

Electrical Distribution

Underground

Extract of Catalogue
Low Voltage Energy

MICHAUD
Export 



**The French Group Michaud,
has been designing, qualifying, producing
and selling electrical equipment and
connection systems for over 60 years.**

250
staff members



7

establishments
Europe,
North Africa,
Asia



Certified since



8 to 10%
of turnover
invested in R&D

1

Accredited
Test Laboratory



3
Engineering departments

* Accréditation n° 1-0579 portée disponible sur www.cofrac.fr

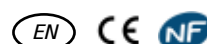
From R&D
to after-sales service,
Michaud Export,
as a Michaud
subsidiary, has full
mastery
of its value chain,
ensuring high-level
quality and service
worldwide.



MIRELEC

Mirelec is a Michaud brand,
dedicated to low voltage electrical
distribution equipment.

The brand offers **european
quality** products and solutions
at a **price matching emerging
markets expectations.**



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.



Michaud Export
in a few words:

Reliability
Support
Adaptability
Quality
Innovation
Expertise
Reactivity
Experience
Listening



**Creator of
innovative
solutions**

As a **technical expert in low-voltage networks**,
Michaud focuses R&D on innovative solutions.

Thanks to an **engineering Department dedicated
to international business**, Michaud Export provides
support to Power Utilities in their grid expansion
projects.

From protection to connections, many **innovative
solutions** are already used in major Power Utilities
around the world.



**Supplier of
electrical
equipment**

From MV/LV transformer substation to the end
customer, Michaud Export offers all **electrical
equipment for the construction & maintenance**
of overhead and underground lines.

In addition to low-voltage networks, Michaud
Export also offers **solutions for residential
electrical distribution and smart metering.**



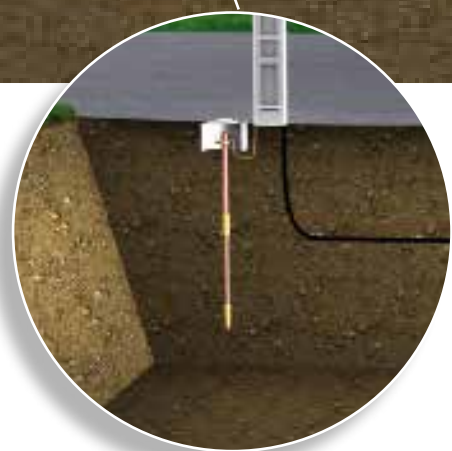
Protection



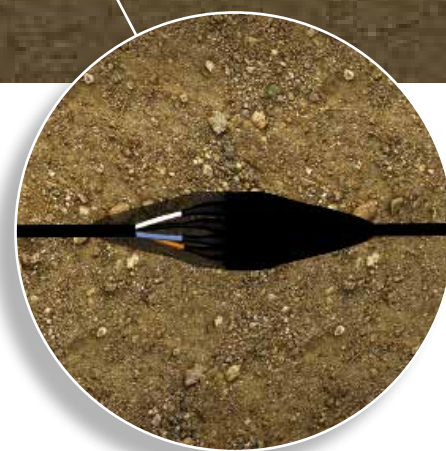
Housing



Overhead



Earth system



Underground



Installation



Underground

Underground

Underground service

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Underground network

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Emerging connection

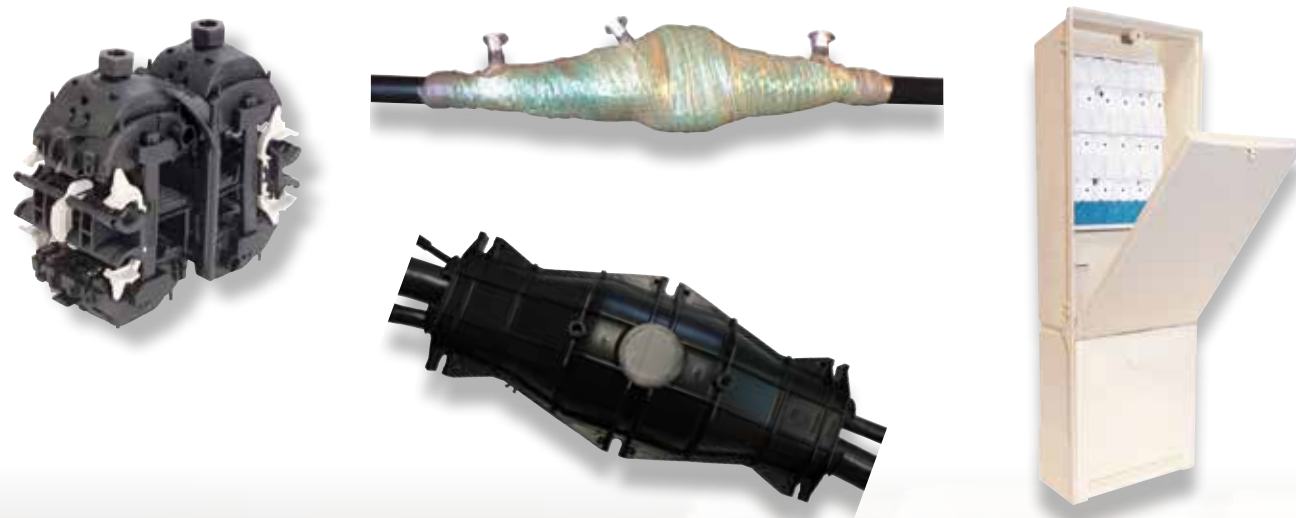
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With a solid experience acquired in insulated cables connections, MICHAUD expanded its skills to **the underground field.**



Underground networks

Many assets

The use of underground technology is growing. Buried networks offer many benefits compared to overhead ones.



