



# Gears & Fuse Gears

## Semiconductor Fuses AC+DC Ferrule Fuse Holders MODULOSTAR® US14, US22



C227932

UL fuse holders: US 22

### Electrical characteristics

Rated insulation voltage U <sub>i</sub> AC/DC	Rated impulse withstand voltage U <sub>imp</sub>	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 <sup>2</sup> )
					gG	60gD	aM	URD - URC	URGA URGB	gRB	gLB	
750 V	8 kV	125 A	9.5 W	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	≤ 16	2.5/12
				20	20	20	20	20	20	20	4/10	
				25	25	25	25	25	25	25	6/10	
				32-35	32	35	32	29	29	32	10/8	
				40	40	40	40	35	35	40	10/8	
				50	50	50	50	40	40	50	10/8	
				60/63	60	60	63	52	51	52	63	16/6
				80		80	65	64	75	75	25/4	
				100		100	76	74	76	85	35/2	
				125		100	85				35/2	

\* Values shown for 20°C ambient temperature.

Wiring: Rigid wire = 1.5 - 50 mm<sup>2</sup> (16 - 1 AWG) - Multistrand wire: Maximum 35 mm<sup>2</sup> (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).

### ULTRASAFE™ US 22 fuse disconnectors

for 22x58 fuses with no striker, or with indicator light or with striker



F227935

Nb of Pole	Model without indicator light ready for accessories		Model with indicator light ready for auxiliary contact		Model fitted with auxiliary contact		Model fitted with auxiliary contact & 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	US22N	B227931							1.5	6
1	US221	C227932	US221I	D227933	US221M	E227934	US221MI	F227935	1.5	6
1 + N	US221N	G227936	US221NI	H227937	US221NM	J227938	US221NMI	K227939	3	3
2	US222	L227940	US222I	M227941	US222M	N227942	US222MI	P227943	3	3
2*					US222M2	Q227944	US222M2I	R227945	3	3
3	US223	S227946	US223I	T227947	US223M	V227948	US223MI	W227949	4.5	2
3*					US223M2	X227950	US223M2I	Y227951	4.5	2
3 + N	US223N	Z227952	US223NI	A227953	US223NM	B227954	US223NMI	C227955	6	1
3 + N*					US223NM2	D227956	US223NM2I	E227957	6	1
4	US224		US224I		US224M		US224MI		6	1
4*					US224M2		US224M2I		6	1

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

### Accessories



Auxiliary contact kit Y227928



Enlargement pin for auxiliary contact - F213629



Auxiliary contact assembly pin J214138

Description	Cat.Num	References	Nb of Mod. (17.5 mm)	Pckg
Auxiliary contact kit 1 pole US 22	USMSW4	G227959	1.5	1
Auxiliary contact kit 3 poles US 22	USMSW5	H227960	4.5	1
2 auxiliary contact kit 3 poles US 22	USMSW6	J227961	4.5	1
Auxiliary contact assembly pin (between 2 kits)	US1422PTH	J214138		10*
Enlargement pin for auxiliary contact	US1422BP	F213629		10*
Multi-pole assembly kit	US22PAK	F227958		10*
Indicator light kit	CMS1422LHI	A225653		1
Lock	LOCK	M223525		1

