

# UL Low Voltage General Purpose Protection

## Modular fuse-holders

### UltraSafe™ US22

Data Sheet

The Innovative and comprehensive UltraSafe™ range of Mersen fuse-holders. Modular fuse-holders are finger-safe under IEC standards to an IP20 grade of protection, including fuse changing (with the flick of a finger). Modular fuse-holders are available in 1, 2, 3 or 4 poles, with or without visual blown fuse indicators, in UL + IEC version. Multi-pole units can also be field assembled by ordering pin-ties assembly kit. In size 14 or 22, the range also offers the possibility to use microswitches (supplied with the holders or ordered separately) to allow remote indication. UltraSafe™ range is made of tough and durable thermoplastic or thermoset material.



#### Benefits

- Finger safe
- Optional visual blown fuse indicator & microswitch
- Din rail mounting
- Modular design
- Lockable
- Multi-pole assembly kit available
- Sealable in closed and open position

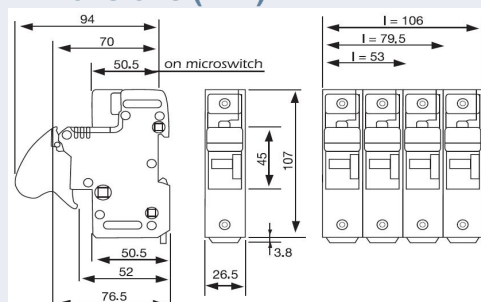
#### Applications

- All circuits up to 750V for protection of motors, transformers, low voltage distribution, control circuits
- Non-load operation.

#### UltraSafe™ fuse-holders for 22x58 fuse-links without striker

No of Poles	Catalog Number w/o indicator light	Reference Number w/o indicator light	Catalog Number with indicator light	Reference Number with indicator light	No of Mod. (17.5mm)	Pack.
1	US221	E331158	US221I	F331159	2	6
1 + N	US221N	H331161	-	-	4	3
2	US222	K331163	US222I	L331164	4	3
3	US223	R331169	US223I	S331170	6	2
3 + N	US223N	X331174	-	-	8	1

#### Dimensions (mm)



#### Recommended fuse usage

- 22x58 aM, gG fuse-links with and w/o striker
- 22x58 gR fuse-links with and w/o striker
- 22x58 A70QS, URD fuse-links

#### Ratings

- $U_i = 750V$  AC/DC
- $I_{th} = 125A$ ,  $I_e < / = 125A$
- Max. fuse power loss = 9.5W
- Utilization category: AC20B/DC20B
- $I_{sc} = 200kA$
- $U_{imp} = 8kV$
- Protection: IP20
- Voltage limit for blown fuse indicator: 230 to 690V AC/DC

#### Approvals

- UL Recognized Component, UL4248, guide IZLT2, file E52283
- CSA Certified C22.2, class 6225, file 32169
- IEC 60269-2 and IEC 60947-3 Compliance
- RoHS Compliant
- Plastic material: NF 16101 & 16102 Requirement 2 Compliant
- Shock and vibration tested for marine and railway applications



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#### UltraSafe™ fuse-holders for all types of 22x58 fuse-links

No of Poles	Catalog Number with auxiliary microswitch	Reference Number with auxiliary microswitch	Catalog Number with auxiliary microswitch & indicator light	Reference Number with auxiliary microswitch & indicator light	No of Mod. (17.5mm)	Pack.
1	US221M	G331160	US221MI	Z1006203	1.5	6
1 + N	US221NM	J331162	-	-	3	3
2	US222M	M331165	US222MI	N331166	3	3
2*	US222M2	P331167	US222M2I	Q331168	3	3
3	US223M	T331171	US223MI	V331172	4.5	2
3*	US223M2	W331173	US223M2I	X1011974	4.5	2

\*Two auxiliary microswitches (see instructions for mounting) - The auxiliary microswitch function requires use of fuses with strikers. Models without indicator light and with auxiliary microswitch can be equipped with indicator kind and auxiliary microswitch kit.

#### Technical characteristics

##### Shock and vibration

Vibration withstand on the 3 main axis\*:

- Sinusoidal vibration testing according to IEC 60068-2-6  
13 to 100Hz y= 0.7g peak according to french marine application  
2 to 13Hz x= 1 mm peak
- Random vibration testing according to IEC 61373  
Category 1 Class B

Shock withstand on the 3 main axis\*:

- Shock testing according to IEC 60068-2-27 15g/11ms/18 shocks
- Shock testing according to IEC 61373 Category 1 Class B

\*For specific usage please contact us

##### Connection

Max. tightening torque: 4Nm (35lbs.-in.)

Wire range

- Rigid wire = 1.5-50mm<sup>2</sup> (16-1AWG)
- Multistrand wire = 35mm<sup>2</sup> (3AWG)

PZ2 or flat 6.5x1.2mm screw drivers recommended  
(max. diameter 7mm)

##### Plastic material

Plastic material UL94V2 mini

Flame retardant materials with glow wire flammability index to 960°C

Operating temperature: -25°C +60°C (1)

Storage temperature: -25°C +80°C

(1) See derating table

##### Specific usage conditions

Ambient temperature	>20°C	30°C	40°C	50°C	60°C
Derating factor (Ie)	1	0.95	0.9	0.8	0.7

No of poles	1 to 3	4 to 6	>= 7
Derating factor of current (Ith)	1	0.95	0.9

Nominal Current (A) of fuse-link gR	Max. operational current in fuse-holder (A)	Cable wire section (mm <sup>2</sup> )
50	47	10
63	54	16
80	70	25
100	83	35
125	91	50
135	96	50

