

# UltraSafe™ US22

Modular fuse-holders

## FUSE HOLDERS, FUSE BASES AND SUPPORTS

### UL/CSA FUSE HOLDERS



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 indicator, in UL + IEC version.

Multi-pole units can also be field assembled by ordering pin-ties assembly kit. In this size, 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.

### TECHNICAL DATA OVERVIEW

UL ratings AC	800 VAC, 125 A, 50 kA
UL ratings DC	1000 VDC, 125 A, 100 kA
Voltage AC	690 VAC
Voltage DC	690 VDC
Amper (A)	125 A
SCCR	100 kA
Mounting	Installation on to DIN rails to EN 60717
Product Size	for cylindrical fuse links 22x58
Number of Poles	1-pole, 2-pole, 3-pole, 1+N, 3+N

### FEATURES & BENEFITS

- Finger safe
- Degree of protection: IP20
- Optional visual blown fuse indicator & microswitch
- DIN rail mounting
- Modular design
- Lockable
- Multi-pole assembly kit available
- Sealable in closed and open position
- Plastic material UL94V2 mini
- Flame retardant materials with glow wire flammability index to 960°C

### APPLICATIONS

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

### STANDARDS

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



## PRODUCT RANGE



US221

### UltraSafe™ fuse holders for 22x58 fuse links, without indicator

Catalog number	Reference number	Number of poles/phases	Design	Weight	Package
US221	E331158	1	single pole	0.214 kg	6
US221N	H331161	1 + N	single pole + neutral conductor	0.45 kg	3
US222	K331163	2	double pole	0.44 kg	3
US223	R331169	3	triple pole	0.6425 kg	2
US223N	X331174	3 + N	triple pole + neutral conductor	0.91 kg	1



US223I

### UltraSafe™ fuse holders for 22x58 fuse links, with indicator

Catalog number	Reference number	Number of poles/phases	Design	Weight	Package
US221I	F331159	1	single pole	0.2166 kg	6
US222I	L331164	2	double pole	0.435 kg	3
US223I	S331170	3	triple pole	0.325 kg	2



US222M

### UltraSafe™ fuse holders for 22x58 fuse links, with auxiliary microswitch

Catalog number	Reference number	Number of poles/phases	Design	Weight	Package
US221M	G331160	1	single pole	0.1533 kg	6
US221NM	J331162	1 + N	single pole + neutral conductor	0.4666 kg	3
US222M	M331165	2	double pole	0.455 kg	3
US222M2	P331167	2	double pole	0.4633 kg	3
US223M	T331171	3	triple pole	0.665 kg	2
US223M2	W331173	3	triple pole	0.67 kg	2

### UltraSafe™ fuse holders for 22x58 fuse links, with indicator and auxiliary microswitch

Catalog number	Reference number	Number of poles/phases	Design	Weight	Package
US221MI	Z1006203	1	single pole	0.2166 kg	6
US222MI	N331166	2	double pole	0.455 kg	3
US222M2I	Q331168	2	double pole	0.4666 kg	3
US223MI	V331172	3	triple pole	0.675 kg	2
US223M2I	X1011974	3	triple pole	0.645 kg	2

## TECHNICAL DATA

	US22	US22I	US22M	US22MI
Size	22x58	22x58	22x58	22x58
Number of poles/phases	1, 1+N, 2, 3, 3+N	1, 2, 3	1, 1+N, 2, 3	1, 2, 3
UL ratings AC	800 VAC, 125 A, 50 kA	800 VAC, 125 A, 50 kA	800 VAC, 125 A, 50 kA	800 VAC, 125 A, 50 kA
UL ratings DC	1000 VDC, 125 A, 100 kA	1000 VDC, 125 A, 100 kA	1000 VDC, 125 A, 100 kA	1000 VDC, 125 A, 100 kA
Conventional free air thermal current with fuse links $I_{th}$	125 A	125 A	125 A	125 A
Power dissipation at $I_{th}$	9.5 W	9.5 W	9.5 W	9.5 W
Utilisation category	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B
Rated insulation voltage $U_i$	750 V	750 V	750 V	750 V
SCCR	100 kA	100 kA	100 kA	100 kA
Rated impulse withstand voltage $U_{<sub>imp</sub>}$	8 kV	8 kV	8 kV	8 kV
Degree of protection	IP 20	IP 20	IP 20	IP 20
Voltage limit for blown fuse indicator	-	230 to 690V AC/DC	-	230 to 690V AC/DC
Indication System	-	with indicator	with auxiliary microswitch	with indicator and auxiliary microswitch
Connection	Max. tightening torque: 4Nm (35lbs-in) 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)	Max. tightening torque: 4Nm (35lbs-in) 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)	Max. tightening torque: 4Nm (35lbs-in) 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)	Max. tightening torque: 4Nm (35lbs-in) 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)
Operating temperature	-25°C to +60°C	-25°C to 60°C	-25°C to 60°C	-25°C to 60°C
Storage temperature	-25°C to +80°C	-25°C à 80°C	-25°C to 80°C	-25°C to 80°C