Safety

- + To reduce incidents risk
- + To reduce electrical contacts risk

Optimization

- + Preservation of ground for building
- + Limit fraudulent manipulation

Quality

- + To increase lines durability
- + To guarantee a service without disruptions in case of violent winds, storms...

Aestheticism

- + No pollution landscape

A recognized experience in the sector



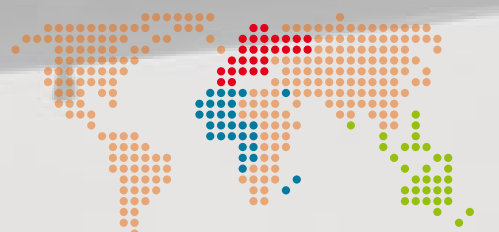
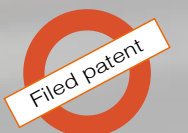
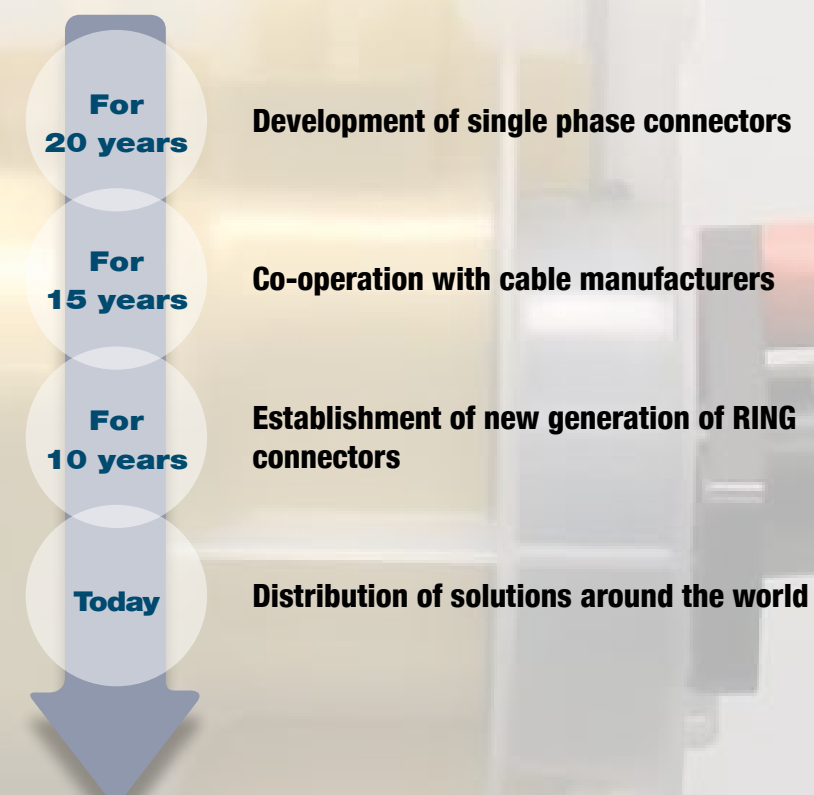
The company developed the underground field, based on its **skills acquired** in insulation piercing technology demonstrating **high innovation ability**.



The underground field requires a high level of reliability. Mistakes during installation can be expensive and MICHAUD reduces risks with **high technical equipment** and establishes itself as a leader of buried connections.



This field matches with **new applications** such as the three-phase supply, electrical cars load, air conditioners designing solutions suitable for higher power conductors.





