



# Gears & Fuse Gears

## IEC General Purpose Fuses Ferrule Fuses Modulostar® CMS27, UltraSafe™ US27



### MODULOSTAR®: CMS27 Fuse Disconnecter ULTRASAFE™: US27 Fuse Holder

- Conforms to the standards:  
UL 512 AND UL 840  
CSA 22-2 N° 39  
EN 60947-1 & 3 (Class : AC20B)
- Rated insulation voltage  $U_i = 800\text{VAC-DC}$
- Full protection against accidentally touching live parts.  
Protection degree : IP 2XB in accordance with the IEC standard 60529.
- High performance, conforming to European standards  
(Attachment to DIN rail - Modular fuse-disconnector).
- The US27 models have cULUS approval.

### Electric Characteristics

| Insulation voltage<br>AC UI<br>in V AC/DC | Impulse<br>withstand voltage<br>Uimp (kV) | Current<br>rating<br>$I_N$ (A) | Fuse<br>current rating<br>$I_N$ (A) | Maxi fuse operating current (A) |      |                  |              |           | Recommended<br>copper wire gauge |                 |
|---|---|--------------------------------|-------------------------------------|---------------------------------|------|------------------|--------------|-----------|----------------------------------|-----------------|
|   |   |                                |                                     | 660V<br>URGD                    | 60gD | 660V URQ-URSCC   | 660V-800VgRB | 1000V URB | AWG                              | mm <sup>2</sup> |
| 800 (CEI) / (US)                          | 8   | 150                            | 8                                   | -                               |      | WITHOUT DERATING |              | -         | 18                               | 1               |
|   |   |                                | 10                                  | -                               |      | WITHOUT DERATING |              | -         | 18                               | 1               |
|   |   |                                | 12                                  | -                               |      | WITHOUT DERATING |              | -         | 18                               | 1               |
|   |   |                                | 16                                  | -                               |      | WITHOUT DERATING |              | -         | 18                               | 1               |
|   |   |                                | 20                                  | -                               |      | WITHOUT DERATING |              | -         | 18                               | 1               |
|   |   |                                | 25                                  | -                               |      | WITHOUT DERATING |              | -         | 12                               | 4               |
|   |   |                                | 32                                  | 32                              |      | 32               | 32           | 29        | 10                               | 6               |
|   |   |                                | 40                                  | 40                              |      | 40               | 40           | 36        | 8                                | 10              |
|   |   |                                | 50                                  | 50                              |      | 45               | 50           | 42        | 8                                | 10              |
|   |   |                                | 63-65                               | 55                              | 65   | 55               | 63           | 50        | 6                                | 16              |
|   |   |                                | 80                                  | 61                              | 80   | 60               | 80           | 60        | 6                                | 16              |
|   |   |                                | 100                                 | 75                              | 100  | 72               | 96           | 72        | 4                                | 25              |
|   |   |                                | 110                                 | -                               |      | -                | 102          | -         | 3                                | 30              |
|   |   |                                | 125                                 | 91                              |      | 90               | -            | 90        | 3                                | 35              |
|   |   |                                | 160                                 | 112                             |      | 110              | -            | 109       | 3                                | 35              |
|   |   |                                | 170                                 | -                               |      | -                | -            | 112       | 3                                | 35              |
| 200                                       | 130                                       |                                | 130                                 | -                               | -    | 1                | 50*          |           |                                  |                 |
| 250                                       | 138                                       |                                | 138                                 | -                               | -    | 1                | 50*          |           |                                  |                 |

\* Busbar and ring lug connection

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### MODULOSTAR®: CMS27 Fuse Disconnecter ULTRASAFE™: US27 Fuse Holder

Designed for 27 x 60 mm (2 3/8 x 1 1/16 In.) ferrule fuses.  
(800V AC - DC, Ith = 150A)

### New Improved Design

Attractive design and colour

### Designed for all 27 x 60 ferrule fuses

- UR curve (class UR)
- gR curve (class gR)
- Class J (UL)

### The Only Fuse-Disconnecter which Conforms to the Standard

The only fuse-disconnector on the market that respects the pre-isolation time defined by the standard (EN60947-1:t >20 ms), when it is equipped with a microswitch.

