



# Electrical Distribution

## Protection

Extract of Catalogue  
Low Voltage Energy

**MICHAUD**



# 60 YEARS EXPERTISE

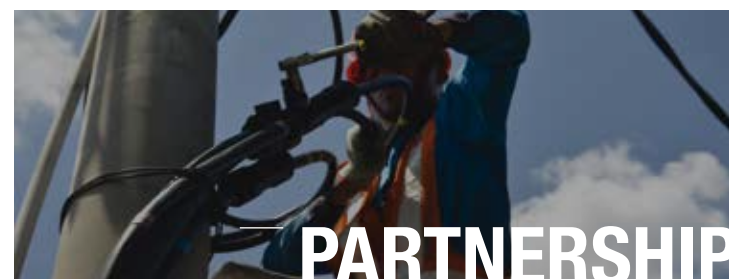
**M**ICHAUD is a French industrial group specialised in energy distribution networks for more than 60 years.

MICHAUD Export, subsidiary dedicated to international markets, develops and sells solutions according to applicable standards thanks to its know-how as well as its relationships with local users.



## PRESCRIPTION & DIAGNOSIS

A strong market understanding and a recognised technical knowledge to serve your projects in order to propose suitable solutions.



**PARTNERSHIP**

## INNOVATION & QUALITY

Investing near 8% of the turnover in R&D, we develop tomorrow's solutions and guarantee quality and reliability of products thanks to a COFRAC and ASEFA accredited and independent test laboratory (accreditation n°1-0579 / [www.cofrac.fr](http://www.cofrac.fr)).



## FITTERS TRAINING

As preferred technical partner, we encourage learning and knowledge transmission together with product commercialisation.



**SUPPORT**

According to the international standards, Michaud Export designs and develops energy distribution solutions. The product range is focused on two fields of expertise:

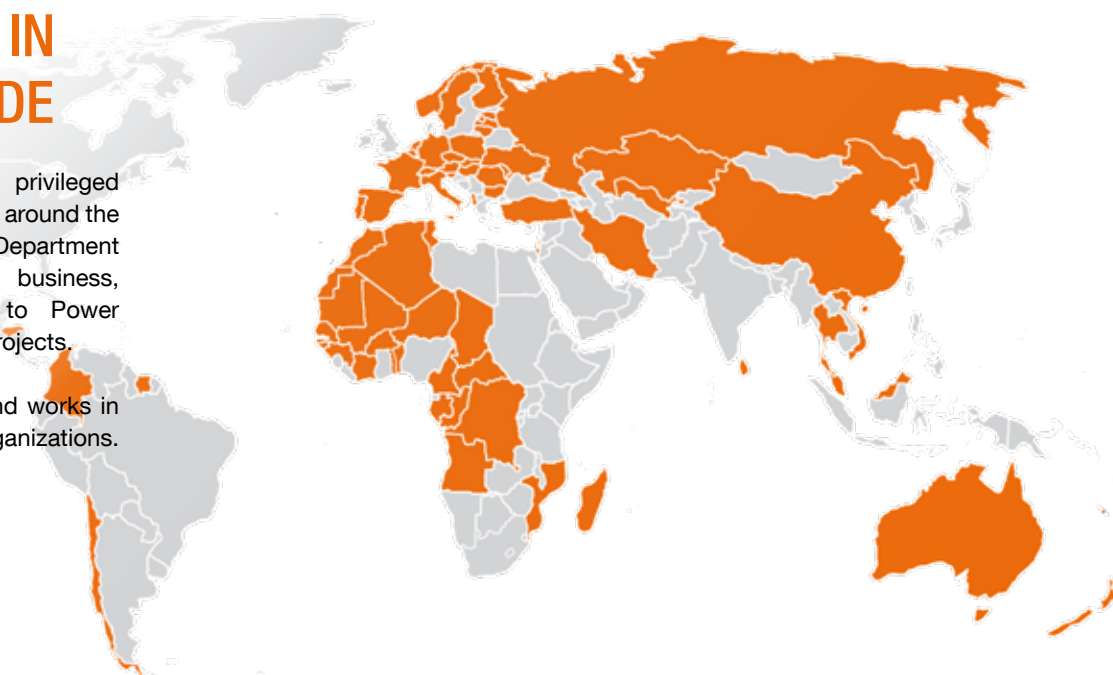
- **Low Voltage Network:** to connect and protect the overhead and underground electrical lines ;
- **Energy Controlling:** to manage and offer easy access to electricity.



## +70 PARTNERS IN THE WORLD-WIDE

MICHAUD benefits from a privileged collaboration with many partners around the world. Thanks to an engineering Department dedicated to international business, MICHAUD provides support to Power Utilities in their grid expansion projects.

Besides, MICHAUD supports and works in partnership with power sector organizations.



## PRODUCTS BRANDS

**MICHAUD**  
HABITAT ET RÉSEAU ÉLECTRIQUE

**MIPROTEC**  
PROTECTION ET INSTALLATION



**QUALITY**



PROTECTION



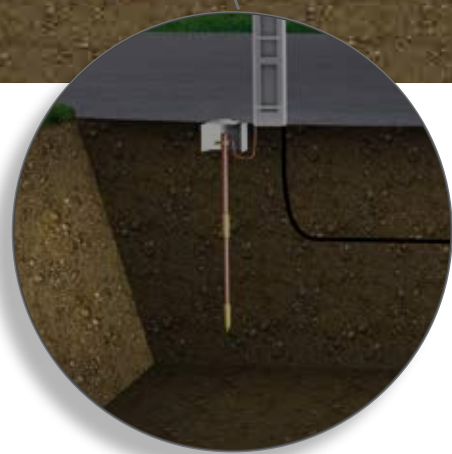
HOUSING



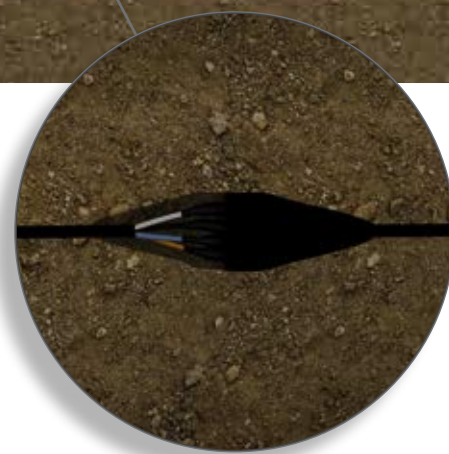
OVERHEAD



**MICHAUD**



EARTH SYSTEM



UNDERGROUND



INSTALLATION



For a safe and effective electrical line, MICHAUD offers solutions for the **protection of individual premises** as well as **low voltage network**.



## LASTING INSTALLATIONS

As a specialist in low voltage distribution, MICHAUD gets involved in the networks **performance optimisation** and the guarantee of long-lasting electrical lines.



## PROTECTED NETWORKS

Thanks to protections installed in **strategic points** on the network or on service level, the power company takes advantage of a better control of faults propagation and an easier maintenance.



## CUSTOMIZED PRODUCTS

The technical skills and the right understanding of problematics on the field enable to propose **suitable solutions** for specific demands (customer identification on the product, easy handling, fuse blown indicator...).

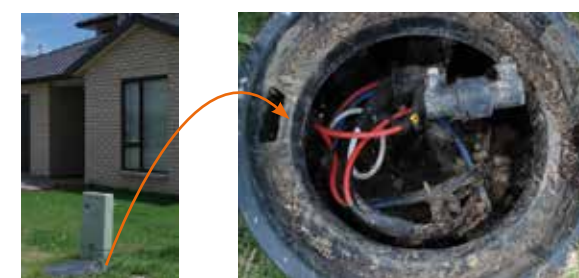
## Service protection

Two solutions can be used for individual houses protection: the **fuse switch disconnecter** or the **cutout sleeve**. These devices enable a possible cutting point facilitating every interventions for the network manager.

Comparison between	Fuse switch disconnecter	and	Cutout sleeve
Manipulation ease	++		+
	From ground level with a stick		On top pole
Economical solution	+		++

## A solution for the protection in underground environment

In order to adapt to various specifications met on the field, a partially and temporarily submersible solution, has been designed to ensure the protection of the underground network connection.

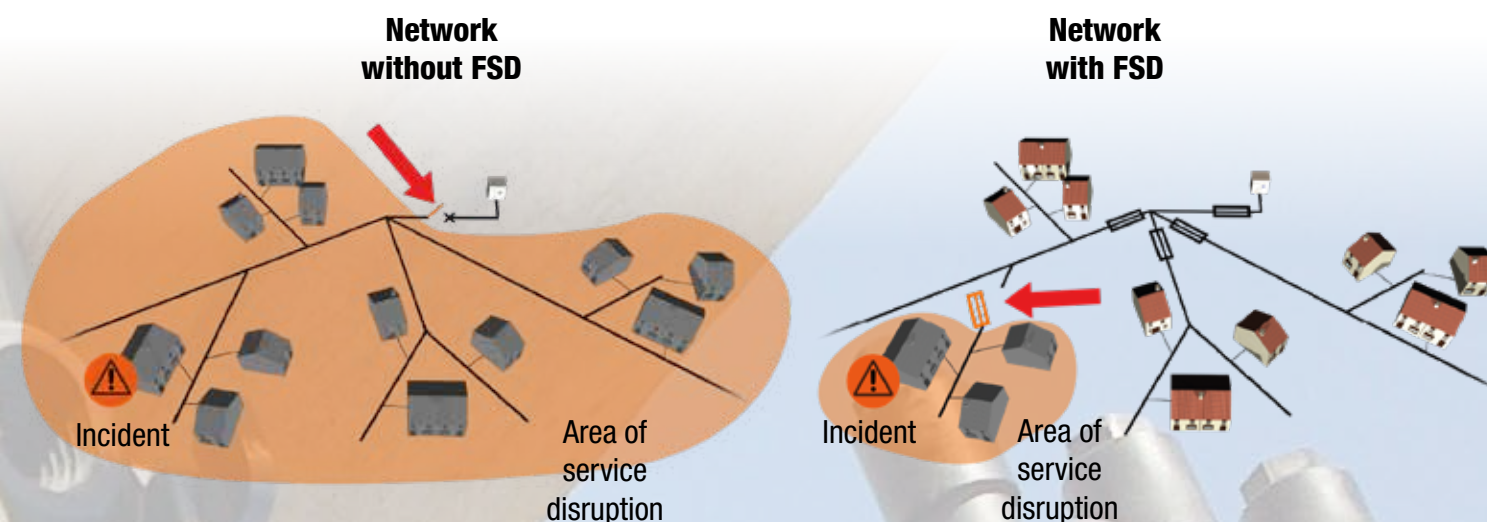


- ✓ Installation in a pit
- ✓ Working temporarily into water
- ✓ Full waterproof connection

## Network protection

Low voltage networks are usually **structured in a star shape** from the LV/MV transformer and are not looped. A single short-circuit could therefore make an entire network fail, creating customer service disruptions.

## MICHAUD solution: protection on strategic points



- ✓ Control of faults propagation
- ✓ Reduction of customers discontents

+ A suitable earth system device enables the temporary fuse switch protection for work.