Three levels of installations

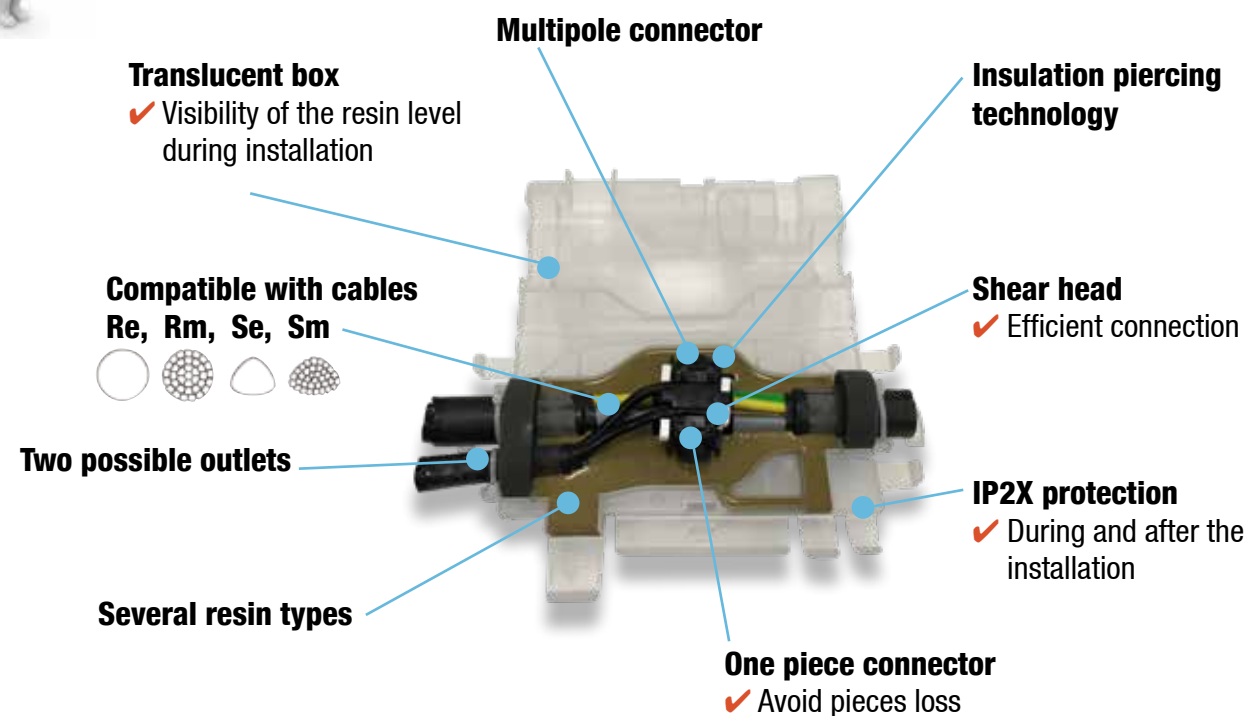


1 - Buried solutions

To enable the achievement of connections and tap-connections in underground environment, MICHAUD designed watertight systems avoiding water penetration being able to run over 30 years without maintenance.



Zoom on RING connector and the underground service box



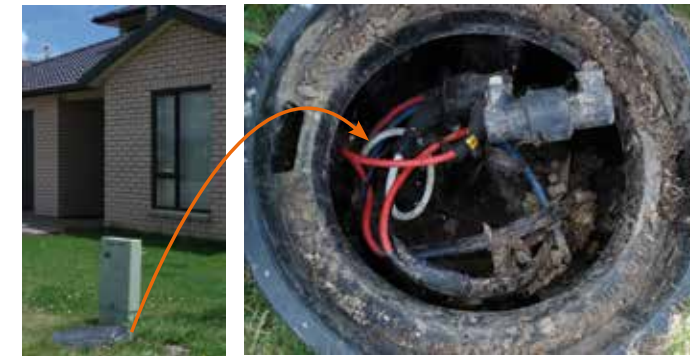
2 - Half-buried solutions

These solutions give the advantage to follow the requirements due to an operation in underground environment while being accessible from the soil surface.



Zoom on the pit cutout sleeve

This sleeve enables the protection of the underground network connection.



- ✓ Installation in a pit
- ✓ Full waterproof connection
- ✓ Temporary working into water



3 - Emerging connection solutions

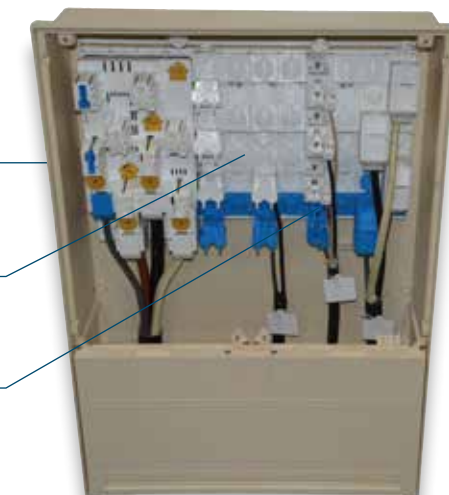
The modular range of emerging cabinets makes possible an adaptation to different searched configurations.

1 - Cabinet

2 - Set of bars

3 - Modules

- ✓ Service / Network
- ✓ Single phase / Three phases
- ✓ One outlet / Several outlets
- ✓ Fuse protection



Set of bars and modules are suitable to every type of cabinets in order to insert inside the environment, keeping the existing.



In order to better suit the market expectations,
Michaud Export encourages co-development.



Many solutions adapted to conductors

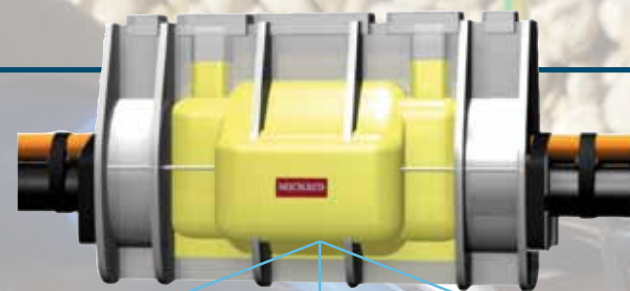
Michaud guides you in your installations



- + Showroom
- + Video to explain the installation
- + Training by our team

Application field

Service



	150mm ²	240mm ²	300mm ²
Main section	95-150mm ²	50-240mm ²	150-300mm ²
Tap section	1x10-35mm ²	2x10-35mm ²	2x10-35mm ²
Volume	2.1 liters	6 liters	6 liters
Work space	170 max	330 max	
Connector diameter	119mm	140mm	150mm

Network

Realization of connection
or tap-connection

Conductors capacity
✓ Up to 240mm²

Unipolar technology

- ✓ Three phases
- ✓ One neutral

Round or sectoral
conductor

Technology

- ✓ Cast
- ✓ Injected

Two technologies

Cast technology

The +
Easy installation

The -
No possible flexibility in the installation
configuration

Injected technology

The +
Easy adaptation to specific environments

The -
Installation requiring fitters training



The polyurethane resin

- ✓ Used injected or cast
- ✓ Polymerized at ambient temperature
- ✓ Perfectly suitable to MICHAUD underground boxes
- ✓ High mechanical strength
- ✓ Perfect adhesion on synthetic material as well as on modern accessories