### Ample Space for Wiring and Connection

Standard wiring with a choice of either :

- One 35 mm<sup>2</sup> cable (3AWG) flexible or rigid,
- Two 16 mm<sup>2</sup> flexible cables (6AWG),
- Wiring with B type connection plates for eye lugs (electronic market in the USA and Japan, global traction market).

### Blown Fuse Indicator

The blown fuse indicator functions at between 100V and 800V AC and DC and is a standard part of the US 27 range. (Leak current less than 0.5mA)

### UL Approval

The US 27 version has cULUS certification.  
File Number E113357.

Fire smoke resistance classification : I3F2 in accordance with the standards NFF 16101 and NFF 16102 (US 27 version).

### The Only Fuse-Holder With IP 20

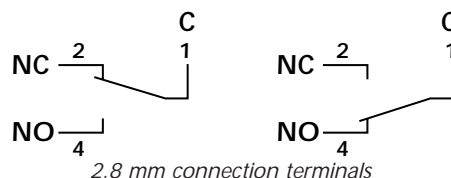
- The only fuse-holder/fuse-disconnector on the market that offers certified IP 20B (open and closed)
- The only fuse-holder/fuse-disconnector on the market for this range of fuse (800V AC-DC 150A).

### Identification of Terminals

The terminals are easy to identify due to the marker kit provided with the standard product.

### Blown Fuse Micro-Switch, Safe Pre-Isolation and fuse presence characteristics for the US27 version

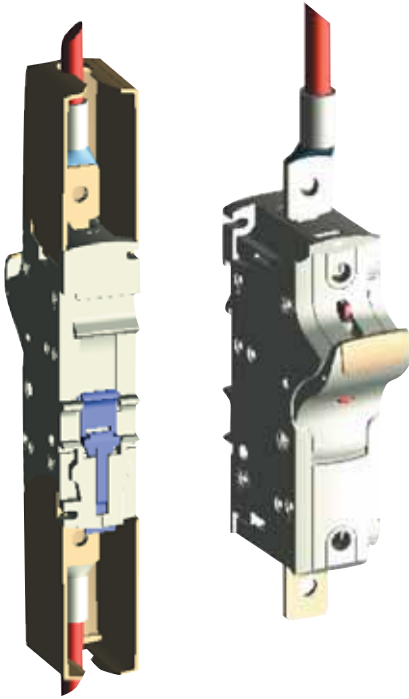
Rated and minimum use current : In= 5A, Imini= 100 mA  
Rated and minimum use voltage : Un= 250V, Umini= 20V  
Approvals :





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**ULTRASAFE™: US27 Fuse Holder**

### Versatile Methods of Mounting

Option of mounting the fuse-holder with phase and neutral poles, as well as micro-switches, due to the connection accessories.

### Several Kinds of Attachment

- With M4 screws,
- 35 mm or 75 mm symmetric DIN rail\*,
- Asymmetric DIN rail with adapter (Ref. Q098500).

\* Need of 15 mm distance between DIN rail and panel

### Possibility of Using Connection Plates

For a cable with a diameter greater than either a 35 mm<sup>2</sup> rigid or flexible cable, or two 16 mm<sup>2</sup> flexible cables, the connection can be made using ring lug.

Protection covers are provided with this series to safeguard against accidental contact. Connection to connection plates, for cables equipped with ring or fork-type lugs.

### Climatic Conditions of Use

This range of products has been designed for use in temperate, tropical and equatorial climates, provided that the following temperature/humidity conditions are not exceeded:

|                             |    |    |    |
|-----------------------------|----|----|----|
| Maximum temperature °C      | 20 | 40 | 50 |
| Maximum relative humidity % | 95 | 80 | 50 |

### Resistance to Vibrations

Test with sinusoidal vibrations, scanning the three main axes of the holder.

