

# Modulostar® CMS27 - Ultrasafe™ US27

Modular fuse-holders

## FUSE HOLDERS, FUSE BASES AND SUPPORTS

### UL/CSA FUSE HOLDERS



The innovative and comprehensive Modulostar® range of Mersen fuse-holders.

Modular fuse-holders are finger-safe as per 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 or 3 poles, with or without visual blown fuse indicators, in IEC + UL version.

Multi-pole units can also be field assembled by ordering pin-ties assembly kit. The range offers the possibility to use microswitches (supplied with the holders or ordered separately) to allow remote indication. Modulostar® range is made of tough and durable thermoplastic or thermoset material.

### TECHNICAL DATA OVERVIEW

UL ratings AC / DC	800 V, 150 A, 200 kA
Rated insulation voltage $U_i$	800 V
SCCR	200 kA
Mounting	Installation on to DIN rails to EN 60715
Product Size	For cylindrical fuse links 27x60 or J60
Number of poles	1 to 4 poles

### FEATURES & BENEFITS

- Finger safe
- Degree of protection: IP20
- Optional visual blown fuse indicator & microswitch
- Designs available for DIN rail mounting and direct mounting on board
- Modular design
- Multi-pole assembly kit available
- Plastic material UL94V2 mini
- Flame retardant materials with glow wire flammability index to 960°C

### APPLICATIONS

- All circuits up to 800V using semiconductor fuses for protection of small inverters, UPS systems, motor drives, etc.
- Non-load operation

### STANDARDS

- IEC 60269-2 and IEC 60947-3 Compliance
- UL4248-1 Compliant
- RoHS Compliant
- Plastic material: NF 16101 & 16102 Requirement 2 Compliant
- CCC (screw terminal connection only)



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## PRODUCT RANGE



CMS271

### Modulostar® fuse holders for 27x60 fuse-links, without indicator

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
CMS271	R210580	1	single pole	3	0.30 kg
CMS271N	S210581	1 + N	single pole + neutral conductor	1	0.72 kg
CMS272	T210582	2	double pole	1	0.67 kg
CMS273	V210583	3	triple pole	1	0.91 kg
CMS273N	W210584	3 + N	triple pole + neutral conductor	1	1.25 kg
CMS27N	B210152	N	neutral conductor	3	0.37 kg



US271I

### UltraSafe™ fuse holders for 27x60 fuse-links, with indicator

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
US271I	J226420	1	single pole	3	0.30 kg
US271NI	K226421	1+N	single pole + neutral conductor	1	0.73 kg
US272I	L226422	2	double pole	1	0.67 kg
US273I	M226423	3	triple pole	3	1 kg
US273NI	N226424	3+N	triple pole + neutral conductor	1	1.27 kg

### UltraSafe™ fuse holders for 27x60 fuse-links, without indicator



US273

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
US271	G320005	1	single pole	3	0.30 kg
US272	H320006	2	double pole	1	0.66 kg
US273	J320007	3	triple pole	3	0.9 kg
US27N	R232729	N	neutral conductor	3	0.37 kg



US271MI

### UltraSafe™ fuse holders for 27x60 fuse-links, with auxiliary microswitch and indicator

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
US271MI	R227600	1	single pole	1	0.32 kg
US272M2I	T227602	2	double pole, 2 microswitches	1	0.7 kg
US272MI	S227601	2	double pole, 1 microswitch	1	0.68 kg

### UltraSafe™ fuse holders for 27x60 fuse-links, with auxiliary microswitch, indicator and ring lug connection

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
US271MIRING	Z227607	1	single pole	1	0.54 kg
US272M2IRING	B227609	2	double pole, 2 microswitches	1	1.00 kg

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### UltraSafe™ fuse holders for 27x60 fuse-links, with indicator and ring lug connection