+ Soft dismountable non hazardous resin is also available



Multipole ring connector 150mm²

Exclusivity
PATENTED SYSTEM
Michaud Export



K449

MICHAUD

Application

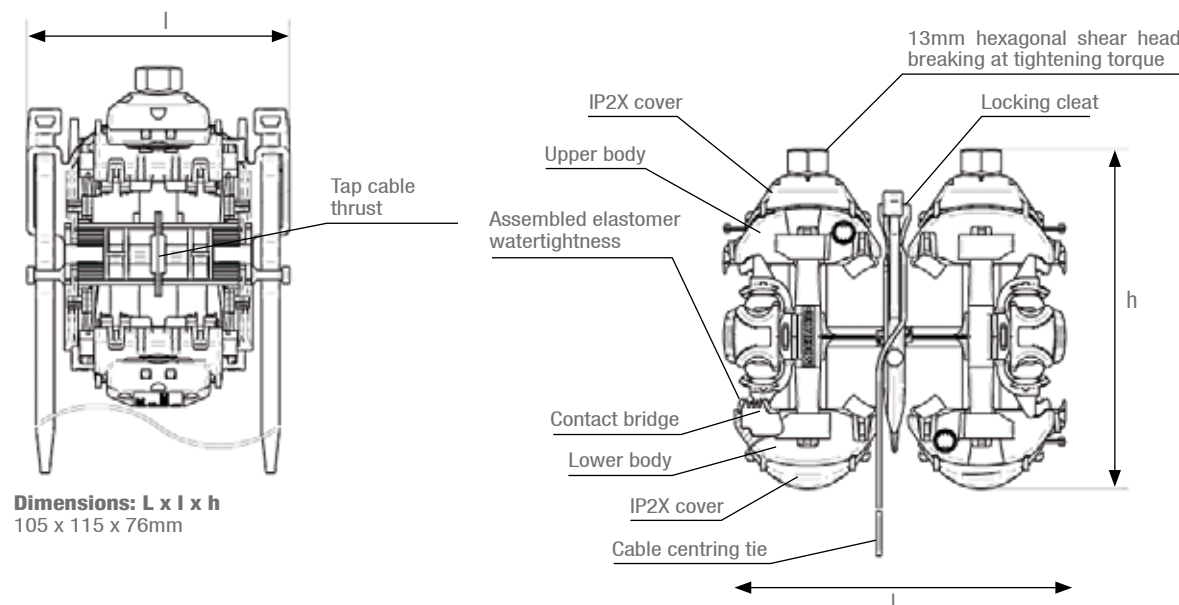
This RING connector is designed to establish a tap connection on low voltage underground networks. It is installed inside an underground box. It is used on a main cable with the following type of synthetic insulation:

- Circular or sectoral,
- Copper or aluminium,
- Solid or stranded core.

Description

- Connection is ensured through insulation piercing technology, simultaneously on main and tap lines.
- Connector capacities are 95 to 150mm² main and 1x10 to 35mm² tap.
- The connector accepts a reduced neutral.
- Adjustable clips are used to guide the cable and act as stops. The tap can be established on the right or left.
- The connector comprises:
 - 2 identical IP2X tightening modules enabling non-oriented mounting and simultaneous tightening from the top.
 - 1 cleat for locking the modules and for permanently securing the connector on the cable.
- The body is made of synthetic materials to make live-line work safe.
- The ergonomics has been designed to meet the specific constraints of underground work.
- Tightening efficiency is ensured by 2 shear heads, thereby reducing the assembly time.
- All connector components are captive to make the installation easier.
- The connector dimensions once implemented: $\varnothing \leq 119\text{mm}$.
- IP2X connector once implemented.

This connector is tested according to the **DIN VDE 0220** and **DIN EN 50393** standards.



Code	Designation	Main Capacities (mm ²)	Tap Capacities (mm ²)	Weight (kg)	Sales unit
K449	4 POLES SERVICE CONNECTOR 150 / 1x35	95-150	1 x 10-35	0.450	10

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).

Accessory



The insulated wedge separator is used for installing the multitap connector. It is used to separate the conductors.

Code	Designation	Weight (kg)	Sales unit
K007	WEDGE SEPARATOR 200x15x9mm	0.050	100

Underground box

MICHAUD

Utilisation

This underground box enables the tap connection from an underground network. It makes possible the tap connection of every conductors type (stranded, solid, multi-stranded, round or sectoral). It comprises the connector, the resin, the box and accessories according to the local standard.



K450

Description

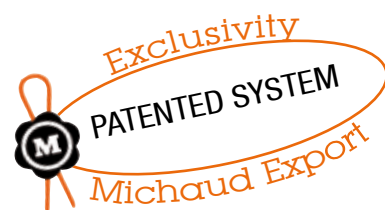
- The box comprises a translucent shell made of thermoplastic material (PP).
- Box accessories required for the assembly are supplied: section reducer, strips of adhesive foam, foams, links, gloves, etc.
- The polyurethane resin, delivered in a dual-bag, is qualified according to the **NF C33-010** (MPF01/DC and MPF PM) and **HD631.1** (LMPW, LIN, MMPW, NIW) standards.
- Once implemented, the dimensions of the box are 380x180x150mm.
- The connector shapes are studied to perform a good display of the resin.

The underground box is tested according to the **DIN EN 50393** standard.

Code	Designation	Capacities (mm ²)	Weight (kg)	Sales unit
K450	MULTIPOLE CONNECTOR 150 + UNDERGROUND BOX	95-150 / 1x10-35	4.300	1

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).