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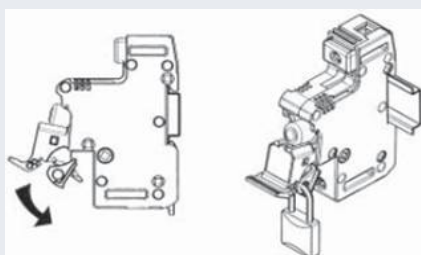
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#### Accessories

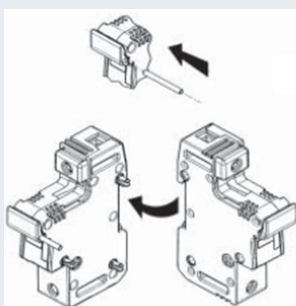
Description	Catalog Number	Reference Number	Max. rms current (A)	No of Mod. (17.5mm)	No of Poles	Pack.
Auxiliary contact kit 1 pole US22	USMSW4	G227959	-	1.5	-	1
Auxiliary contact kit 3 poles US22	USMSW5	H227960	-	4.5	-	1
2 auxiliary contact kit 3 poles US22	USMSW6	J227961	-	4.5	-	1
Auxiliary microswitch assembly pin (between 2 kits)	US1422PTH	J214138	-	-	-	10
Enlargement pin for auxiliary microswitch	US1422BP	F213629	-	-	-	10
Multi-pole assembly kit	US22PAK	F227958	-	-	-	10
Indicator light kit	CMS1422LHI	A225653	-	-	-	1
Lock	LOCK	M223525	-	-	-	1
Wiring bar for 6 US22 2 poles	CMS22BB2F6	C210314	150	-	-	5
Wiring bar for 12 US22 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

#### Locking system



Locking Reference Number: M223525

#### Multi-pole assembly



Assembly kit: F227958  
NB: 6 poles maximum



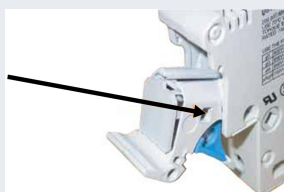
Each bag of kits is sufficient for:

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

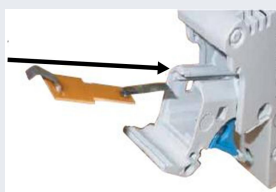
#### Indicator light kit for US22

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

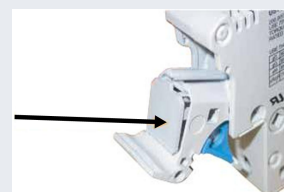
1. Carefully remove the cover with 2 screw drivers



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



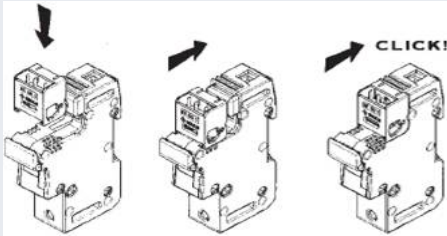
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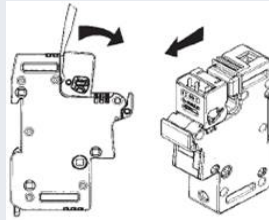
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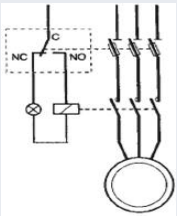
#### Mounting auxiliary microswitches



#### Dismounting auxiliary microswitches



#### Auxiliary microswitch functions

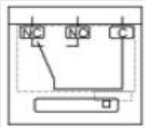


Fuse melting: A fuse-holder containing a fuse with a striker sends out a signal when the fuse element melts.

Pre-isolation: When opening the fuse-holder, the microswitch sends a signal before the opening of the main contacts.

Presence: Sends a signal when the holder is closed with no fuse in it.

#### Characteristics of the auxiliary microswitch



With the fuse in the handle closed state

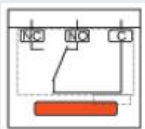
Rated insulation voltage: 250VAC

Rated operational current following IEC 60947-5 & -1

Utilization category AC15: 4A/24V, 4A/48V, 3A/127V, 2.5A/240V

Utilization category DC13: 3A/24V, 1A/48V, 0.2A/127V, 0.1A/240V

Minimum operational current and voltage: 1mA/4V AC or DC



No fuse - Fuse blown handle open

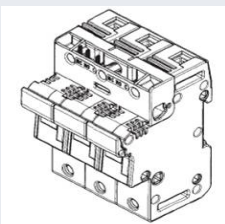
Auxiliary microswitch is designed to operate equally well on dual-current (1mA 4V minimum) or medium-current (5A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

Connection: Faston lugs

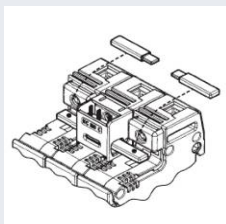
#### Microswitch options

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

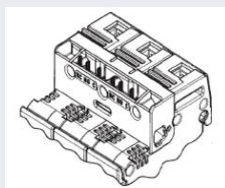


H227960



G227959 + F213629

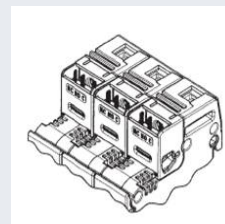
#### 2 auxiliary microswitches



J227961

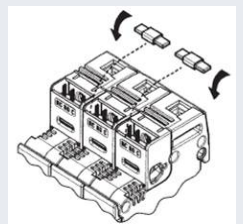
#### 3 auxiliary microswitches

##### Independent



3 x G227959

##### Mechanically interconnected



3 x G227959 + 2 x J214138