SEE SHEET  
Earth system / Switch earthing and short circuiting device fort gang FSD



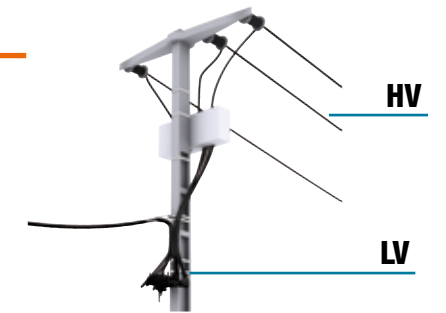




Installation video available on [www.michaud-export.com](http://www.michaud-export.com)

## The benefits:

- + 50 up to 80% more economical than a circuit breaker
- + Strong solution, very little sensitive to charge imbalances
- + Solution available in single and three phases



## Fuse switch disconnecter: many options for all configurations

Two types of protections

### Service protection

Rating 100A or 160A

Fuse size 22x58 or NH 00

Conductors section max 35mm<sup>2</sup>, 95mm<sup>2</sup> or 120mm<sup>2</sup>

✓ Single phase FSD

### Network protection

Rating 160A

Fuse size NH 00

Conductors section max 95mm<sup>2</sup> or 120mm<sup>2</sup>

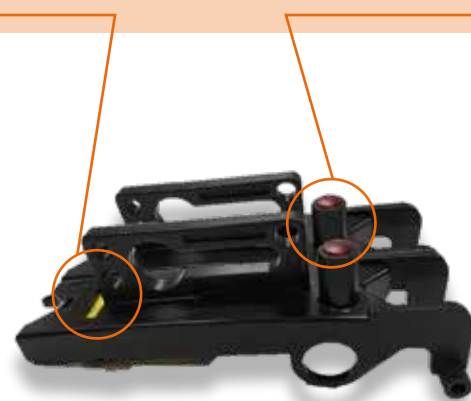
✓ Multi-phase FSD

✓ Available in 2, 3, 4, 6 poles

Many options

P

Fuse presence indicator



Check the fuse presence

L

Blown fuse LED light



Be aware of a blown fuse

H

Shear head indicator



Check from ground level the good sheared-off of the head

N

Customer identification number



Identify the line or customer number

S

Neutral simultaneous cut



Enable the simultaneous cut of phases and neutral

C

Color of the fuse carrier



Distinguish phases and neutral

Fuse switch disconnecter 100A

Rating 100A  
Fuse size 22x58  
Conductors section 6-35mm<sup>2</sup>



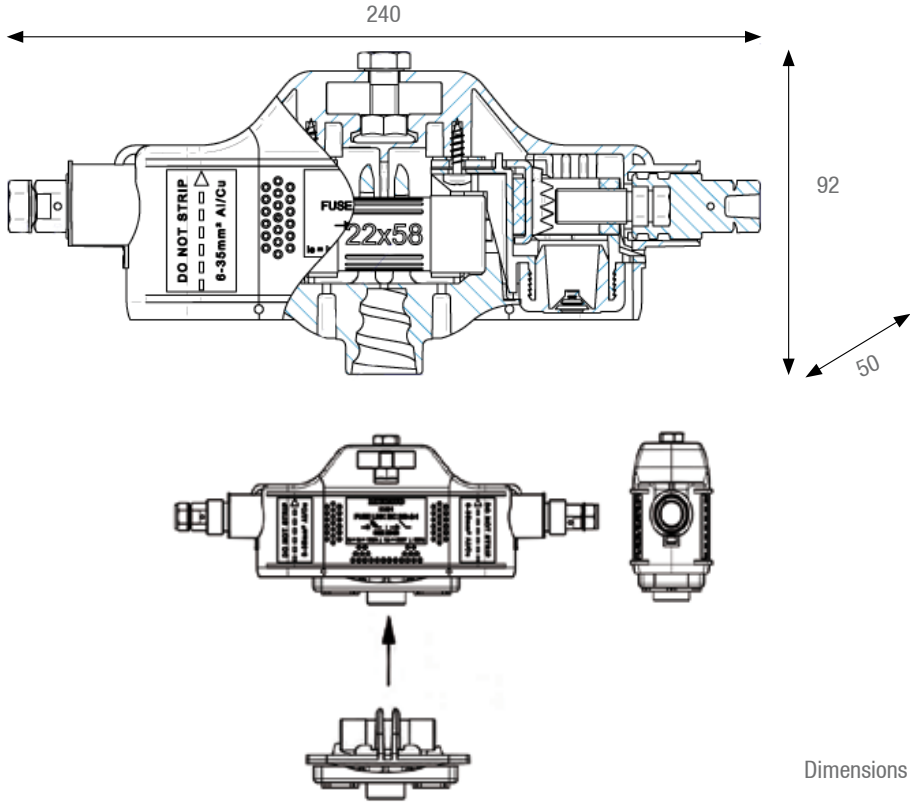
Application

This Fuse Switch Disconnecter (FSD) is a single phase device. It is installed at the top of pole or on façade. It protects the overhead connection supplying an individual customer and the low voltage network. It is designed to receive a neutral tube or 100A maximum, size 22x58 fuse cartridge (according to the IEC 269-2.1 standard).

Description

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 100A
- The terminals are completely insulated. Connection is established using insulation piercing technology.
- The insulated conductor section ranges from 6 up to 35mm<sup>2</sup> Al/Cu.
- The tightening efficiency of the conductors is ensured by two shear head screws located on side body.
- The conductors inserting is performed from below.
- The fuse holder is opened, removed and closed using a pigtail stick.
- Note: the fuse holder can be installed without fuse.
- Screw heads and the fuse carrier can be sealed if necessary. The protection degree is IP33.

This fuse switch disconnecter meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standard.



Dimensions in mm

Code	Designation	Weight (kg)	Sales unit
K491	SINGLE PHASE FSD 100A (22x58) PIERCING 6-35	0.385	20

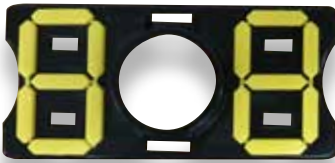
Costumised solution:

- Several options available:
- For the shear head indicator, add **H** to the reference.
  - For the customer identification number, add **N** to the reference.
  - For the colour of the fuse carrier, add **C** to the reference and specify the colour (white is standard colour).



Option: Number plate alone

Code	Designation	Weight (kg)	Sales unit
K492	NUMBER PLATE FOR FSD K491 / CABLE	0.025	100



Accessories

The bracket is made of galvanised steel highly resistant to corrosion. Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the FSD). The adaptor made of synthetic materials is designed to fix a fuse switch disconnecter on a "swan neck" type bracket. It can also be fixed using a strap or 2 screws.



Code	Designation	Weight (kg)	Sales unit
K297	METAL BRACKET FOR SINGLE PHASE FSD	0.490	30
K295	PLASTIC ADAPTOR FOR SINGLE PHASE FSD BRACKET	0.070	5

SEE SHEET  
PROTECTION / Operating stick

SEE SHEET  
PROTECTION / Fuses



Installation video available on [www.michaud-export.com](http://www.michaud-export.com)



Fuse switch disconnecter 100A



K291

Rating 100A  
Fuse size 22x58  
Conductors section 6-95mm<sup>2</sup>

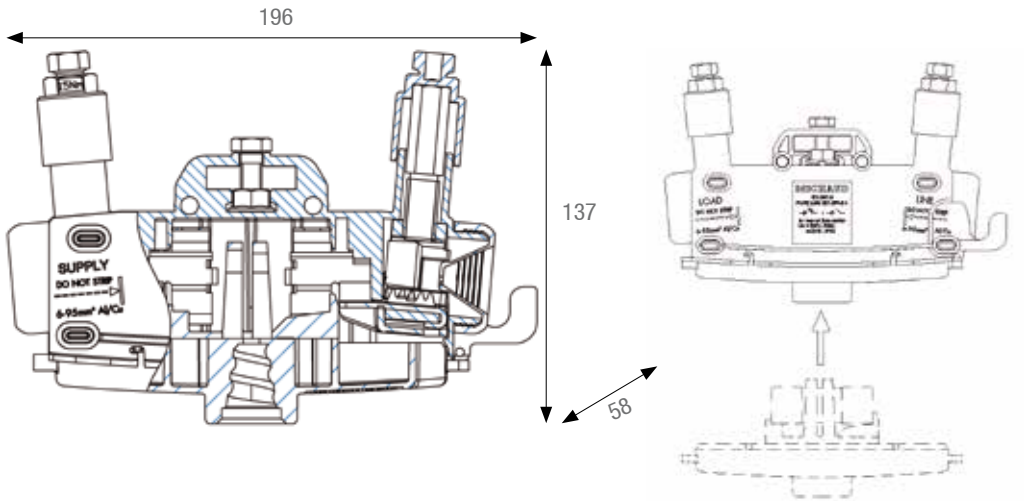
Application

This Fuse Switch Disconnecter (FSD) is a single phase device. It is installed at the top of pole or on façade. It protects the overhead connection supplying an individual customer and the low voltage network.  
It is designed to receive a neutral tube or a 100A maximum, size 22x58 fuse cartridge (according to the IEC 269-2.1 standard).

Description

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 100A
- The terminals are completely insulated. Connection is established using insulation piercing technology.
- The insulated conductor section ranges from 6 up to 95mm<sup>2</sup> Al/Cu.
- The tightening efficiency of the conductors is ensured by two shear head screws on top body.
- The fuse holder is opened, removed and closed using a pigtail stick.  
Note: the fuse holder can be installed without fuse.
- The polarity test points are accessible on each terminal without removing the fuse holder.
- The fuse holder can be sealed if necessary. The protection degree is IP33.

This fuse switch disconnecter meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standards.



K291

Dimensions in mm

Code	Designation	Weight (kg)	Sales unit
K291	SINGLE PHASE FSD 100A (22x58) PIERCING 6-95	0.510	1

Costumised solution:

- Several options available:
- For the fuse presence indicator, add **P** to the reference.
  - For the blown fuse LED indicator, add **L** to the reference.  
(Use a NH 00 fuse carrying metal fixing bracket linked to the blade)
  - For the shear head indicator, add **H** to the reference.
  - For the customer identification number, add **N** to the reference.
  - For the colour of the fuse carrier, add **C** to the reference and specify the colour (black is standard colour).



K291-C  
Colour of the fuse carrier



Accessories

The bracket is made of galvanised steel highly resistant to corrosion. Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the FSD).  
The adaptor made of synthetic materials is designed to fix a fuse switch disconnecter on a "swan neck" type bracket. It can also be fixed using a strap or 2 screws.



K297 K295

Code	Designation	Weight (kg)	Sales unit
K297	METAL BRACKET FOR SINGLE PHASE FSD	0.490	30
K295	PLASTIC ADAPTOR FOR SINGLE PHASE FSD BRACKET	0.070	5

SEE SHEET  
PROTECTION / Operating stick

SEE SHEET  
PROTECTION / Fuses

Installation video available on [www.michaud-export.com](http://www.michaud-export.com)

Fuse switch disconnecter 160A

Rating 160A  
Fuse size NH 00  
Conductors section  
6-95mm² (K292), 6-120mm² (L277)



K292  
Insulation piercing



L277  
Stripping

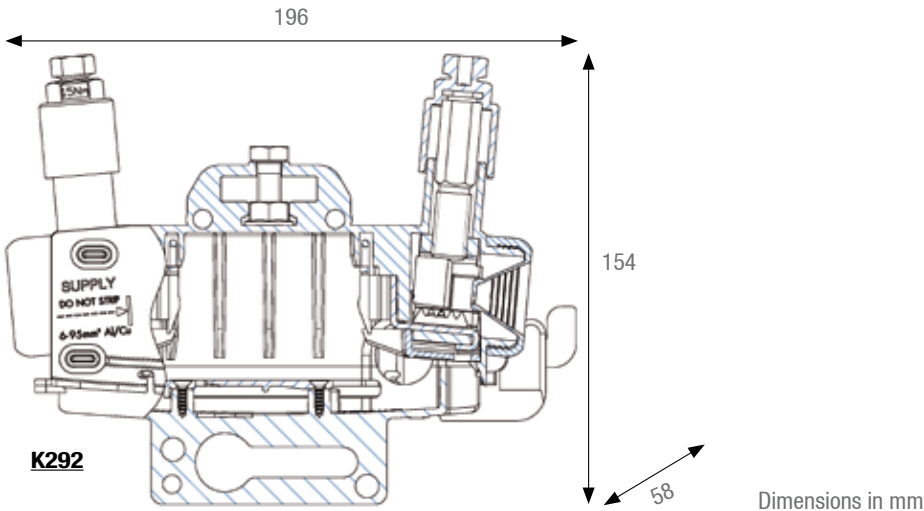
Application

This Fuse Switch Disconnecter (FSD) is a single phase device. It is installed at the top of pole or on façade. It protects the overhead connection supplying an individual customer and the low voltage network.  
It is designated to receive a 160A fuse cartridge or 240A maximum solid connecting link size 00 (according to the IEC 269-2.1 standard).