- Spectrum :
- 1<sup>st</sup> segment (2-16Hz) constant displacement  
x = 5 mm peak
  - 2<sup>nd</sup> segment (16-250Hz) constant acceleration  
γ = 5g peak

Exponential scanning speed : 1 octave per minute.

Duration : 2 hours per axis.

| 27x60 Fuses used             |                |                | Applications  |
|------------------------------|----------------|----------------|---|
| Ranges                       | U <sub>N</sub> | I <sub>N</sub> |   |
| (6,621 CP URGD 27.60 ...)    | 660VAC         | 63 to 250A     | Class aR - Protection of semiconductor equipment, e.g. Soft starters, static relays, or regulators. |
| (6,621 CP URQ, URS 27.60...) | 660VAC         | 32 to 250A     |   |
| (821 CP gRB 27.60...)        | 800VAC         | 8 to 110A      | Class gR - Protection of cables, semiconductor equipment and AC instrument circuits.                |
| (1021 CP URB 27.60...)       | 1000VAC        | 25 to 170A     | Class aR - Protection of semiconductor equipment, e.g. Soft starters, static relays, regulators.    |
| (CC 4,421 CP gLB 27.60...)   | 440VDC         | 125 to 160A    | Protection of DC instrument circuits, traction auxiliary circuits, DC fed converters.               |
| (CC 6,621 CP gRB 27.60...)   | 660VDC         | 0.8 to 125A    |   |



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#### Range Without Microswitch

| Number of poles | Connections                   | Cat. Number | Designation                  | Ref. Number | Weight (g) | Pack |
|-----------------|-------------------------------|-------------|------------------------------|-------------|------------|------|
| 1               | By screw, U bolt or connector | US271I      | US 271I                      | J226420     | 285        | 3    |
| 1               | By screw, U bolt or connector | CMS271      | CMS 27 gR -UR                | R210580     | 290        | 3    |
| 1               | Ring lug connection           | US271RING   | US 27I ring lug              | B223515     | 340        | 3    |
| 1 + N           | By screw, U bolt or connector | US271NI     | US 27 1N I                   | K226421     | 580        | 1    |
| 1 + N           | By screw, U bolt or connector | CMS271N     | CMS 27 gR-UR 1+N             | S210581     | 570        | 1    |
| 1 + N           | Ring lug connection           | US271NIRING | US 27 I+NI ring lug          | E223518     | 690        | 1    |
| N               | By screw, U bolt or connector | CMS27N      | CMS 27 N                     | B210152     | 285        | 3    |
| N               | Ring lug connection           | US27NIRING  | US 27 N ring lug             | F223519     | 340        | 3    |
| 2               | By screw, U bolt or connector | US272I      | US 27 2I                     | L226422     | 580        | 1    |
| 2               | By screw, U bolt or connector | CMS272      | CMS 27 gR - UR II            | T210582     | 570        | 1    |
| 2               | Ring lug connection           | US272IRING  | US 272 I ring lug            | C223516     | 690        | 1    |
| 3               | By screw, U bolt or connector | US273I      | US 27 3 I                    | M226423     | 855        | 1    |
| 3               | By screw, U bolt or connector | CMS273      | CMS 27 gR - UR III           | V210583     | 870        | 1    |
| 3               | Ring lug connection           | US273IRING  | US 27 3 I ring lug           | D223517     | 1030       | 1    |
| 3 + N           | By screw, U bolt or connector | US273NI     | US 27 3 NI                   | N226424     | 1200       | 1    |
| 3 + N           | By screw, U bolt or connector | CMS273N     | CMS 27 gR - UR III+N         | W210584     | 1250       | 1    |
| Assembly kit    |                               | US27PAK     | KIT MULTIPOL CMS/US27        | H227615     | 10         |      |
| Microswitch*    |                               | US27W1      | microcontact unipolaire 1 MC | E227612     | 1          |      |

\* for the US27 version only

The ring lug connection, four-pole model does not exist in the configuration (3 + neutral).

The blown fuse indicators are available with the standard US 27 version.