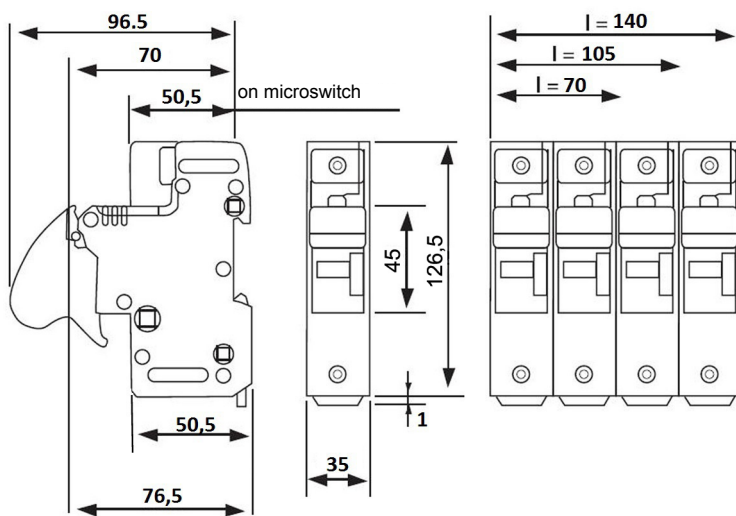
## SPECIFIC USAGE CONDITIONS

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

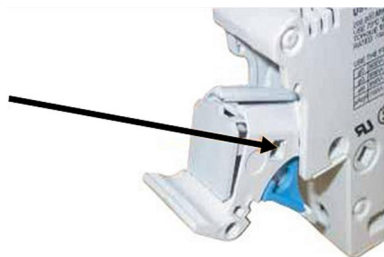
No of poles (side by side)	1 to 3	4 to 6	>= 7
Derating factor of current ( $I_{th}$ )	1	0.95	0.9

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

## DIMENSIONS



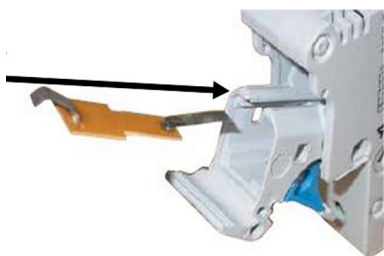
## FUNCTIONS



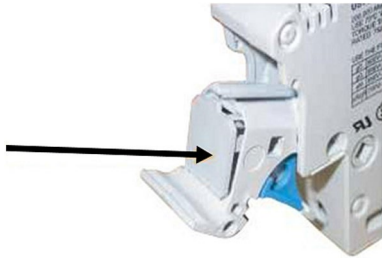
### Indicator light kit for US22

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

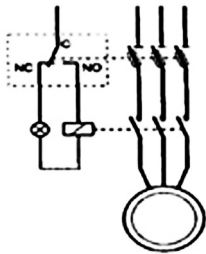
1. Carefully remove the cover with 2 screw drivers.



2. Slip the indicator light's to insert into the rails, being careful not to twist the contact tabs.



3. Put the cover back on.

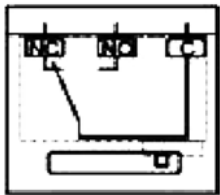


### Auxiliary microswitch functions

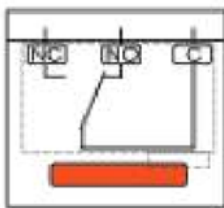
Fuse melting: a fuse-holder containing a fuse with a striker sends out a signal when the fuse element melts.

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.