Description

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 160A
- The terminals are completely insulated.
- The FSD K292 uses the insulation piercing technology and receives insulated conductors from 6 up to 95mm² Al-Cu (entry seals are of black colour).
- The FSD L277 uses the stripping technology and receives insulated conductors from 6 up to 120mm² Al-Cu (entry seals are of grey colour).
- The tightening efficiency of the conductors is ensured by two shear head screws on top body.
- The fuse holder is opened, removed and closed using a hook stick.
- Note: the fuse holder can be installed without fuse.
- The polarity test points are accessible on each terminal without removing the fuse holder.
- The fuse carrier can be sealed if necessary. The protection degree is IP33.

This fuse switch disconnecter meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standards.



Code	Designation	Weight (kg)	Sales unit
K292	SINGLE PHASE FSD 160A (NH 00) PIERCING 6-95	0.470	1
L277	SINGLE PHASE FSD 160A (NH 00) STRIPPING 6-120	0.470	1

Costumised solution:

Several options available:

- For the presence indicator, add P to the reference.
- For the blown fuse LED indicator, add L to the reference.  
(Use a NH 00 fuse carrying metal fixing bracket linked to the blade)
- For the shear head indicator, add H to the reference.
- For the colour of the fuse carrier, add C to the reference and specify the colour (black is standard colour).



Option: Fuse carrier alone

Fuse carriers L297 and L298 can be used with existing MICHAUD fuse switch disconnectors size 00 on the field for retrofit operations, adding indicators.

Code	Designation	Weight (kg)	Sales unit
L297	FUSE CARRIER (Size 00) WITH BLOWN FUSE INDICATOR	0.091	1
L298	FUSE CARRIER (Size 00) WITH DISPLAY & BLOWN FUSE INDICATORS	0.091	1

Accessories

The bracket is made of galvanised steel highly resistant to corrosion. Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the FSD).  
The adaptor made of synthetic materials is designed to fix a fuse switch disconnecter on a "swan neck" type bracket. It can also be fixed using a strap or 2 screws.



Code	Designation	Weight (kg)	Sales unit
K297	METAL BRACKET FOR SINGLE PHASE FSD	0.490	30
K295	PLASTIC ADAPTOR FOR SINGLE PHASE FSD BRACKET	0.070	5

SEE SHEET  
PROTECTION / Operating stick

SEE SHEET  
PROTECTION / Fuses



Installation video available on [www.michaud-export.com](http://www.michaud-export.com)



Fuse switch connector 20A

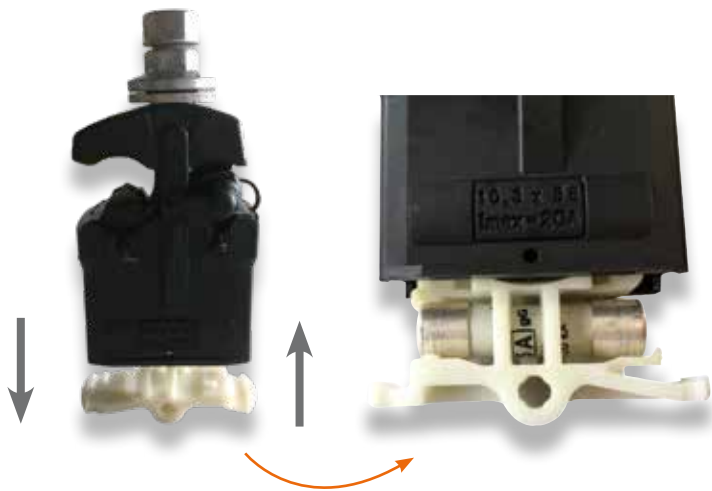
Rating 20A  
Fuse size 10.3x38  
Conductors section 16-95mm²/  
1.5-16mm² depending on the versions



Application

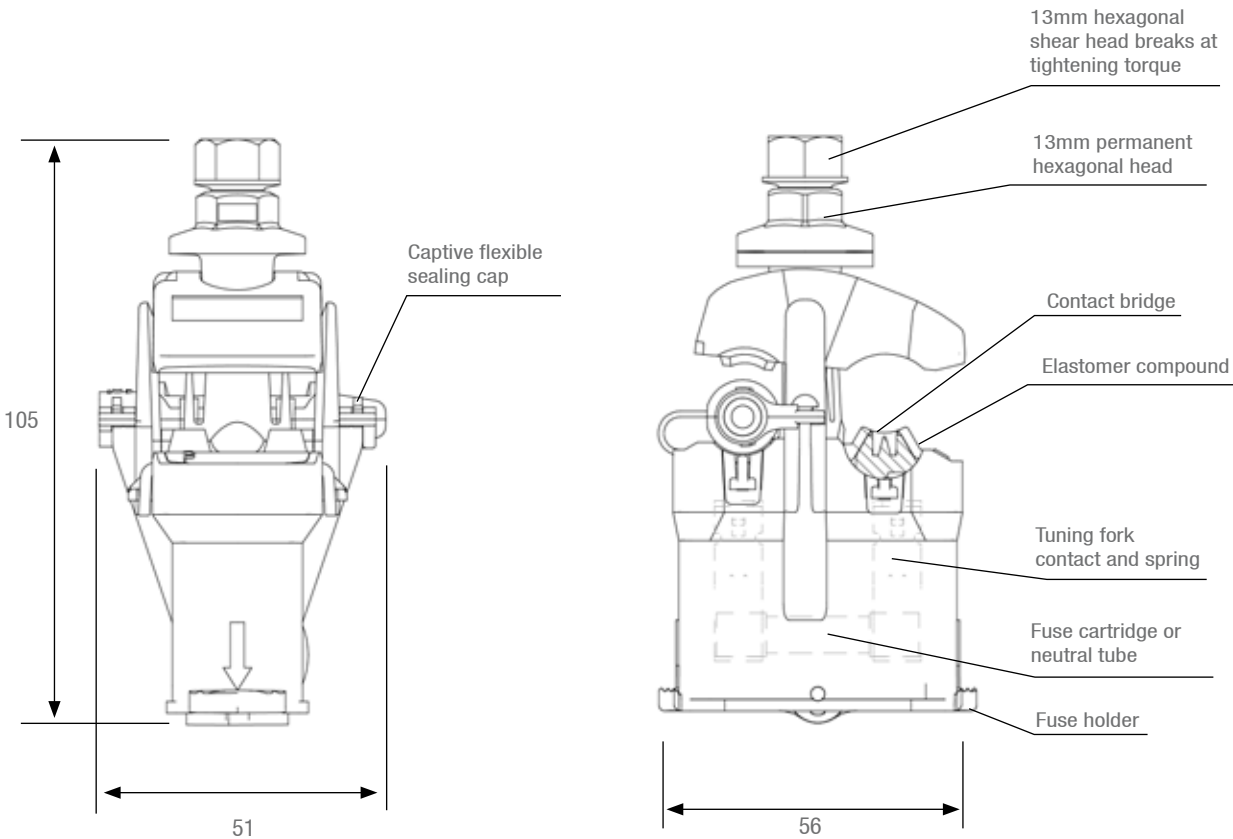
This fuse switch connector is designed to receive a 10.3x38mm fuse cartridge or neutral tube. It is used to protect street light or insulated service conductors connected to the low voltage A.B.C. (Aerial Bundled Conductors) or bare line conductors. It is designed for 20A maximum fuse cartridge. It is used in no mechanical load situations.

The benefit:  
+ Unlosable fuse carrier



Description

- Tightening of the bare or insulated main line conductor and piercing on the tap line conductor are carried out simultaneously in a single operation.
- The sealing end cap is flexible in order to check good tap conductor insertion. It can be installed with service cable outlet on left or right side.
- Tightening efficiency is ensured by a shear head screw.
- An elastomer compound ensures insulation during piercing of the conductors to be connected.
- Connection of the fuse cartridge on the tuning fork contacts is ensured using springs.
- The sealable fuse holder is operated easily by hand. Two arrows engraved on the side of the box indicate the opening and closing direction to be followed.
- The protection degree is IP2X during installation. It becomes IP33 after installation on the insulated conductor.



Dimensions in mm

Code	Designation	Capacities Main (mm²)	Capacities Tap insulated Al-Cu (mm²)	Weight (kg)	Sales unit
K223	FUSE CONNECTOR 20A (10.3x38) PIERCING 95/16	Al / Cu Insulated 16-95	1.5-16	0.130	10
K228	FUSE CONNECTOR 20A (10.3x38) BARE Cu 95/10	Cu bare 16-95	1.5-10	0.130	10
K229	FUSE CONNECTOR 20A (10.3x38) BARE Al 95/100	Al bare 16-95	1.5-10	0.130	10

# Fuse switch connector 100A

**Rating** 100A

**Fuse size** 22x58

**Conductors section**  
35-150mm<sup>2</sup> / 6-35mm<sup>2</sup>



## Application

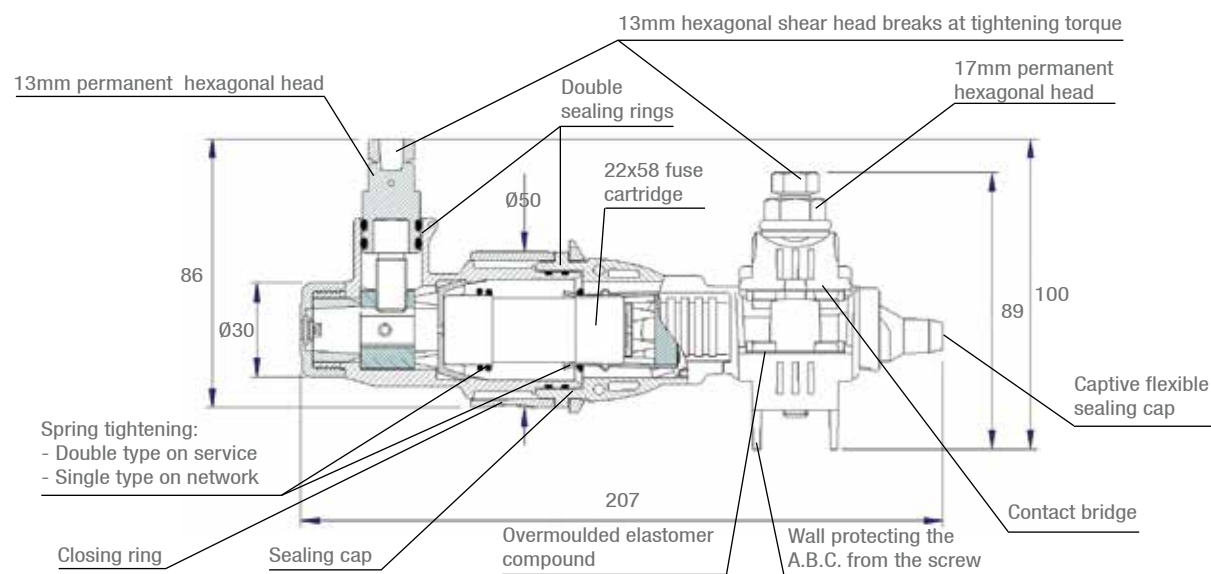
This fuse switch connector is designed to receive a 22x58mm fuse cartridge or neutral tube.

It is used to protect the insulated service conductors connected to a low voltage A.B.C. (Aerial Bundled Conductors). It is used in no mechanical load situations.

Opening and closing of the cutout can be performed under a load of 63A maximum.

## Description

- Insulation piercing on the main and tap conductors is carried out independently.
- Tightening efficiency is ensured by shear head screws. The dielectric strength in water is greater than 6kV.
- An elastomer compound ensures insulation during piercing of the conductors to be connected.
- The spring tightening on the cartridge is calibrated so that when the cutout is opened, the cartridge remains on the customer side (therefore without voltage).
- Once the cartridge has been installed, the cutout is locked using the closing ring.
- The closing ring and the 13mm permanent head can be sealed.