Catalog number	Item number	Number of poles/phases	Design	Package	Weight
US271NIRING	E223518	1+N	single pole + neutral conductor	1	0.8 kg
US27IRING	B223515	1	single pole	3	0.47 kg
US272IRING	C223516	2	double pole	1	1.00 kg
US273IRING	D223517	3	triple pole	3	1.39 kg
US27NIRING	F223519	N	neutral conductor	3	0.34 kg

## TECHNICAL DATA

	CMS27	US271	US27	US27M	US27MIRING	US27IRING
Size	27x60	27x60	27x60	27x60	27x60	27x60
Installation mode	direct mounting on board: 2xM4 screw with tightening torque 1-1.2Nm (8 to 10.6lbs-in)					
Number of poles/phases	1, 1+N, 2, 3, 3+N	1, 1+N, 2, 3, 3+N	1, 1+N, 2, 3	1, 2	1, 2	1, 1+N, 2, 3
Conventional free air thermal current with fuse links $I_{th}$	140 A	140 A	140 A	140 A	140 A	140 A
Max. power dissipation of fuse links $P_n$	11 W	11 W	11 W	11 W	11 W	11 W
Utilisation category	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B	AC20B/DC20B
Rated insulation voltage $U_i$	800 V	800 V	800 V	800 V	800 V	800 V
Rated impulse withstand voltage $U_{imp}$	8 kV	8 kV	8 kV	8 kV	8 kV	8 kV
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Voltage limit for blown fuse indicator	-	230 to 800V AC/DC	-	-	-	230 to 800V AC/DC
Indication System	-	with indicator	-	with auxiliary microswitch	with auxiliary microswitch and special connection	with indicator and special connection
Operating temperature	-25°C to 60°C	-25°C to 60°C	-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 to 80°C	-25°C to 80°C	-25°C to 80°C	-25°C to 80°C	-25°C to 80°C
Connection	rigid wire = 1.5-50mm <sup>2</sup> (16-1/0AWG) multistrand wire = 1.5-16mm <sup>2</sup> (16-6AWG) recommended tightening torque: 3.5Nm (30lbs-in) PZ3 or flat 8x1.2mm screw drivers recommended	rigid wire = 1.5-50mm <sup>2</sup> (16-1/0AWG) multistrand wire = 1.5-16mm <sup>2</sup> (16-6AWG) recommended tightening torque: 3.5Nm (30lbs-in) PZ3 or flat 8x1.2mm screw drivers recommended		-	-	-
<b>Auxiliary switches</b>						
Rated insulation voltage AC	250 V	250 V	250 V	250 V	250 V	250 V
Rated operational current to IEC 60947-5-1/AC15	4A/24V, 4A/48V, 3A/127V, 2,5A/240V	4A/24V, 4A/48V, 3A/127V, 2,5A/240V	4A/24V, 4A/48V, 3A/127V, 2,5A/240V	4A/24V, 4A/48V, 3A/127V, 2,5A/240V	4A/24V, 4A/48V, 3A/127V, 2,5A/240V	4A/24V, 4A/48V, 3A/127V, 2,5A/240V
Rated operational current to IEC 60947-5-1/AC13	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V	3A/24V, 1A/48V, 0,2A/127V, 0,1A/240V
Min. operational current AC/DC	100 mA	100 mA	100 mA	100 mA	100 mA	100 mA
Min_operational_voltage AC/DC	20 V	20 V	20 V	20 V	20 V	20 V
Connection	Faston lugs	Faston lugs	Faston lugs	Faston lugs	Faston lugs	Faston lugs

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### SPECIFIC USAGE CONDITIONS

Ambient temperature	> 20°C	30°C	40°C	50°C	60°C
Derating factor (I <sub>e</sub> )	1	0.95	0.9	0.8	0.7

The power dissipated by the fuse must not exceed the maximum power allowed by the fuse holder (11W).

Therefore, please check that your operating current is lower than the maximum current “I<sub>emax</sub> “ allowed by the fuse holder with the selected fuse.

This “I<sub>emax</sub> “ maximum current rating is intrinsic to the fuse and is obtained from the fuse datasheet.