With the fuse in the handle closed state



No fuse - Fuse blown in handle open

### Characteristics

Rated insulation voltage: 250VAC

Rated operational current following IEC 60947-5 & -1

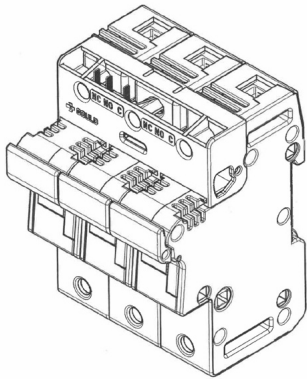
Utilization category AC15: 4A/24V, 4A/48V, 3A/127V, 2.5A/240V

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

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

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

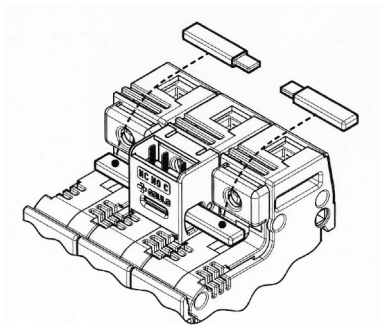


**Auxiliary microswitch can only be mounted on previously prepared fuse disconnectors. Use of the auxiliary microswitch for fuse melting requires the use of fuses with strikers.**

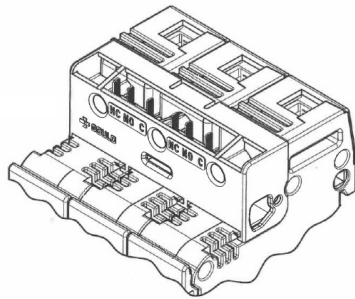
### 1 auxiliary microswitch

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

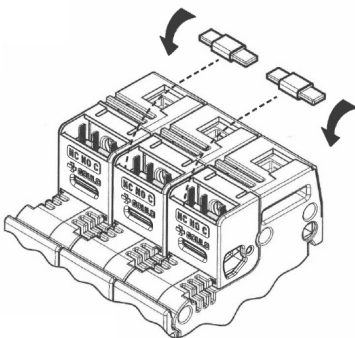


USMSW4



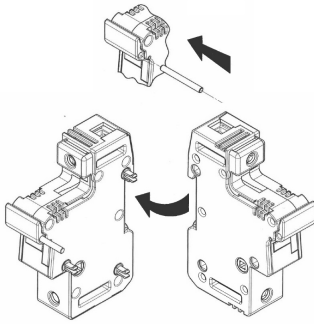
### 2 auxiliary microswitches

USMSW4 + US1422BP



3 x USMSW4

## ACCESSORIES



multi-phase connection kit

### Kit for multi phase connection

Catalog number	Reference number	Design	Package
US22PAK	F227958	links for connection of multipole units	10

### Auxiliary Switches

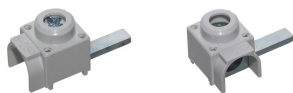
Catalog number	Reference number	Design	Weight	Package
USMSW4	G227959	Auxiliary contact kit 1 pole US22	20 g	1
CMS22W2	B331201	Auxiliary microswitch kit 3 poles CMS22	32 g	1
CMS22W3	N331189	2 Auxiliary microswitches kit 3 poles CMS22	35 g	1
US1422BP	F213629	Enlargement pin for auxiliary microswitch	1.5 g	10
US1422PTH	J214138	Auxiliary microswitch assembly pin (between 2 kits)	0.5 g	10



LOCK

### Locking devices

Catalog number	Reference number	Description	Weight	Package
TAGLOCKUS22	T1015927	Locking kit (Tag and lockout)	-	1
LOCK	M223525	Padlock	0.475 kg	1



TBB1A

TBB1C



TBB23A

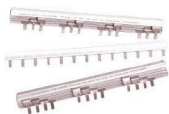
TBB23C

### Power supply

Catalog number	Reference number	Description	Application	Weight	Package
TBB1A	D210315	1 phase axial incoming power supply	Max. rms current 90A	10.1 g	50
TBB1C	E210316	1 phase lateral incoming power supply	Max. rms current 90A	10 g	50
TBB23A	F210317	2 & 3 phases axial incoming power supply	Max. rms current 90A	23.3 g	50
TBB23C	G210318	2 & 3 phases lateral incoming power supply	Max. rms current 90A	23.1 g	50

MERSEN reserves the right to change, update or correct, without notice, any information contained in this datasheet.

## ACCESSORIES



### Wiring bars / Insulated bus bars

Catalog number	Reference number	Design	Application	Weight	Package
CMS22BB2F6	C210314	double pole	Max. rms current 150A, for installation of 6 modules	295 g	5
CMS22BB1F12	B210313	single pole	Max. rms current 90A, for installation of 12 modules	81 g	5

### Indication facilities

Catalog number	Reference number	Description	Weight	Package
CMS1422LHI	A225653	Indicator light kit	10 g	1