The recognized US 27 equipment uses UL 94 VO plastic materials. The US27range is pre-equipped with blown fuse microswitch and safe pre-isolation accessories, to transform the products into fuse-disconnectors.

#### Range With Microswitch

| Number of poles | Connections                   | Cat. Number  | Designation               | Nb of microswitches | Ref. Number | Weight (g) | Pack (g) |
|-----------------|-------------------------------|--------------|---------------------------|---------------------|-------------|------------|----------|
| 1               | By screw, U bolt or connector | US271MI      | US 271 I PRE+1MC          | 1                   | R227600     | 295        | 3        |
| 1               | Ring lug connection           | US271MIRING  | US 271 ring lug PRE+1MC   | 1                   | Z227607     | 355        | 1        |
| 2               | By screw, U bolt or connector | US272M2I     | US 27 2I PRE+1MC          | 2                   | T227602     | 600        | 1        |
| 2               | Ring lug connection           | US272M2IRING | US 27 2I ring lug PRE+1MC | 2                   | B227609     | 710        | 1        |



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### Range of Accessories

#### Micro-switches and safe pre-isolation

| Number of poles | Catalog Number | Reference number | Designation    | Packaging |
|-----------------|----------------|------------------|----------------|-----------|
| 1               | US27W1         | E227612          | Microswitch 1P | 1         |

*Note : 2 one-pole microswitches need to be purchased for a two-pole assembly (Ph+N or two-phase).*

#### Pole Assembly Kit

| Number of poles      | Catalog Number | Reference number | Designation                        | Packaging |
|----------------------|----------------|------------------|------------------------------------|-----------|
| For 2, 3 and 4 poles | US27PAK        | H227615          | Kit Multipol CMS/US 27 for 10 Kits | 1         |

*The assembly kit is made up of staples to assemble the poles and pins for the handles.*

#### Neutral Tubes

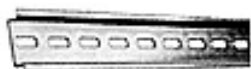
The neutral poles come with a neutral tube, which is sealed with plastic so that it cannot be removed.

#### 35mm Mounting Rail

| Type                            | Catalog Number | Reference number | Designation                     | Packaging         |
|---------------------------------|----------------|------------------|---------------------------------|-------------------|
| Symmetric                       |                | J213172          | 2 meters of DIN rail            | 40 lengths of 2 m |
| Symmetric drilled               |                | C213672          | 2 meters of DIN drilled rail    | 40 lengths of 2 m |
| Symmetric reinforced            |                | R215203          | 2 meters of DIN reinforced rail | 20 lengths of 2 m |
| Adaptor for asymmetric DIN rail | ADAP-RASST     | Q098500          | Adaptor for asymmetric DIN rail | 50                |