Dimensions in mm



Code	Designation	Capacities Main insulated Al-Cu (mm²)	Capacities Tap insulated Al-Cu (mm²)	Weight (kg)	Sales unit
K210	FUSE SWITCH CONNECTOR 63A (22x58) PIERCING 150/35	35-150	6-35	0.310	10

 **SEE SHEET**  
INSTALLATION / LV insulated toolings

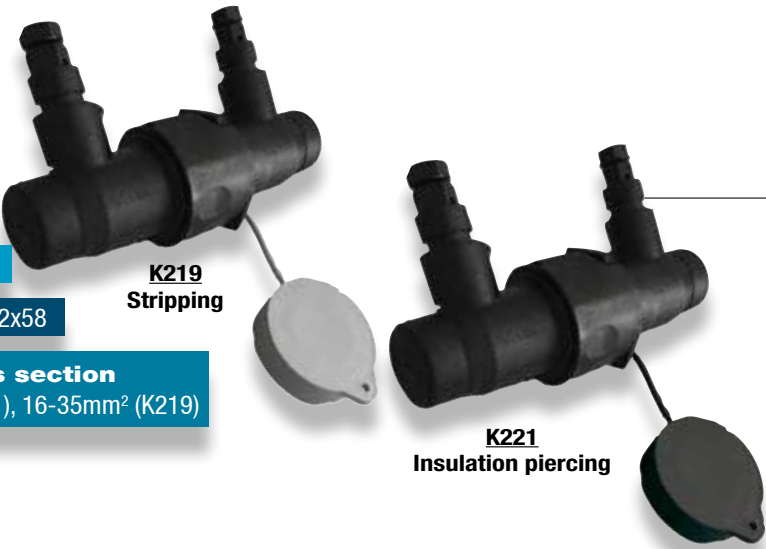


**SEE SHEET**  
PROTECTION / Fuses



Fuse cutout sleeve 100A

Rating 100A  
Fuse size 22x58  
Conductors section  
6-35mm² (K221), 16-35mm² (K219)



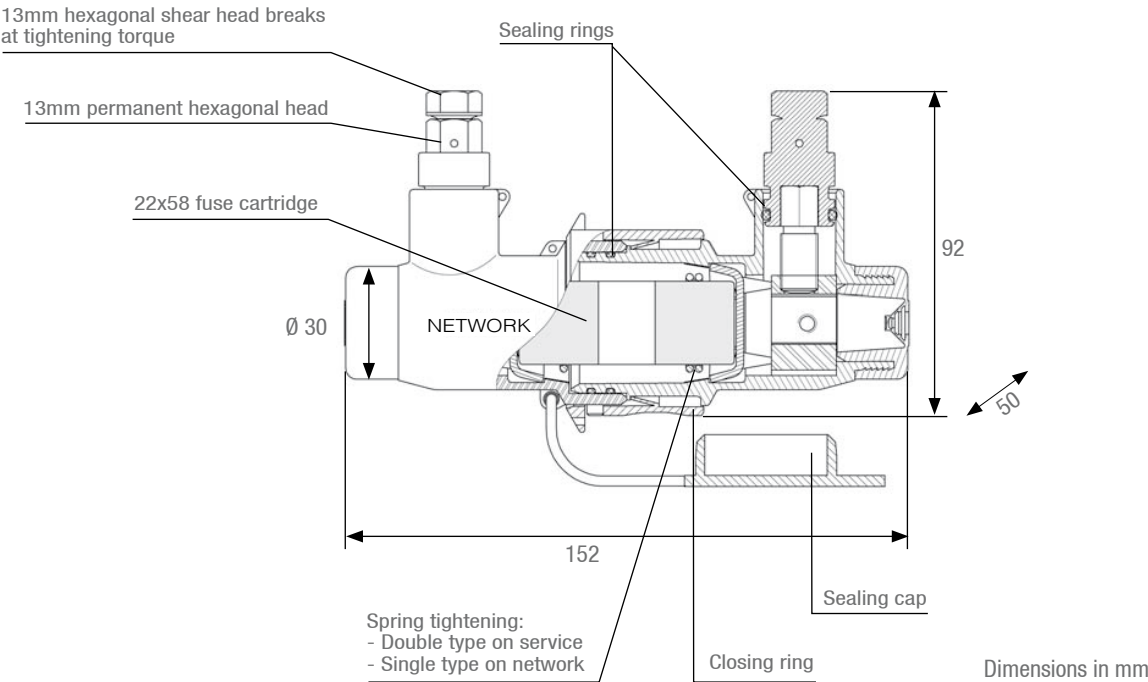
Application

This cutout sleeve is designed to receive a 22x58 fuse cartridge, a neutral tube or a mini-switch. It is used in no mechanical load situations. It is equipped with mechanical tightening terminals allowing its installation using a simple spanner. Opening and closing of the cutout can be performed under a load of 63A maximum.

Description

- Connection is established using insulation piercing technology for the K221 and stripping technology for the K219. The tightening screws are equipped with shear heads.
- The terminals offer the following capacities:
  - 6-35mm² Al/Cu or 16M-50M Al for the K221,
  - 16-35mm² Al/Cu or 16M-50M Al for the K219.
- The product has a dielectric strength in water greater than 6kV.
- The spring tightening on the cartridge is calibrated so that when the cutout is opened, the cartridge remains on the customer side (therefore without voltage).
- A sealing cap temporarily protects the access on the network side (black on K221 ; grey on K219).
- Once the cartridge has been installed, the product is locked using the closing ring.
- The closing ring and the 13mm screw can be sealed.
- The sleeve accepts 63A fuses. The 100A fuse is only accepted with 35mm² copper wiring.

This sleeve meets the criteria of the **ErDF 69 40 070** French specification.

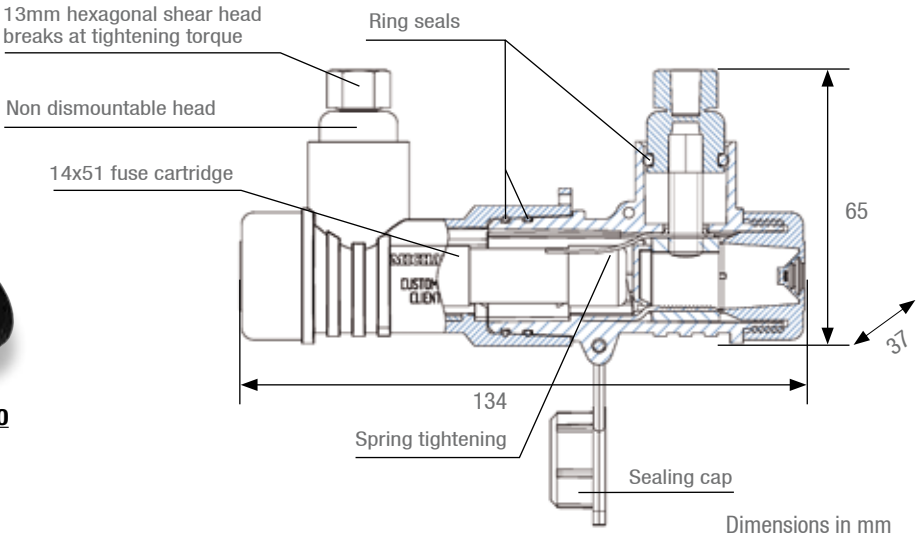


Code	Designation	Weight (kg)	Sales unit
K221	CUTOUT SLEEVE 63A (22x58) PIERCING 6-35	0.235	70
K219	CUTOUT SLEEVE 63A (22x58) STRIPPING 16-35	0.235	70

Alternative: Cutout sleeve with 50A

The cutout sleeve is also available in 14x51. It accepts fuses up to 50A and Al/Cu conductors from 2.5 to 16mm². Connection is established by stripping the conductor. Connection is ensured by a shear head screw that cannot be dismantled.

Rating 50A  
Fuse size 14x51  
Conductors section 2.5-16mm²



Code	Designation	Weight (kg)	Sales unit
K220	CUTOUT SLEEVE 50A (14x51) 2.5-16	0.195	20

SEE SHEET  
INSTALLATION / LV insulated toolings

SEE SHEET  
PROTECTION / Fuses

Fuse insulation piercing pit connector  
100A



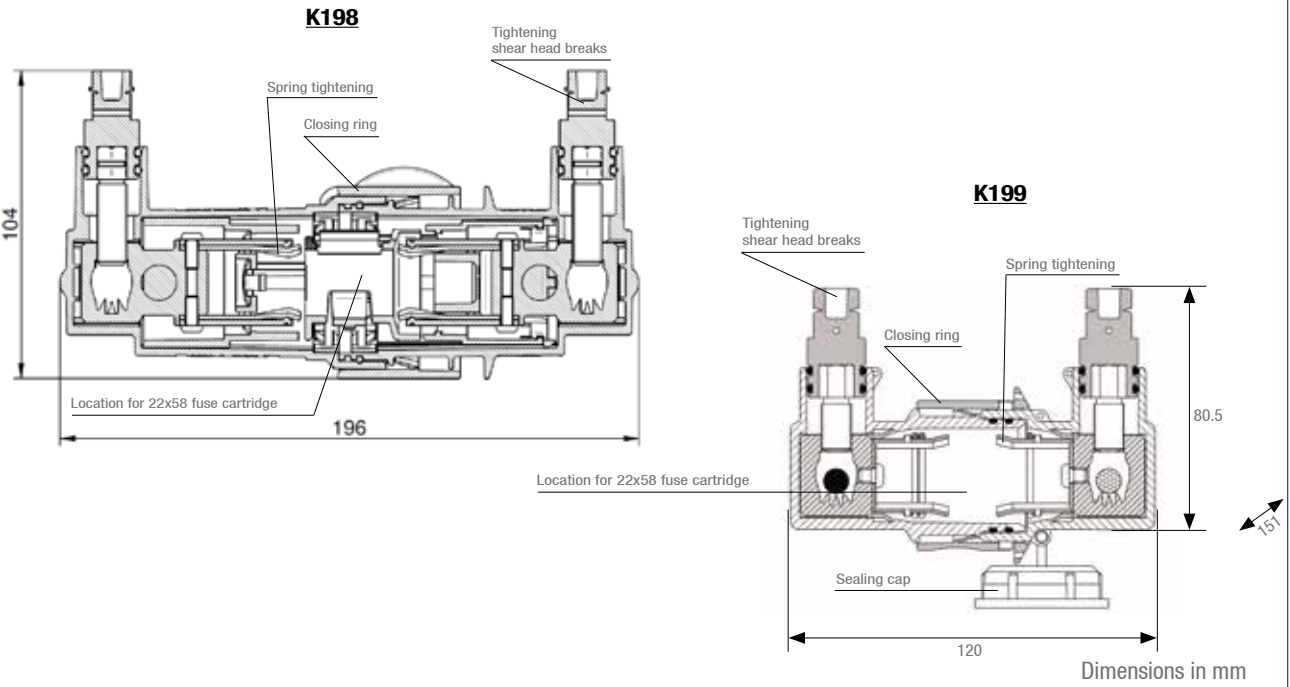
Rating 100A  
Fuse size 22x58  
Conductors section 6-50mm<sup>2</sup>

Application

This Fuse Insulation Piercing Pit Connector (IPPC) is designed to receive a neutral tube, a mini-switch or a 100A maximum, size 22x58 fuse cartridge. It is used to connect a customer service line to an underground conductor. It is installed in a pit and can operate partially and temporary immersed in water. It is equipped with mechanical tightening terminals allowing its installation on a conductor using a simple spanner.

Description

- Terminals use insulation piercing technology.
- Tightening efficiency is ensured by shear head screws.
- The connection is totally watertight.
- The terminals offer a capacity from 6 up to 50mm<sup>2</sup> Al/Cu.
- On the K199, the elastic tightening of the cartridge is calibrated so that when the connector is opened, the cartridge remains on the customer side (therefore without voltage).
- A sealing cap temporarily protects the access on the network side.
- On the K198, the elastic tightening of the cartridge is calibrated so that when the connector is opened, the cartridge is not in contact with both side. This product is specially design for housing power plant and allows a safe operating. It is IP2X when opening. When it closes, this fuse IPPC is IP67.
- Once the cartridge is installed, the connectors are locked using the closing ring.