Multipole ring connector 240mm²



K459

MICHAUD

Application

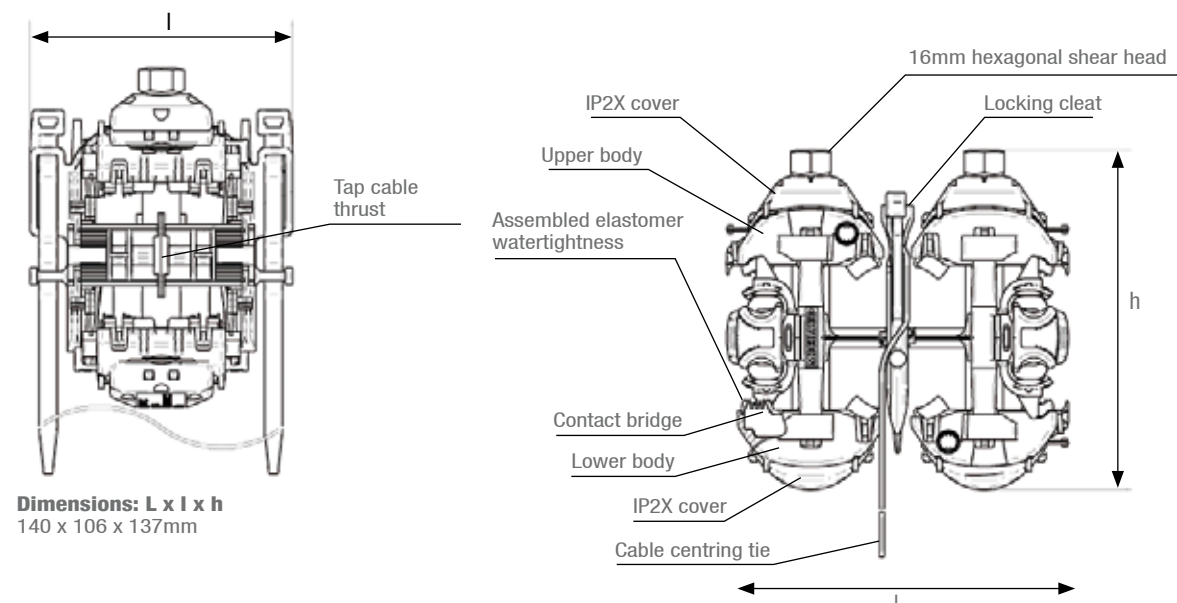
This RING connector is designed to establish a tap connection on low voltage underground networks. It is installed inside an underground box. It is used on a main cable with the following type of synthetic insulation:

- Circular or sectoral,
- Copper or aluminium,
- Solid or stranded core.

Description

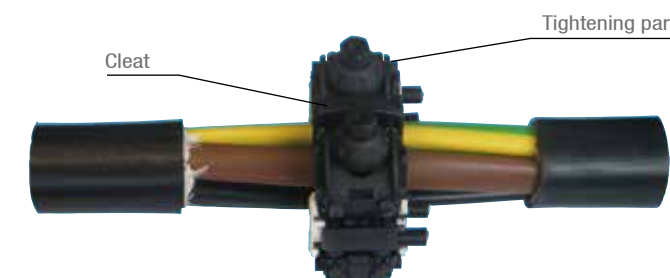
- Connection is ensured through insulation piercing technology, simultaneously on main and tap lines.
- Connector capacities are: 50 to 240mm² main and 1 up to 2x10 to 35mm² tap.
- The connector accepts a reduced neutral.
- Adjustable clips are used to guide the cable and act as stops. The tap can be established on the right or left.
- The connector comprises:
 - 2 identical IP2X tightening modules enabling non-oriented mounting and simultaneous tightening from the top.
 - 1 cleat for locking the modules and for permanently securing the connector on the cable.
- The body is made of synthetic materials to make live-line work safe.
- The ergonomics has been designed to meet the specific constraints of underground work.
- Tightening efficiency is ensured by 2 shear heads, thereby reducing the assembly time.
- All connector components are captive to make the installation easier.
- IP2X connector once implemented.

This connector is tested according to 1 000 cycles electrical ageing according to the **EN 61 238-1** standard.



Code	Designation	Main Capacities (mm ²)	Tap Capacities (mm ²)	Weight (kg)	Sales unit
K459	4 POLES SERVICE CONNECTOR 240 / 2x35	50-240	2 x 10-35	0.820	8

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).



Accessory



This kit comprising a cable and a blue synthetic sheath is used as a complement to the K459 to ensure earth system of the multitap connector.

The insulated wedge separator is used for installing the multitap connector. It is used to separate the conductors.

Code	Designation	Weight (kg)	Sales unit
K007	WEDGE SEPARATOR 200x15x9mm	0.050	100

Underground box

MICHAUD

Application

This underground box enables the tap connection from an underground network. It makes possible the tap connection of every conductors type (stranded, solid, multi-stranded, round or sectoral). It comprises the connector, the resin, the box and accessories according to the local standard.



K645

Description

- The box comprises a translucent shell made of thermoplastic material (PP).
- The box is available in 2 versions: injected box or cast box.
- Box accessories required for the assembly are supplied: section reducer, strips of adhesive foam, foams, links, gloves, etc.
- The polyurethane resin, delivered in a dual-bag, is qualified according to the **NF C33-010** (MPF01/DC and MPF PM) and **HD631.1** (LMPW, LIN, MMPW, NIW) standards.
- Once implemented, the dimensions of the box are 540x240x190mm.
- The connector shapes are studied to perform a good display of the resin.

Code	Designation	Main Capacities (mm ²)	Tap Capacities (mm ²)	Weight (kg)	Sales unit
K640	SERVICE BOX MULTI-CONNECTION INJECTED 240-35	50-240	2x10-35	15	10
K645	SERVICE BOX MULTI-CONNECTION CAST 240-35	50-240	2x10-35	15	10

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).