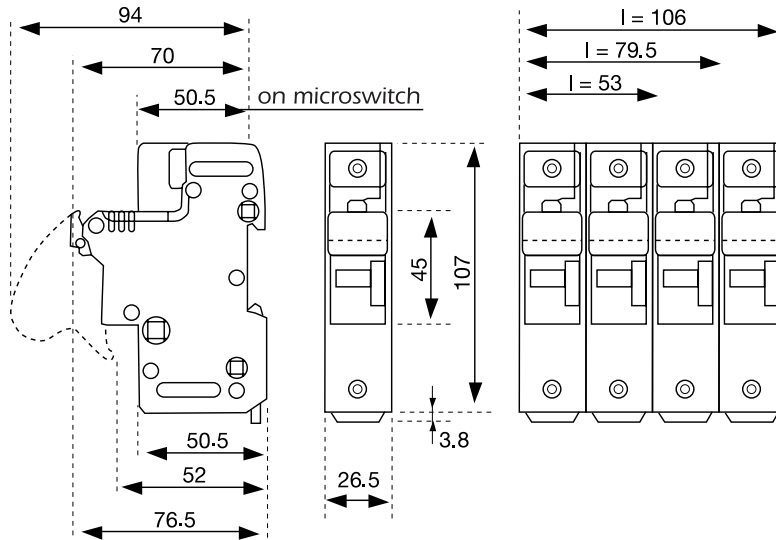
\* 10 per bag



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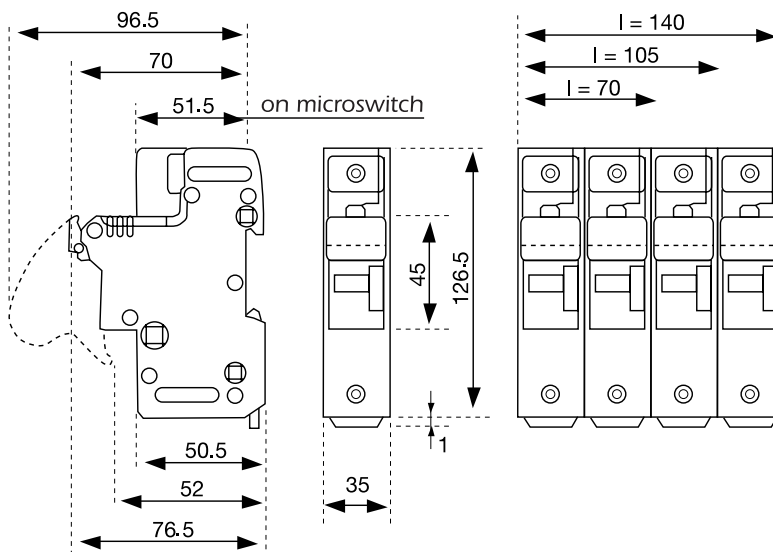
### Mechanics for CMS/US 14 & 22

#### 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	

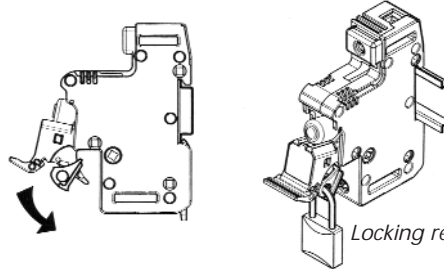


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### Mechanics for CMS/US 14 & 22

#### Locking system



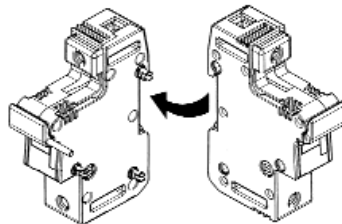
Locking reference: M223525

#### Multipole assembly

Assembly kit  
CMS14 & CMS 22: Z218223



Assembly kit  
US 14: X227927  
US 22: F227958



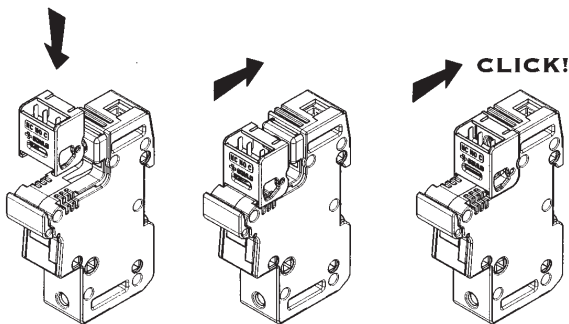
Each bag of kits is sufficient for:

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

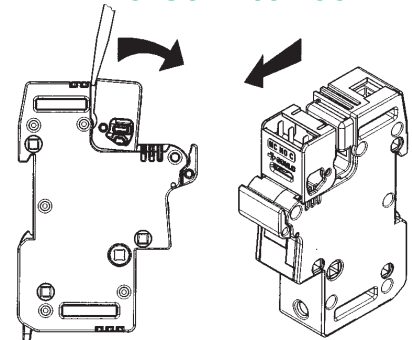
NB: 6 poles maximum in an assembly

CLICK!