Code	Designation	Weight (kg)	Sales unit
K198	FUSE INSULATION PIERCING PIT CONNECTOR 100A (22x58) PERFO 6-50 IP2X	0.440	10
K199	FUSE INSULATION PIERCING PIT CONNECTOR 100A (22x58) PERFO 6-50	0.302	10



K198 - Opened



K199 - Installation in a pit

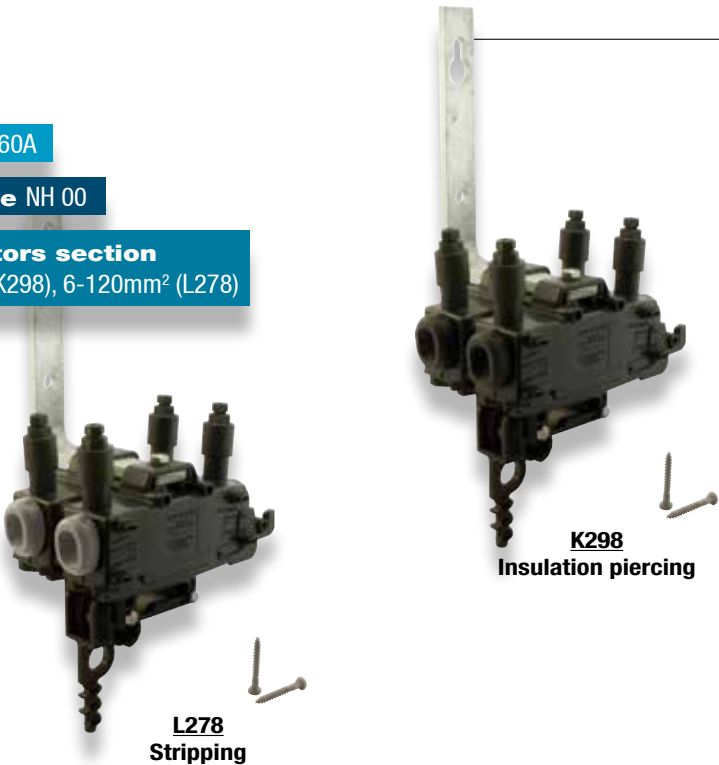
SEE SHEET  
INSTALLATION / LV insulated toolings

SEE SHEET  
PROTECTION / Fuses



Fuse switch disconnector  
double pole 160A

Rating 160A  
Fuse size NH 00  
Conductors section  
6-95mm² (K298), 6-120mm² (L278)



Application

This Gang Fuse Switch Disconnecter (Gang FSD) is a multi-phase device. It is installed at the top of a pole or on façade. It protects the overhead connection supplying one or several multi-phase customers or the low voltage circuit of a pole mounted transformer. It is designed to receive 160A fuse cartridges or 240A solid connecting links, size 00 (according to the IEC 269-2.1 standard).

Description

Fuse Switch Disconnecter

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 160A
- The FSD K298 uses the insulation piercing technology and receives insulated conductors from 6 up to 95mm² Al-Cu (entry seals are of black colour).
- The FSD L278 uses the stripping technology and receives insulated conductors from 6 up to 120mm² Al-Cu (entry seals are of grey colour).
- The fuse holders are opened, removed and closed simultaneously using a hook stick or a stick to be screwed on the adaptor.  
Note: the fuse holder can be installed without fuse.
- The polarity test points are accessible on each terminal without removing the fuse holder.
- The protection degree is IP33.

Bracket

- The bracket is available in 2 holes type. It is made of galvanised steel highly resistant to corrosion.
- Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the Gang FSD).

This fuse switch disconnector meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standards.

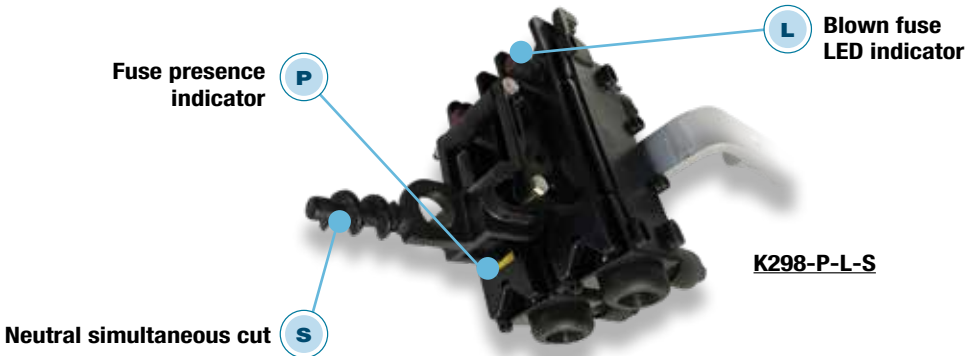
Code	Designation	Weight (kg)	Sales unit
K298	DOUBLE POLE FSD 160A (NH 00) PIERCING 6-95	1.850	1
L278	DOUBLE POLE FSD 160A (NH 00) STRIPPING 6-120	1.850	1

Note: Fixing with two 10mm diameter galvanised steel screws is provided with the disconnecter.

Costumised solution:

Several options available:

- For the fuse presence indicator, add P to the reference.
- For the blown fuse LED indicator, add L to the reference.  
(Use a NH 00 fuse carrying metal fixing bracket linked to the blade)
- For the shear head indicator, add H to the reference.
- For the neutral simultaneous cut, add S to the reference.
- For the colour of the fuse carrier, add C to the reference and specify the colour (black is standard colour).



Option: Double tap

A double tap is available by adding an end connector with two insulation piercing taps. The conductor section goes from 6 up to 35mm² Al/Cu.

Code	Designation	Weight (kg)	Sales unit
K098	DOUBLE TAP END CONNECTOR (6-35mm²)	0.110	12

SEE SHEET  
PROTECTION / Operating stick

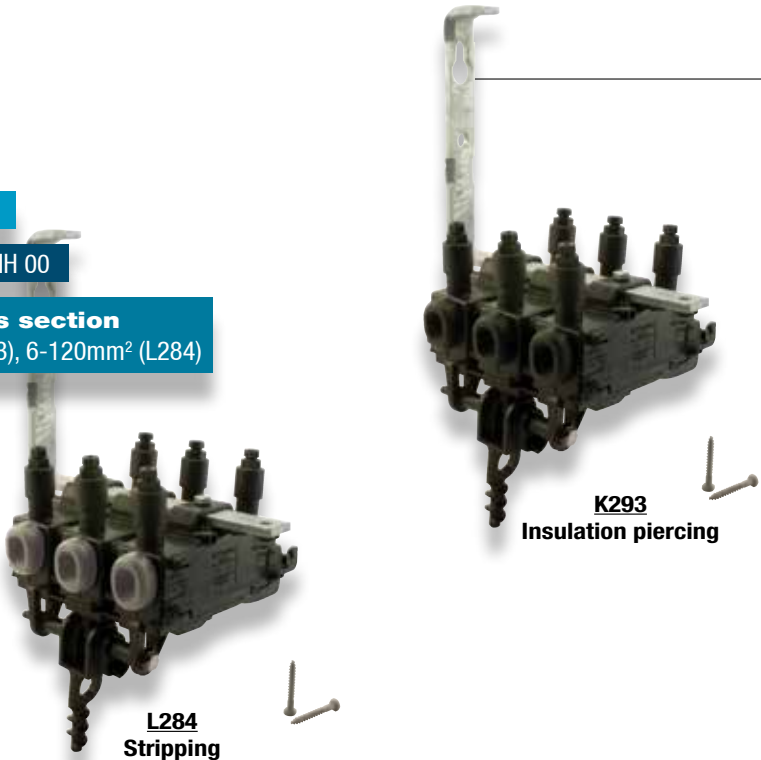
SEE SHEET  
PROTECTION / Fuses



Installation video available on [www.michaud-export.com](http://www.michaud-export.com)

Fuse switch disconnector  
triple pole 160A

Rating 160A  
Fuse size NH 00  
Conductors section  
6-95mm² (K293), 6-120mm² (L284)



Application

This Gang Fuse Switch Disconnecter (FSD) is a multi-phase device. It is installed at the top of a pole or on façade. It protects the overhead connection supplying one or more multi-phase customers or the low voltage circuit of a pole mounted transformer. It is designed to receive 160A fuse cartridge or 240A solid connecting links, size 00 (accordig to the IEC 269-2.1 standard).

Description

Fuse Switch Disconnecter

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 160A
- The FSD K293 uses the insulation piercing technology and receives insulated conductors from 6 up to 95mm² Al-Cu (entry seals are of black colour).
- The FSD L284 uses the stripping technology and receives insulated conductors from 6 up to 120mm² Al-Cu (entry seals are of grey colour).
- The fuse holders are opened, removed and closed simultaneoulsy using a hook stick or a stick to be screwed on the adaptor.  
Note: the fuse holder can be installed without fuse.
- The polarity test points are accessible on each terminal without removing the fuse holder.
- The protection degree is IP33.

Bracket

- The bracket is available in 4 holes type. It is made of galvanised steel highly resistant to corrosion. A hook at its end is used to fix a service cable anchoring clamp.
- Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the Gang FSD). Fixing on poles can also be carried out using two stainless steel straps thanks to spurs on the bracket.

This fuse switch disconnector meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standards.

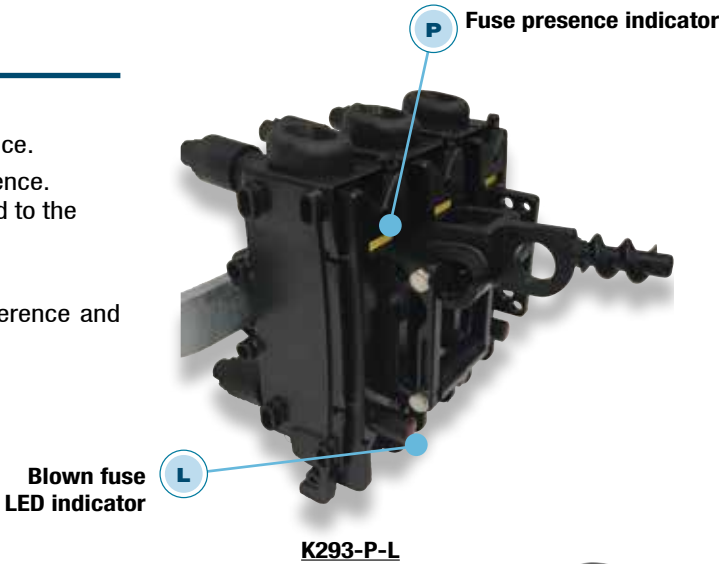
Code	Designation	Weight (kg)	Sales unit
K293	TRIPLE POLE FSD 160A (NH 00) PIERCING 6-95	2.710	1
L284	TRIPLE POLE FSD 160A (NH 00) STRIPPING 6-120	2.710	1

Note: Fixing with two 10mm diameter galvanised steel screws is provided with the disconnecter.

Costumised solution:

Several options available:

- For the fuse presence indicator, add P to the reference.
- For the blown fuse LED indicator, add L to the reference. (Use a NH 00 fuse carrying metal fixing bracket linked to the blade)
- For the shear head indicator, add H to the reference.
- For the colour of the fuse carrier, add C to the reference and specify the colour (black is standard colour).



Option: Double tap

A double tap is available by adding an end connector with two insulation piercing taps. The conductor section goes from 6 to 35mm² Al/Cu.

Code	Designation	Weight (kg)	Sales unit
K098	DOUBLE TAP END CONNECTOR (6-35mm²)	0.110	12



Alternative: Fuse switch disconnector double triple pole 160A (size 00)

Code	Designation	Weight (kg)	Sales unit
K296	DOUBLE TRIPLE POLE FSD 160A (NH 00) PIERCING 6-95	3.800	1

Note: Fixing with two 10mm diameter galvanised steel screws is provided with the disconnecter.