Multipole ring connector 300mm²

Exclusivity
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Michaud Export



K642

MICHAUD

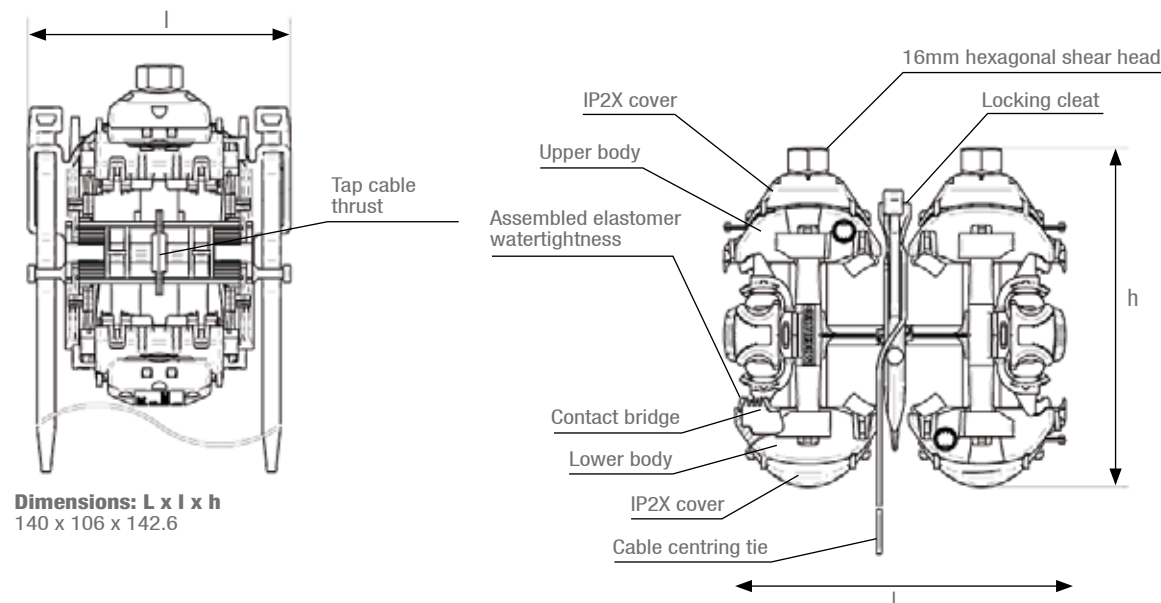
Application

This RING connector is designed to establish a tap connection on low voltage underground networks. It is installed inside an underground box. It is used on a main cable with the following type of synthetic insulation:

- Circular or sectoral,
- Copper or aluminium,
- Solid or stranded core.

Description

- Connection is ensured through insulation piercing technology, simultaneously on main and tap lines.
- Connector capacities are 240 to 300mm² main and 1 up to 2x10 to 35mm² tap.
- The connector accepts a reduced neutral.
- Adjustable clips are used to guide the cable and act as stops. The tap can be established on the right or left.
- The connector comprises:
 - 2 identical IP2X tightening modules enabling non-oriented mounting and simultaneous tightening from the top.
 - 1 cleat for locking the modules and for permanently securing the connector on the cable.
- The body is made of synthetic materials to make live-line work safe.
- The ergonomics has been designed to meet the specific constraints of underground work.
- Tightening efficiency is ensured by 2 shear heads, thereby reducing the assembly time.
- All connector components are captive to make the installation easier.
- IP2X connector once implemented.



Code	Designation	Capacities Main (mm ²)	Capacities Tap (mm ²)	Weight (kg)	Sales unit
K642	4 POLES SERVICE CONNECTOR 300 / 2x35	240-300	2x10 - 35	0.850	10

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).

Accessory



The insulated wedge separator is used for installing the multitap connector. It is used to separate the conductors.

Code	Designation	Weight (kg)	Sales unit
K007	WEDGE SEPARATOR 200x15x9mm	0.050	100

Underground box

MICHAUD

Application

This underground box enables the tap connection from an underground network. It makes possible the tap connection of every conductors type (stranded, solid, multi-stranded, round or sectoral). It comprises the connector, the resin, the box and accessories according to the local standard.



K646

Description

- The box comprises a translucent shell made of thermoplastic material (PP).
- The box is available in 2 versions: injected box or cast box.
- Box accessories required for the assembly are supplied: section reducer, strips of adhesive foam, foams, links, gloves, etc.
- The polyurethane resin, delivered in a dual-bag, is qualified according to the **NF C33-010** (MPF01/DC and MPF PM) and **HD631.1** (LMPW, LIN, MMPW, NIW) standards.
- Once implemented, the dimensions of the box are 540x240x190mm.
- The connector shapes are studied to perform a good display of the resin.

Code	Designation	Capacities Main (mm ²)	Capacities Tap (mm ²)	Weight (kg)	Sales unit
K646	SERVICE BOX MULTI-CONNECTIONS CAST + CONNECTOR 300 ²	240-300	2x10-35	15.050	10

For compatibility with your conductors, please contact us (cable compatibility shall be tested before use).

Single pole service connector

1 tap



Phase - **K317**



Neutral - **K318**

2 taps



Phase - **K419**



Neutral - **K420**

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Application

This connector is designed to establish a tap connection on low voltage underground networks. It is located in underground cast or injected boxes. It can be used on a main cable with paper or synthetic insulation of type:

- circular or sectoral,
- aluminium,
- stranded or solid core.

Description

- Connection is ensured through insulation piercing technology simultaneously on main and tap lines.
- The K419 and K420 models can be used for connecting 2 taps with identical or different sections.
- The K420 model integrates an earth system conductor.
- Connectors are fully insulated (IP2X protection degree). Bodies are made of synthetic materials to make live-line work safe.
- The ergonomics has been designed to meet the specific constraints of underground work.
- Tightening efficiency is ensured by a shear head screw.