Symmetric



Symmetric drilled



Symmetric reinforced

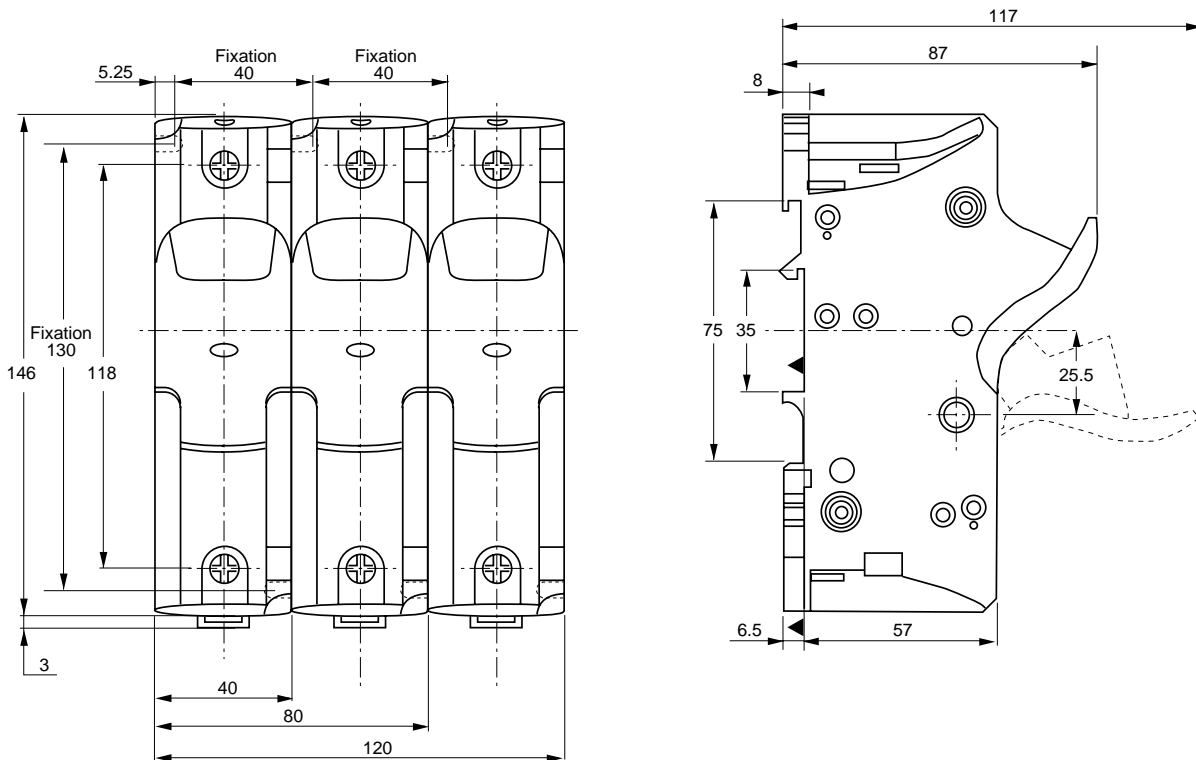


## IEC General Purpose Fuses

### Ferrule Fuses

### Modulostar® CMS27, UltraSafe™ US27

#### Dimensions CMS27, US27



#### Connection by fixed terminal screw-clamps for wires. Maximum section:

- One conductor, rigid or multistrand : Maximum 35 mm<sup>2</sup> (3 AWG)
- 2 conductors, multistrand : 16 mm<sup>2</sup> (6 AWG) or rigid with tightening torque : 2.8 - 3.5 Nm (30 lbs.in)
- Ferraz Shawmut recommends to use screwdrivers PZ 3 or Flat 8 x 1.2 mm (maximum diameter 8 mm).
- Ring lug connection.

#### Mounting:

- Simple snap mounting on 35 mm symmetric DIN rail (standard EN 50022) and 75 mm with 2 locking positions\*.
- Directly onto the board with M4 screws and tightening torque from 1 to 1.2 Nm (11 lbs.in)
- On 35 mm asymmetric DIN rail with adaptor (Ref. Q098500)