SEE SHEET  
PROTECTION / Operating stick

SEE SHEET  
PROTECTION / Fuses

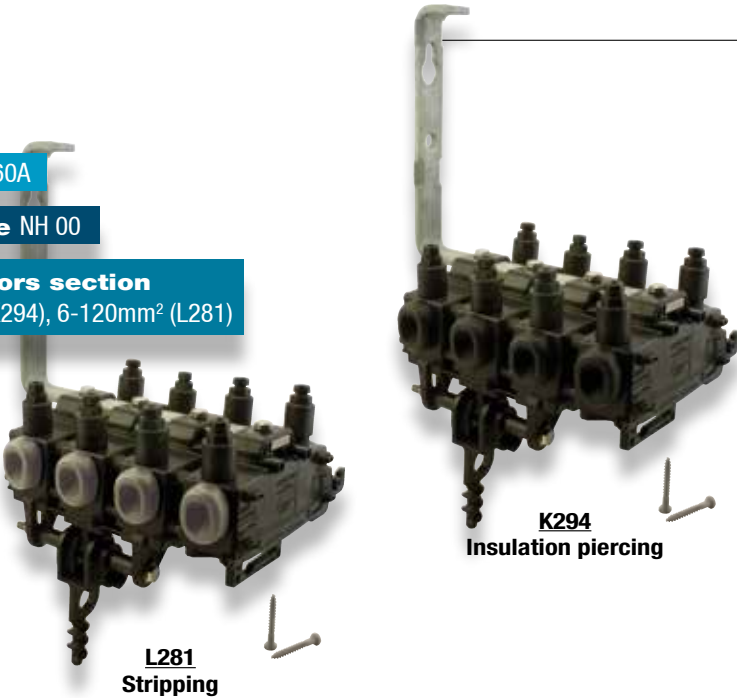


Installation video available on [www.michaud-export.com](http://www.michaud-export.com)



Fuse switch disconnector  
quadruple pole 160A

Rating 160A  
Fuse size NH 00  
Conductors section  
6-95mm² (K294), 6-120mm² (L281)



Application

This Gang Fuse Switch Disconnecter (FSD) is a multi-phase device. It is installed at the top of a pole or on façade. It protects the overhead connection supplying one or more multi-phase customers or the low voltage circuit of a pole mounted transformer. It is designed to receive 160A fuse cartridge or 240A solid connecting links, size 00 (according to the IEC 269-2.1 standard).

Description

Fuse Switch Disconnecter

- The FSD ratings are:
  - Rated voltage, Ue : 500V
  - Rated frequency : 50 up to 60Hz
  - Rated insulation voltage, Ui : 1 000V
  - Rated current, Ie : 160A
- The FSD K294 uses the insulation piercing technology and receives insulated conductors from 6 up to 95mm² Al-Cu (entry seals are of black colour).
- The FSD L281 uses the stripping technology and receives insulated conductors from 6 up to 120mm² Al-Cu (entry seals are of grey colour).
- The fuse holders are opened, removed and closed simultaneously using a hook stick or a stick to be screwed on the adaptor (neutral cut-off is performed independantly).  
Note: the fuse holder can be installed without fuse.
- The polarity test points are accessible on each terminal without removing the fuse holder.
- The quadruple pole FSD is equipped with a neutral blade contact size 00 integral with the fuse holder, on the neutral side (independent opening reaches to neutral cut).
- The protection degree is IP33.

Bracket

- The bracket is available in 4 holes type. It is made of galvanised steel highly resistant to corrosion. A hook at its end is used to fix a service cable anchoring clamp.
- Fixing on a pole or façade is achieved by two 10mm diameter galvanised steel screws and two holes on the bracket (top hole having a key shape to make it easier to position the Gang FSD). Fixing on poles can also be carried out using two stainless steel straps thanks to spurs on the bracket.

This fuse switch disconnector meets the criteria of the IEC 60 947-3 and IEC 60 269-2 standards.

Code	Designation	Weight (kg)	Sales unit
K294	QUADRUPLE POLE FSD 160A (NH 00) PIERCING 6-95	3.240	1
L281	QUADRUPLE POLE FSD 160A (NH 00) STRIPPING 6-120	3.240	1

Note: Fixing with two 10mm diameter galvanised steel screws is provided with the disconnecter.

Costumised solution:

Several options available:

- For the fuse presence indicator, add P to the reference.
- For the blown fuse LED indicator, add L to the reference.  
(Use a NH 00 fuse carrying metal fixing bracket linked to the blade)
- For the shear head indicator, add H to the reference.
- For the neutral simultaneous cut, add S to the reference.
- For the colour of the fuse carrier, add C to the reference and specify the colour (black is standard colour).



Option: Double tap

A double tap is available by adding an end connector with two insulation piercing taps. The conductor section goes from 6 to 35mm² Al/Cu.

Code	Designation	Weight (kg)	Sales unit
K098	DOUBLE TAP END CONNECTOR (6-35mm²)	0.110	12

SEE SHEET  
PROTECTION / Operating stick

SEE SHEET  
PROTECTION / Fuses



Installation video available on [www.michaud-export.com](http://www.michaud-export.com)

Operating stick



Application

This telescopic operating stick is used to check that there is no voltage, to earth or to operate a fuse switch disconnecter, remotely from the ground level. Each model is equipped with a notched universal U-shaped terminal end.

F208

Description

- The stick and the extension comprise 1, 2 or 3 elements.
  - Each element is made of glass fibre composite and has a high mechanical strength.
  - The upper tube is filled with yellow foam to ensure the dielectric strength in the upper part.
  - The hollowed lower tube receives the upper tube, in retracted position. It is entirely treated against humidity through siliconisation (the retracted or deployed position is locked using a push button).
  - The work must be operated, with limited load at the top, with no mechanical stresses (twisting).
  - The assembly can be used for low voltage applications at any time when the stick is deployed.
  - The stick is equipped with the following elements:
    - A U-shaped notched universal end for fixing a suitable terminal end (wing nut equipped),
    - A second end with a mount equipped with a protected connection for the optional extension,
    - A hand grip for secure holding.
  - The stick diameter is 42mm.
  - The stick and the extension can be delivered in a protective cover in order to facilitate handling and storage.
- This operation stick meets the criteria of the **IEC 60855-1**, **IEC 1235** and **EN 61235** standards.

Code	Designation	Elements number	Extension bar application	Length when closed (m)	Length when opened (m)	Weight (kg)	Sales unit
F200	OPERATING STICK 2E - 1.5M (TERMINAL END U)	2	No	0.85	1.50	1.050	1
F201	OPERATING STICK 2E - 2M (TERMINAL END U)	2	Yes	1.10	2.00	1.200	1
F202	OPERATING STICK 2E - 3.2M (TERMINAL END U)	2	Yes	1.75	3.20	1.500	1
F203	OPERATING STICK 2E - 5M (TERMINAL END U)	2	Yes	2.65	5.00	3.000	1
F204	OPERATING STICK 3E - 4.5M (TERMINAL END U)	3	No	1.65	4.50	3.000	1
F205	OPERATING STICK 3E - 5M (TERMINAL END U)	3	No	1.85	5.00	4.000	1
F206	OPERATING STICK 3E - 6M (TERMINAL END U)	3	No	2.50	6.00	5.000	1
F207	OPERATING STICK 1E - 1M	1	No	1.00	1.00	0.800	1
F208	PROTECTIVE COVER FOR OPERATING STICK	1	No	2.00	2.00	0.600	1

Terminal end



Application

To operate a Fuse Switch Disconnecter (FSD) remotely from the ground level, the notched universal U-shaped threaded terminal end is fixed to the operating stick. The F210 end can be used to operate a Fuse Switch Disconnecter manually, without loss of handling thanks to its handle shape.

Code	Designation	Weight (kg)	Sales unit
F209	BORED TERMINAL END DISCONNECTOR / STICK	0.105	10
F210	THREAD TERMINAL END DISCONNECTOR / STICK	0.035	10
F213	TERMINAL END TYPE L DISCONNECTOR / STICK	0.180	10



Installation video available on [www.michaud-export.com](http://www.michaud-export.com)

Installation





Fuse cartridge gG

Application

These gG fuses cartridges are designed to protect goods. They are implemented in a cutout sheltered from outside weather conditions.

Type 10.3x38

Description

- This fuse cartridge is available in size 10.3x38mm.
- It is type gG HPC (High Breaking Capacity).
- It is not equipped with light indicator.

This fuse meets the criteria of the **NF/EN/IEC 60269-1**, **NF HD/IEC 60269-2**, **NF C 60200-1** and **NF C 60200-2** standards.

Type 14x51

Description

- This fuse cartridge is available in size 14x51mm.
- It is type gG HPC (High Breaking Capacity).
- It is not equipped with light indicator.

This fuse meets the criteria of the **NF/EN/IEC 60269-1**, **NF HD/IEC 60269-2**, **NF C 60200-1** and **NF C 60200-2** standards.

Type 22x58

Description

- This fuse cartridge is available in size 22x58mm.
- It is type gG HPC (High Breaking Capacity).
- It is not equipped with light indicator.

This fuse meets the criteria of the **NF/EN/IEC 60269-1**, **NF HD/IEC 60269-2**, **NF C 60200-1** and **NF C 60200-2** standards.

Code		Designation	Voltage (V)	Breaking capacity (kA)	Weight (kg)	Sales unit
FUSE CARTRIDGE 10.3x38 gG						
U661-1	FUSE CARTRIDGE 10.3x38 1A		500	80	0.007	10
U661-2	FUSE CARTRIDGE 10.3x38 2A		500	80	0.007	10
U661-4	FUSE CARTRIDGE 10.3x38 4A		500	80	0.007	10
U661-6	FUSE CARTRIDGE 10.3x38 6A		500	80	0.007	10
U661-8	FUSE CARTRIDGE 10.3x38 8A		500	80	0.007	10
U661-10	FUSE CARTRIDGE 10.3x38 10A		500	80	0.007	10
U661-12	FUSE CARTRIDGE 10.3x38 12A		500	80	0.007	10
U661-16	FUSE CARTRIDGE 10.3x38 16A		500	80	0.007	10
U661-20	FUSE CARTRIDGE 10.3x38 20A		500	80	0.007	10
U661-25	FUSE CARTRIDGE 10.3x38 25A		500	80	0.007	10
U661-32	FUSE CARTRIDGE 10.3x38 32A		500	80	0.007	10
U620	NEUTRAL TUBE 10.3x38				0.007	10
FUSE CARTRIDGE 14x51 gG						
U660-1	FUSE CARTRIDGE 14x51 gG 1A		690	80	0.021	10
U660-2	FUSE CARTRIDGE 14x51 gG 2A		690	80	0.021	10
U660-4	FUSE CARTRIDGE 14x51 gG 4A		690	80	0.021	10
U660-6	FUSE CARTRIDGE 14x51 gG 6A		690	80	0.021	10
U660-8	FUSE CARTRIDGE 14x51 gG 8A		690	80	0.021	10
U660-10	FUSE CARTRIDGE 14x51 gG 10A		690	80	0.021	10
U660-12	FUSE CARTRIDGE 14x51 gG 12A		690	80	0.021	10
U660-16	FUSE CARTRIDGE 14x51 gG 16A		690	80	0.021	10
U660-20	FUSE CARTRIDGE 14x51 gG 20A		690	80	0.021	10
U660-25	FUSE CARTRIDGE 14x51 gG 25A		690	80	0.021	10
U660-32	FUSE CARTRIDGE 14x51 gG 32A		500	80	0.021	10
U660-40	FUSE CARTRIDGE 14x51 gG 40A		500	80	0.021	10
U660-50	FUSE CARTRIDGE 14x51 gG 50A		400	80	0.021	10
U621	NEUTRAL TUBE 14x51				0.021	10
FUSE CARTRIDGE 22x58 gG						
U640	FUSE CARTRIDGE 22x58 gG 2A		690	80	0.056	10
U641	FUSE CARTRIDGE 22x58 gG 4A		690	80	0.056	10
U642	FUSE CARTRIDGE 22x58 gG 6A		690	80	0.056	10
U643	FUSE CARTRIDGE 22x58 gG 8A		690	80	0.056	10
U644	FUSE CARTRIDGE 22x58 gG 10A		690	80	0.056	10
U645	FUSE CARTRIDGE 22x58 gG 12A		690	80	0.056	10
U646	FUSE CARTRIDGE 22x58 gG 16A		690	80	0.056	10
U647	FUSE CARTRIDGE 22x58 gG 20A		690	80	0.056	10
U648	FUSE CARTRIDGE 22x58 gG 25A		690	80	0.056	10
U649	FUSE CARTRIDGE 22x58 gG 32A		690	80	0.056	10
U650	FUSE CARTRIDGE 22x58 gG 40A		690	80	0.056	10
U651	FUSE CARTRIDGE 22x58 gG 50A		690	80	0.056	10
U652	FUSE CARTRIDGE 22x58 gG 63A		690	80	0.056	10
U653	FUSE CARTRIDGE 22x58 gG 80A		500	120	0.056	10
U654	FUSE CARTRIDGE 22x58 gG 100A		500	120	0.056	10
U655	FUSE CARTRIDGE 22x58 gG 125A		400	120	0.056	10
U622	NEUTRAL TUBE 22x58				0.056	10

For other fuses, contact us.