The components are tested for 200 cycles according to the **NF C 63-061** and 1 000 cycles electrical ageing according to the **NF EN 61238-1** standards.

Code	Designation	Main Capacities (mm²)	Tap Capacities (mm²)	Weight (kg)	Sales unit
K317	CONNECTOR CBS/CS 240	50-240	10-35	0.230	3
K318	CONNECTOR CBS NEUTRAL/CS	50-95	10-35	0.135	1
K419	CONNECTOR CB2p/CS 240	50-240	2x10-35	0.200	3
K420	CONNECTOR CB2p NEUTRAL/CS	50-95	2x10-35	0.310	1

Accessory

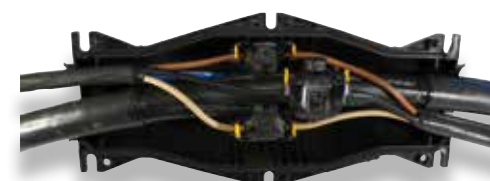


K001

End cap is used in addition to the K317 and K318 connector in order to insulate the end of the tap cable.

Code	Designation	Weight (kg)	Sales unit
K001	BLACK FLEXIBLE END CAP 10-50M	0.003	20

Underground box



MICHAUD

Application

This underground service box is designed to establish a single or double tap from one or 2 line connections from an underground network made up of round or sectoral conductors (as defined in **NF C 33-210**).

Description

- The box is available in injected or cast version:
- SDI or SDC: injected or cast single tap service box.
 - DDI or DDC: injected or cast double tap service box.
 - Small models have been developed for single phase applications (single phase SDI-R).
 - Each kit comprises all of the equipment needed for the installation:
 - Insulation piercing connectors,
 - Adhesive tape and resin for the injected boxes,
 - 2 semi-housings and resin for the cast boxes.
 - Injected box models for earlier generation cables (impregnated paper cables) can be supplied upon request.

Code	Designation	Main Capacities (mm²)	Tap Capacities (mm²)	Weight (kg)	Sales unit
K630	SINGLE-OUTLET CAST BOX (SDC) *	50-240	1x10-35	ND	1
K631	DOUBLE-OUTLET CAST BOX (DDC) *	50-240	2x10-35	ND	1

* Products manufactured upon request.

Tap and junction gel box

MICHAUD

Application

These gel boxes are designed to establish low voltage conductor junction or tapping. They protect, insulate and make the connection waterproof in a single work operation. They comprise a connector trapped in gel once the product has been implemented. This connector can be dismantled. The box can be implemented in soil or water. It can be reused several times. It is not resistant to UV.

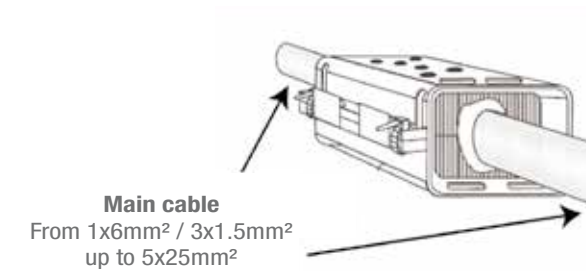


Description

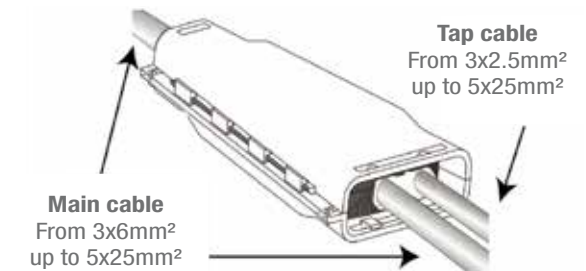
- The box has an integrated gel enabling the product to be assembled and dismantled.
- The gel ensures the waterproofing and insulation functions whereas the box ensures the mechanical functions (shock-absorbing). The gel is stable at temperature between -60 and +200°C.
- The product is watertight under water up to 1m.
- Installation is carried out with neither any special tool, nor flame.
- The connector is dimensioned for 3 up to 5 conductors. It is delivered with an hexagonal spanner with 6 faces spanner for its installation.
- The box is made of shock-resistant, halogen-free PP synthetic materials.

The product meets the criteria of the **DIN EN 50393** standard.

Junction application



Tap application



Code	Designation	Number of conductors	Main capacity mini / maxi (mm²)	Tap capacity mini / maxi (mm²)	Dimensions L x l x D (mm)	Weight (kg)	Sales unit
GEL CONNECTION BOXES - JUNCTION WITH CONNECTOR							
N708	QUICKGEL 125C	1	6-25	-	86 x 47 x 27	0.125	1
N709	QUICKGEL 32.5C	3	1.5-2.5	-	86 x 47 x 27	0.085	1
N710	QUICKGEL 506C	3 up to 5	1.5-6	-	146 x 55 x 35	0.275	1
N711	QUICKGEL 516C	3 up to 5	6-16	-	180 x 69 x 40	0.470	1
N712	QUICKGEL 425P	4 (piercing)	6-25	-	240 x 75 x 43	0.785	1
N713	QUICKGEL 525P	4 (piercing) + 1 (stripping/earth system)	6-25	-	240 x 75 x 43	0.855	1
GEL CONNECTION BOXES - JUNCTION / TAPPING WITH CONNECTOR							
N714	QUICKGEL 516YC	3 up to 5	6-16	2.5-6	220 x 110 x 53	0.780	1
N715	QUICKGEL 525YC	3 up to 5	16-25	2.5-25	260 x 130 x 65	1.290	1
GEL CONNECTION BOXES WITHOUT CONNECTOR							
N716	QUICKGEL 100				86 x 47 x 27	0.070	1
N717	QUICKGEL 500				146 x 55 x 35	0.185	1
N718	QUICKGEL 510				180 x 69 x 40	0.330	1
N719	QUICKGEL 520				240 x 75 x 43	0.610	1