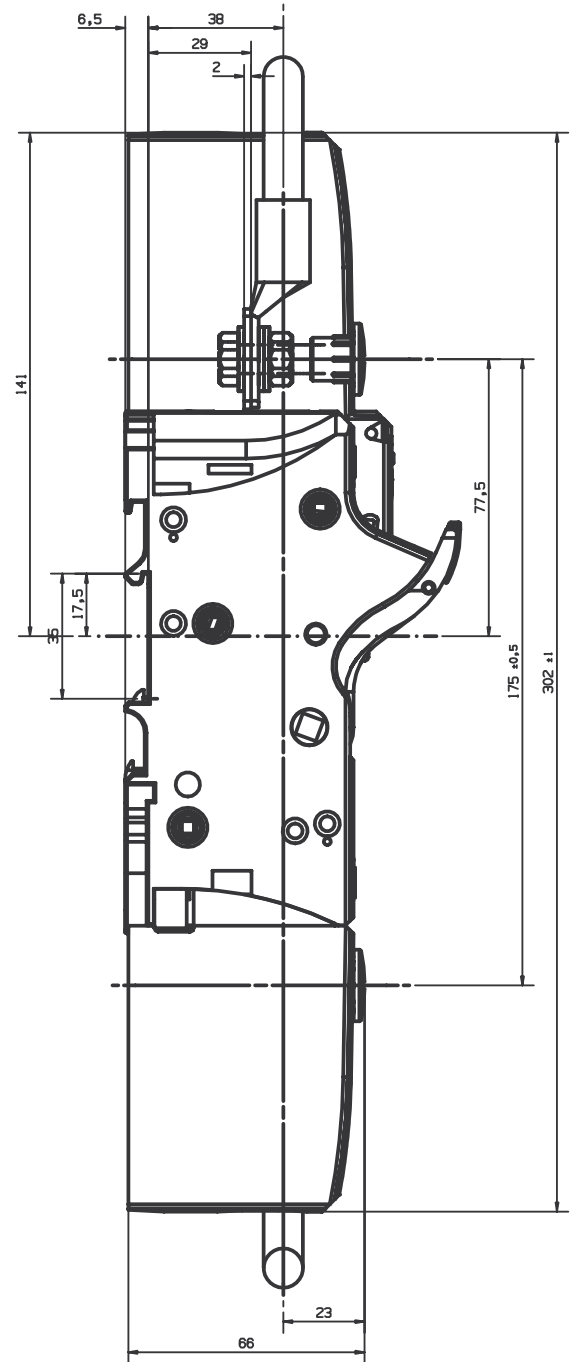
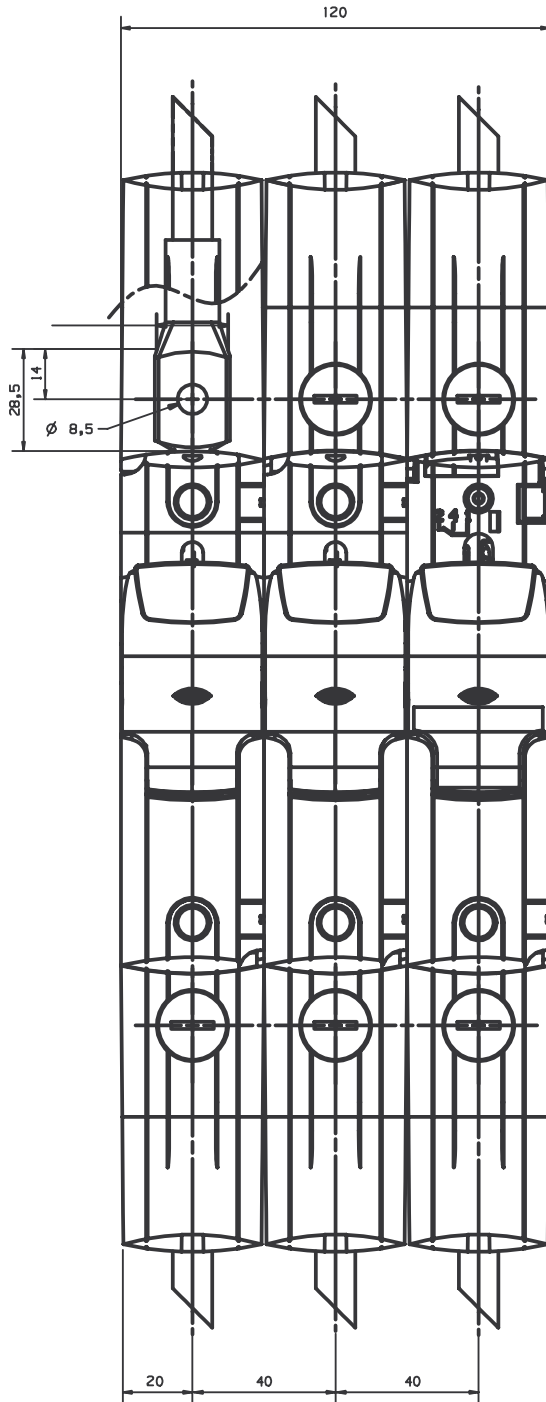
\* Need of 15 mm distance between DIN rail and panel



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Dimensions CMS27, US27  
for ring lugs connections





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