Fuse cartridge AD



Application

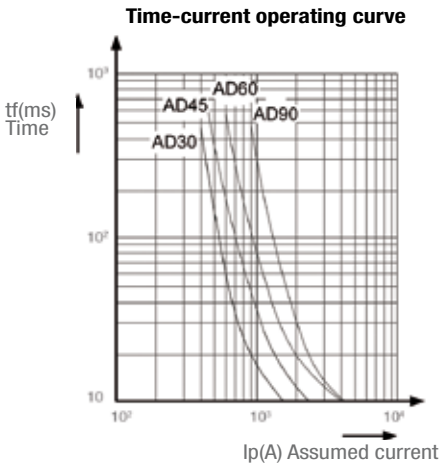
These AD fuse cartridges are used together with the circuit-breaker installed on the individual service tap connection. They perform the cutoff for high short-circuit currents and thereby extend the service life of the associated circuit-breaker, which is not overloaded up to the limit.

Cylindrical cartridge

Description

- This fuse cartridge is available in several sizes: 10.3x38, 14x51 and 22x58mm.
- Many models are available according to the circuit breaker nominal current to which it must be connected: AD 15A, AD 30A, AD 45A, AD 60A and AD 90A.
- Low power loss limits heating of the device holding the fuse and extends its service life.
- It is specified for a nominal voltage of 440V in alternating current with nominal frequency of 50Hz.
- The nominal breaking capacity is 20kA.

This fuse meets the criteria of the **HN62-S-83**, **NF/EN/IEC 60269-1**, **NF HD/IEC 60269-2**, **NF C 60200-1** and **NF C 60200-2** standards.



Code	Designation	Weight (kg)	Sales unit
FUSE CARTRIDGE 10.3x38mm			
U623	FUSE CARTRIDGE 10.3x38 AD 15A	0.009	10
U620	NEUTRAL TUBE 10.3x38	0.012	10
FUSE CARTRIDGE 14x51mm			
U615	FUSE CARTRIDGE 14x51 AD 15A	0.021	10
U616	FUSE CARTRIDGE 14x51 AD 30A	0.021	10
U617	FUSE CARTRIDGE 14x51 AD 45A	0.021	10
U621	NEUTRAL TUBE 14x51	0.016	10
FUSE CARTRIDGE 22x58mm			
U610	FUSE CARTRIDGE 22x58 AD 15A	0.056	10
U611	FUSE CARTRIDGE 22x58 AD 30A	0.056	10
U612	FUSE CARTRIDGE 22x58 AD 45A	0.056	10
U613	FUSE CARTRIDGE 22x58 AD 60A	0.056	10
U614	FUSE CARTRIDGE 22x58 AD 90A	0.056	10
U622	NEUTRAL TUBE 22x58	0.028	10

Note: Other 10.3x38, 14x51, 22x58 fuses can be supplied upon request: please contact us.

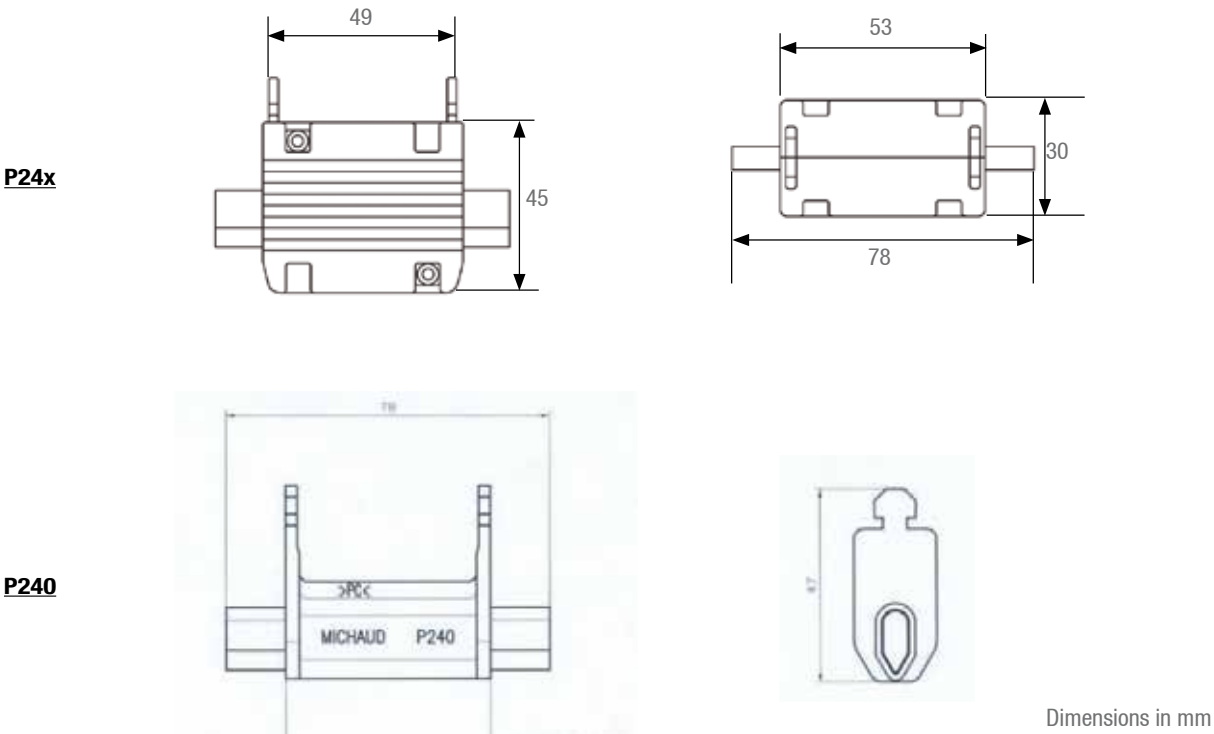
Fuse cartridge size 00



Description

- The size of this blade fuse cartridge is 00 according to the **IEC 60269-2-1** standard.
- There are 4 models available according to the nominal current of the circuit-breaker to which it must be connected: AD 30A, AD 45A, AD 60A and AD 90A.
- The fixing brackets are made of insulating synthetic materials.
- The accessible metal parts (screws), with the exception of the blades, are potential free and also have the degree of protection IP2X according to the **NF EN 60529** standard.
- Low power loss limits heating of the device holding the fuse and extends its service life.
- It is specified for a nominal voltage of 440V in alternating current with nominal frequency of 50Hz.
- The nominal breaking capacity is 20kA.

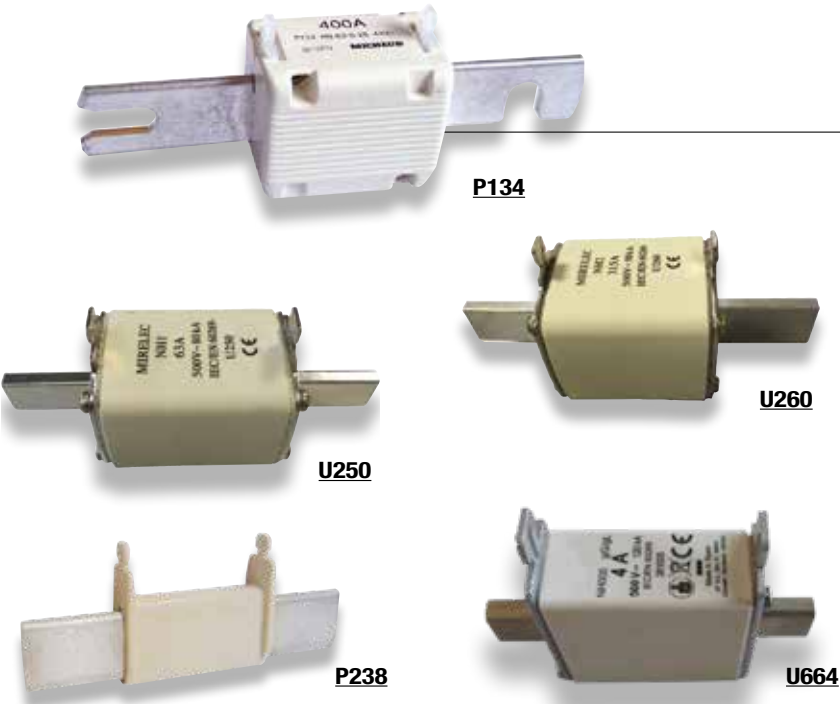
This fuse meets the criteria of the **HN62-S-83** standard.



Code	Designation	Resistance to 20°C (μΩ)	Consumption (W)	Blade temperature rise (°K)	Weight (kg)	Sales unit
P241	FUSE CARTRIDGE SIZE 00 AD 30A	1150	1.4	9	0.150	10
P242	FUSE CARTRIDGE SIZE 00 AD 45A	740	2.1	16	0.150	10
P243	FUSE CARTRIDGE SIZE 00 AD 60A	650	3.3	20	0.150	10
P244	FUSE CARTRIDGE SIZE 00 AD 90A	430	5.1	34	0.150	10
P240	NEUTRAL BLADE CONTACT SIZE 00				0.060	10



Fuse cartridge NH



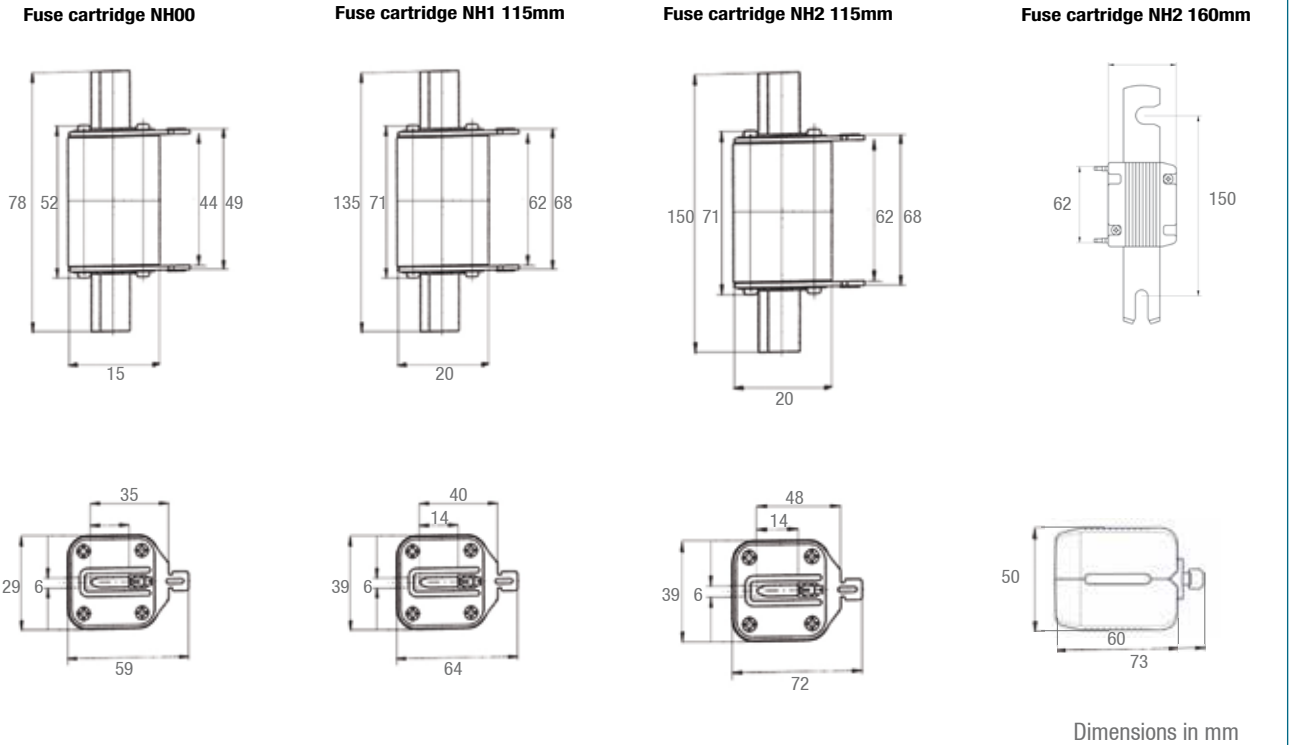
Application

These low voltage fuses cartridges NH00, NH1 or NH2 are type gG. They are used as protection unit of the low voltage public electricity supply networks and works. It is installed in:

- Low voltage switchboards of the public electricity supply substations,
- Cutout boxes, inside or outside supply switches,
- Switch cabinets for subsurface networks,
- Metering boxes and cabinets for different uses.

