microswitch for fuse melting requires the use of fuses with strikers.

1 auxiliary microswitch

CMS 14 (C219261) - US14 (Z227929)
CMS 22 (L212093) - US 22 (H227960)

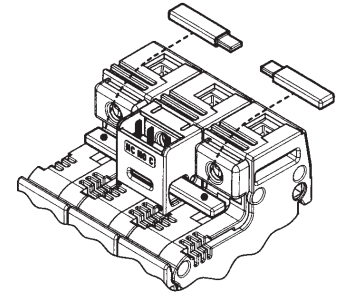


or

1 auxiliary microswitch

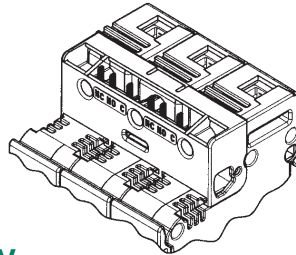
CMS 14 (M218741+F213629)
CMS 22 (E211581+F213629)

US 14 (Y227928+F213629)
US 22 (G229759+F213629)



2 auxiliary microswitches

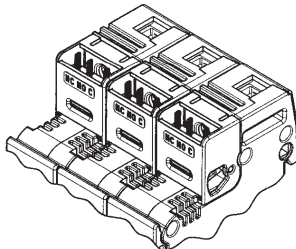
CMS 14 (D219791) - US14 (A227930)
CMS 22 (B212613) - US 22 (J227961)



3 independent auxiliary microswitches

CMS 14 (3 x M218741)
CMS 22 (3 x E211581)

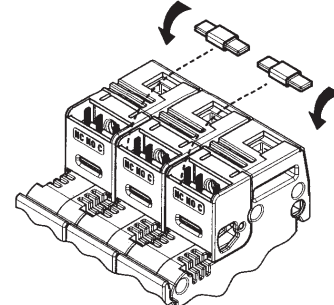
US 14 (3 x Y227928)
US 22 (3 x G227959)



3 mechanically interconnected auxiliary microswitches

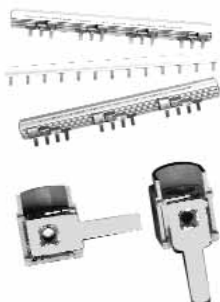
CMS 14 (3 x M218741+2 x J214138)
CMS 22 (3 x E211581+2 x J214138)

US 14 (3 x Y227928) + (2 x J214138)
US 22 (3 x G227959) + (2 x J214138)



NOTE: Do not fit with more than 3 microswitches

Supply wiring bars and terminals



Description	Cat. Number	Ref. Number	Maximum acceptable RMS current (A)	Pckg
jumping bar for 4 (CMS 14/US 14) 3 poles	CMS14BB3F4	A210312	100	5
jumping bar for 6 (CMS 14/US 14) 2 poles	CMS14BB2F6	Z210311	63	5
jumping bar for 12 (CMS 14/US 14) 1 pole	CMS14BB1F12	Y210310	63	5
jumping bar for 6 (CMS 22/US 22) 2 poles	CMS22BB2F6	C210314	150	5
jumping bar for 12 (CMS 22/US 22) 1 pole	CMS22BB1F12	B210313	90	5
Single-pole terminal, side	TBB1C	E210316	90	50
2/3-pole terminal, side	TBB23C	G210318	90	50
Single-pole terminal, axial	TBB1A	D210315	90	50
2/3-pole terminal, axial	TBB23A	F210317	90	50



IEC General Purpose Fuses Ferrule Fuses Modulostar® CMS14, CMS22

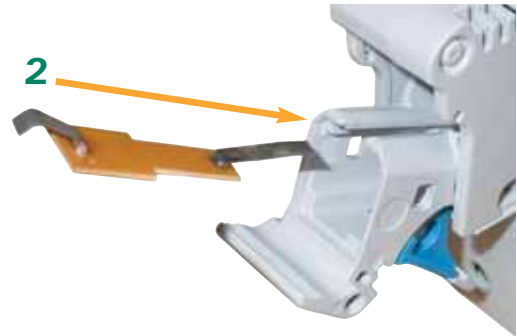
Indicator light kit

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

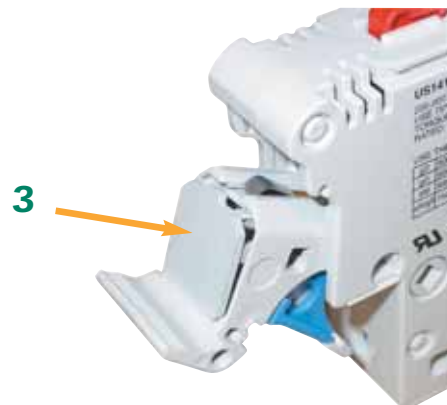
1 Carefully remove the cover with 2 screw drivers.



2 Slip the indicator lights top insert into the rails, being careful not to twist the contact tabs.



3 Put the cover back on



Assembly precautions in multipole assemblies

When fuse holders are side by side or very near each other (less than one module apart), they must be derated again, in addition to derating for temperature

Number of 17.5 mm modules	Derating factor
1-2-3	None = 1
4-5-6	0.8
7-8-9	0.7
> 10	0.6