“I<sub>emax</sub> “ corresponds to the current, in the fuse, dissipating a power equal to the max power allowable by the fuse holder.

Method:

Refer to the fuse datasheet.

From the POWER DISSIPATION curve, define the maximum current “I<sub>emax</sub> “ in the fuse, generating the maximum power permitted by the fuseholder.

“I<sub>emax</sub> “ is given for an ambient temperature below 30°C.

Above 30°C and when the fuseholder is used in multipolar mode, “I<sub>emax</sub> “ is downgraded according to the coefficients defined in the tables below:

No of poles (side by side)	1 to 3	4 to 6	>= 7
Derating factor of current (I <sub>th</sub> )	1	0.95	0.9

Fusible FR27GB80V110T	Fuse holder CMS27
Power dissipation at I <sub>N</sub> : 14W	P < 11W

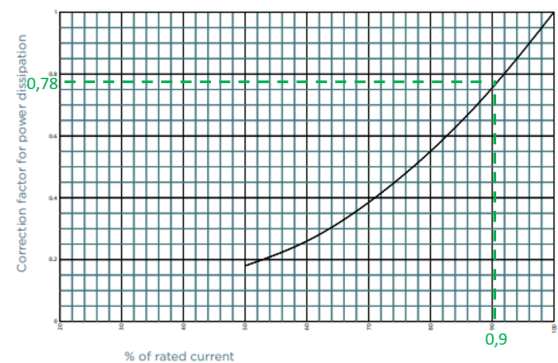
Calculation of ratio :  $\frac{11}{14} = 0,78$

Power dissipation curve gives maximal current I<sub>emax</sub> through the fuse FR27GB80V110T :

$0,9 \times I_N = 0,9 \times 110 = 99A$   
 $\Rightarrow I_{emax} = 99A$

In case of ambient temperature is 40°C, maximal current through the fuse FR27GB80V110T is  $99 \times 0,9 = 89A$

POWER DISSIPATION



Nominal current of fuse-link gR	100 A	110 A
Max. operational current in fuse-holder	94 A	99 A
Cable wire section	25 mm <sup>2</sup>	35 mm <sup>2</sup>

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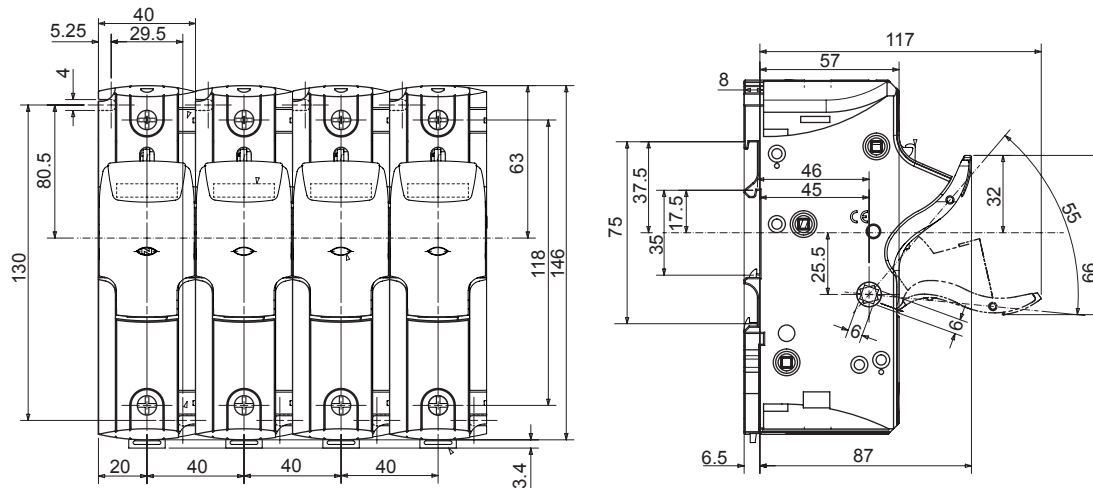
Modular fuse-holders