Description

- The size of this blade fuse cartridge is NH00, NH1 or NH2 according to the **IEC 269-2-1** standard.
- It is type gG HPC (High Breaking Capacity).
- It is available in several ratings:
  - 2A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 35A, 40A, 50A, 63A, 80A, 100A, 125A ou 160A en NH00,
  - 63A, 80A, 100A, 125A, 160A, 200A and 250A for NH1 115mm,
  - 125A, 200A, 250A, 315A and 400A for NH2 115mm,
  - 125A, 200A, 250A and 400A for NH2 160mm.
- It is specified for a nominal voltage of 440V in alternating current with nominal frequency of 50Hz.
- The nominal breaking capacity is 50kA minimum.



Code		Designation	Weight (kg)	Sales unit
FUSE CARTRIDGE NH00				
U664-2	FUSE CARTRIDGE NH00 gG 500V 2A		0.180	3
U664-4	FUSE CARTRIDGE NH00 gG 500V 4A		0.180	3
U664-6	FUSE CARTRIDGE NH00 gG 500V 6A		0.180	3
U664-10	FUSE CARTRIDGE NH00 gG 500V 10A		0.180	3
U664-16	FUSE CARTRIDGE NH00 gG 500V 16A		0.180	3
U664-20	FUSE CARTRIDGE NH00 gG 500V 20A		0.180	3
U664-25	FUSE CARTRIDGE NH00 gG 500V 25A		0.180	3
U664-32	FUSE CARTRIDGE NH00 gG 500V 32A		0.180	3
U664-35	FUSE CARTRIDGE NH00 gG 500V 35A		0.180	3
U664-40	FUSE CARTRIDGE NH00 gG 500V 40A		0.180	3
U664-50	FUSE CARTRIDGE NH00 gG 500V 50A		0.180	3
U664-63	FUSE CARTRIDGE NH00 gG 500V 63A		0.180	3
U664-80	FUSE CARTRIDGE NH00 gG 500V 80A		0.180	3
U664-100	FUSE CARTRIDGE NH00 gG 500V 100A		0.180	3
U664-125	FUSE CARTRIDGE NH00 gG 500V 125A		0.180	3
U664-160	FUSE CARTRIDGE NH00 gG 500V 160A		0.180	3
U665	NEUTRAL BLADE CONTACT NH00		0.100	1
FUSE CARTRIDGE NH1 AND NH2 115mm				
U250	FUSE CARTRIDGE NH1 63A 115mm		0.400	5
U251	FUSE CARTRIDGE NH1 80A 115mm		0.400	5
U252	FUSE CARTRIDGE NH1 100A 115mm		0.400	5
U253	FUSE CARTRIDGE NH1 125A 115mm		0.400	5
U254	FUSE CARTRIDGE NH1 160A 115mm		0.400	5
U255	FUSE CARTRIDGE NH1 200A 115mm		0.400	5
U256	FUSE CARTRIDGE NH1 250A 115mm		0.400	5
U257	FUSE CARTRIDGE NH2 125A 115mm		0.400	3
U258	FUSE CARTRIDGE NH2 200A 115mm		0.400	3
U259	FUSE CARTRIDGE NH2 250A 115mm		0.400	3
U260	FUSE CARTRIDGE NH2 315A 115mm		0.400	3
U261	FUSE CARTRIDGE NH2 400A 115mm		0.400	3
P238	NEUTRAL BLADE CONTACT NH2 115mm		0.210	1
FUSE CARTRIDGE NH2 160mm				
P130	FUSE CARTRIDGE NH2 125A 160mm		0.780	3
P131	FUSE CARTRIDGE NH2 200A 160mm		0.780	3
P132	FUSE CARTRIDGE NH2 250A 160mm		0.780	3
P134	FUSE CARTRIDGE NH2 400A 160mm		0.780	3
P239	NEUTRAL BLADE CONTACT NH2 160mm		0.290	1

Accessory



The operating handle is used to install and extract fuses from size 00 to size 2 in devices when these are not equipped with an integrated gripping system.

Code	Designation	Weight (kg)	Sales unit
P237	HANDLE FOR FUSES SIZE 00 - SIZE 2	0.260	1



## INSTALLATION

These products must be implemented and used in **compliance with the applicable regulations** with a skilled, qualified professional undertaking to do so following the generally accepted rules of the trade.

For **live-line** implementation or handling, the electrician must comply with the requirements for live-line work conditions and must be equipped with the necessary personal protection equipment. The implementation temperature limits are: -10°C to +40°C.

Live-line work is carried out under the responsibility of the ordering customer in compliance with the applicable rules.

Before powering up the equipment, all the required verifications must be carried out.



## TOOLS

The product should be installed and used with **suitable tools**.

The screw heads should be tightened with the appropriate tool: **Spanner** for hexagonal cap screws, **flat screwdriver** for slotted screw heads of the right size, **Phillips screwdriver** for cruciform screw heads, **HSHC screw head (awls)** for hollow hexagonal screw heads, etc. The screw heads with no torque-limiting device must be tightened to the recommended torque and must not be tightened again.



## RECOMMENDATIONS

The installation instructions must be read carefully before using the product.

The product must be used and implemented in compliance with these recommendations for use and installation instructions. It must be used for the applications for which it was defined by the operator/manager of the network and on an electrical installation that is compliant and compatible with the product.

Never exceed the capacities indicated on the device and in the instructions sheet.

Unless explicitly indicated, products are designed for no-load connection.



## ENVIRONMENT

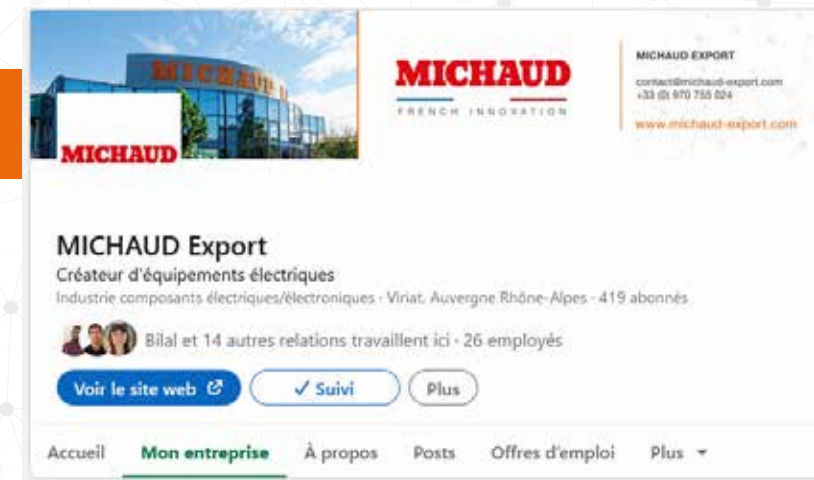
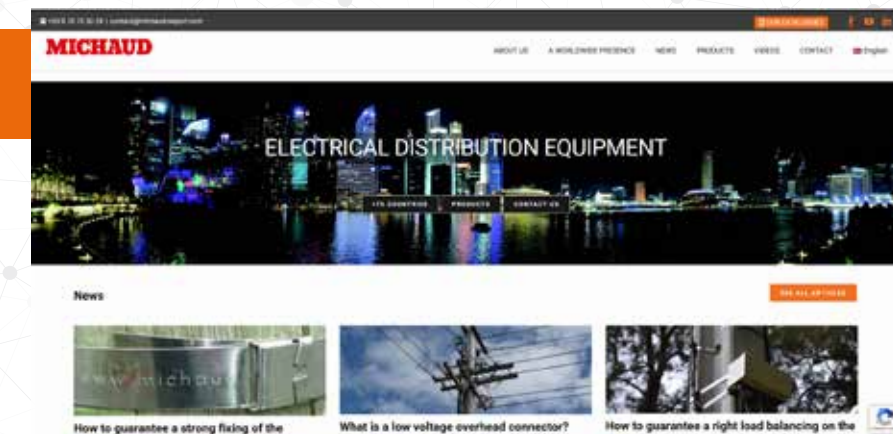
Please group your waste together and follow the recycling and destruction instructions before leaving the worksite.

# FOLLOW US

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[www.michaud-export.com](http://www.michaud-export.com)



## LINKEDIN

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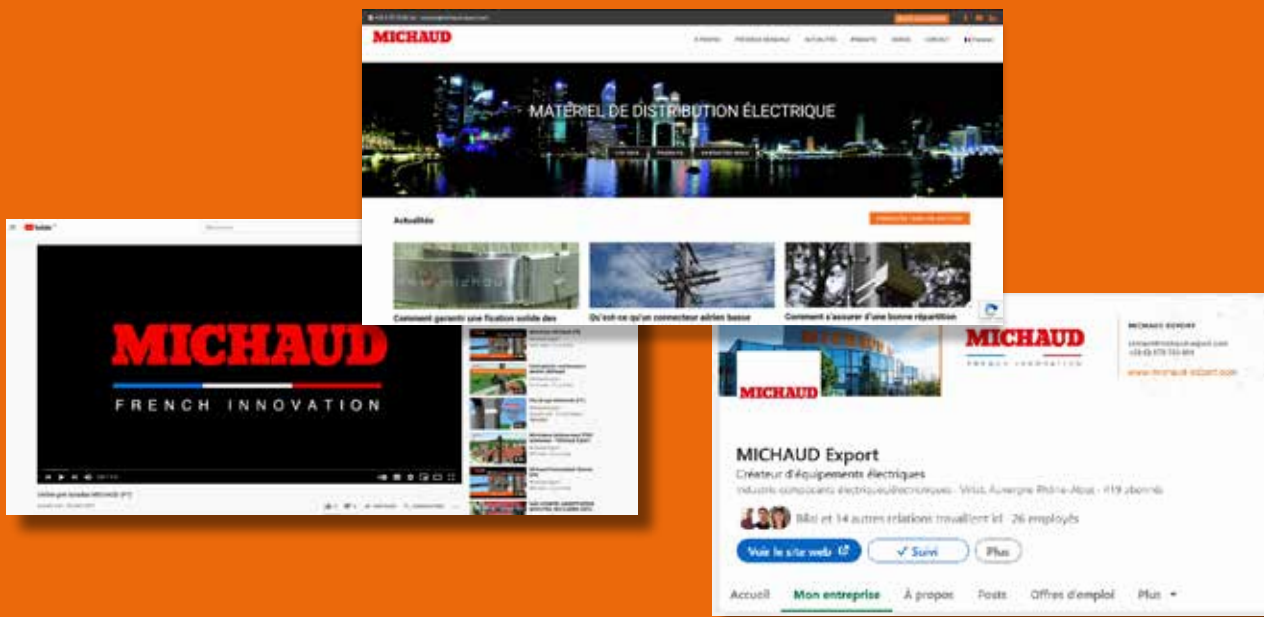


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