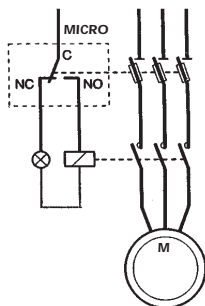
#### Mounting auxiliary microswitches



#### 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

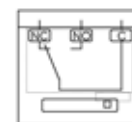
#### Characteristics of the auxiliary microswitch

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

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

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



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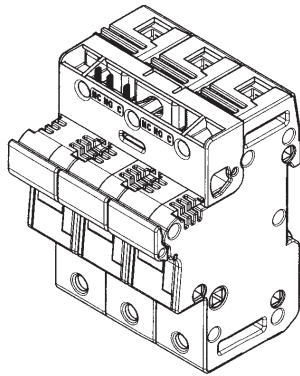
### Mechanics for CMS/US 14 & 22

#### 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

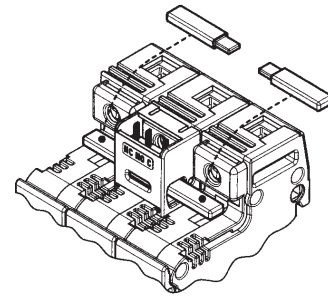
CMS 14 (C219261) - US14 (Z227929)  
CMS 22 (L212093) - US 22 (H227960)



or

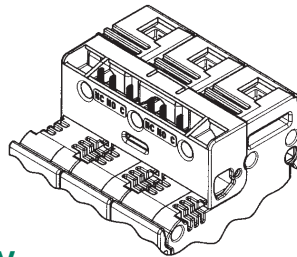
#### 1 auxiliary microswitch

CMS 14 (M218741+F213629)  
CMS 22 (E211581+F213629)  
US 14 (Y227928+F213629)  
US 22 (G229759+F213629)



#### 2 auxiliary microswitches

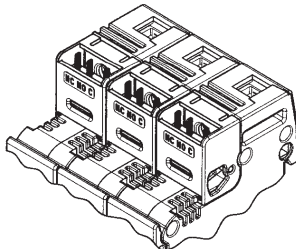
CMS 14 (D219791) - US14 (A227930)  
CMS 22 (B212613) - US 22 (J227961)



#### 3 independent auxiliary microswitches

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

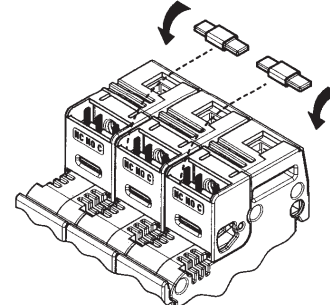
US 14 (3 x Y227928)  
US 22 (3 x G227959)



#### 3 mechanically interconnected auxiliary microswitches

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

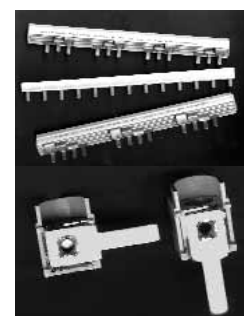
US 14 (3 x Y227928) + (2 x J214138)  
US 22 (3 x G227959) + (2 x J214138)



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





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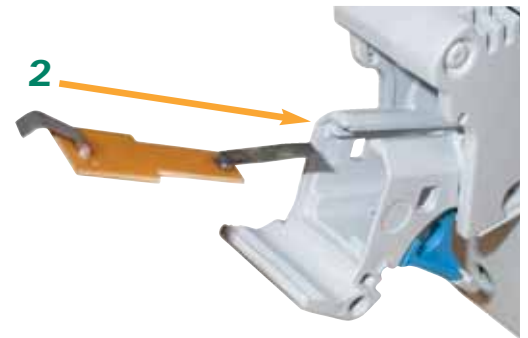
### Indicator light kit

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 light's 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