## DIMENSIONS

**Modulostar® CMS27 Ultrasafe™ US27 fuse-holders for cylindrical fuse-links class 27x60mm**

**Terminal connection: screw, U bolt or connector**

(0114931)



Dimensions in mm

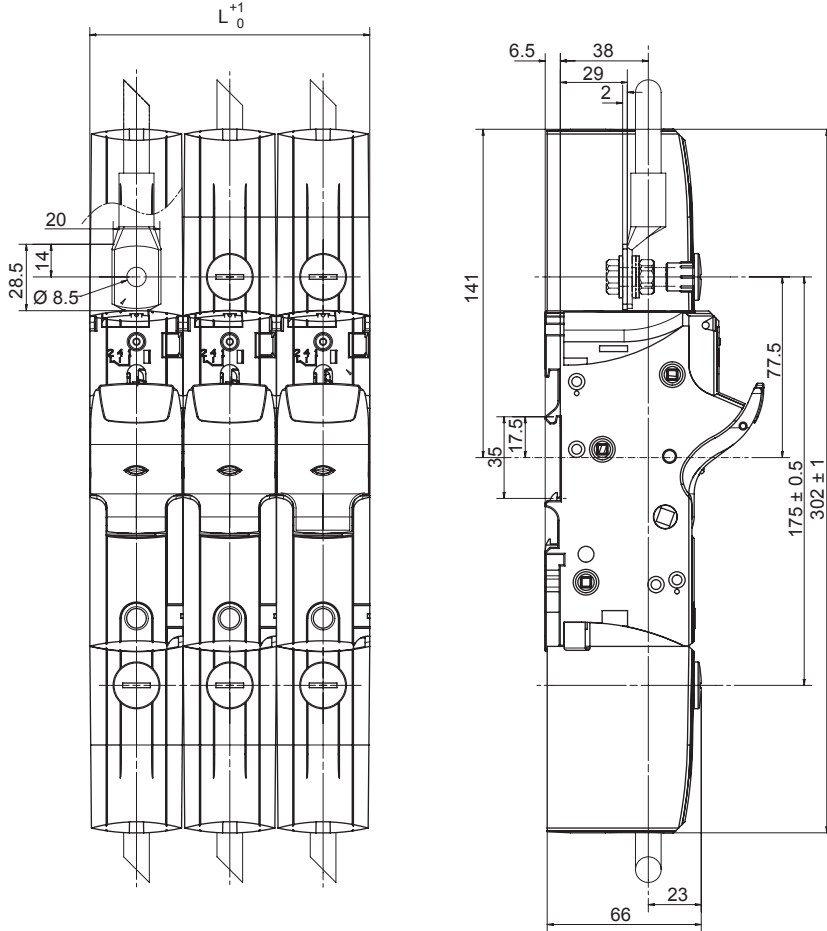
# Modulostar® CMS27 - Ultrasafe™ US27

Modular fuse-holders

## DIMENSIONS

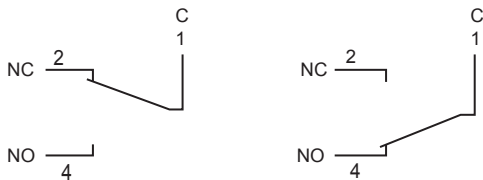
**Modulostar® CMS27 Ultrasafe™ US27 fuse-holders for cylindrical fuse-links class 27x60mm**  
**terminal connection: ring lug**

(C118276)



Dimensions in mm

### Auxiliary Microswitch



## ACCESSORIES

### Kit for multi phase connection

Catalog number	Item number	Design	Package	Weight
US27PAK	H227615	links for connection of multipole units	10	3 g

## ACCESSORIES

### Auxiliary Switches

Catalog number	Item number	Design	Package	Weight
US27W1	E227612	Microswitch kit	1	20 g