Service repairing junction kit - JRB



BE004

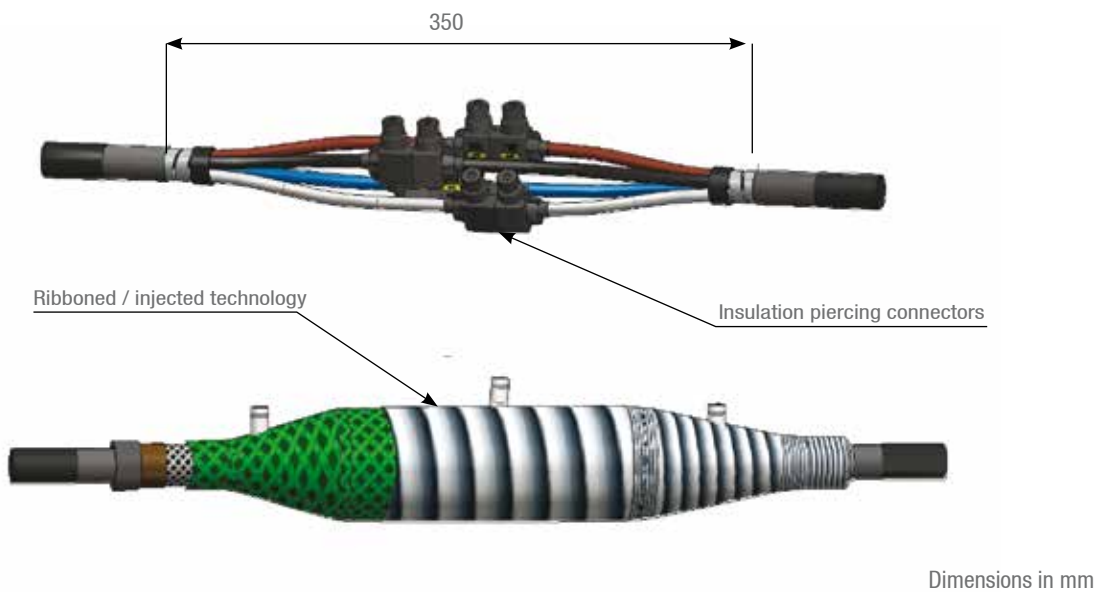
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Application

This accessory is designed to repair connection of service underground damaged cables.

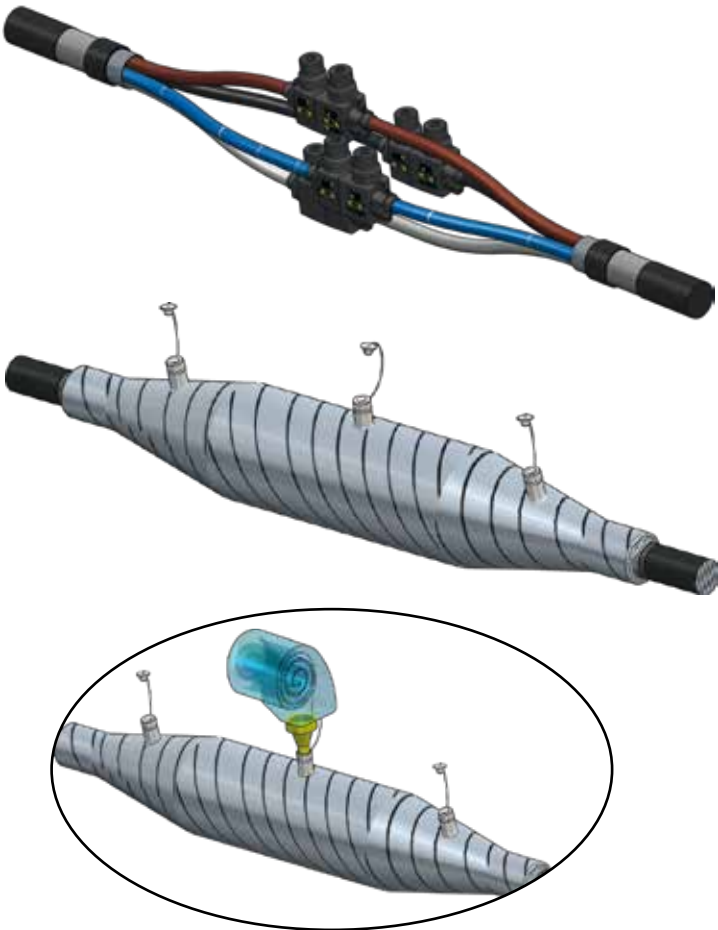
Description

- This kit comprises the following accessories:
 - 4 pre-insulated junction sleeves using insulation piercing technology,
 - 1 device enabling the reconstitution of the cable screen,
 - 1 hardening resin.
- The installation is of ribboning / injection type.



Installation

- Cables preparation
- Cables connection
- Ribboning
- Resin injection



Code	Designation	Cable section (mm²)		Weight (kg)	Sales unit
		Mini	Maxi		
BE004	SERVICE REPAIRING JUNCTION KIT JRB 10-50	4x10	4x35	2.97	1

Single pole network connector



Phase 50-240 / 50-240
K383



Phase 50-240 / 50-150
K384



Phase 50-95 / 50-95
K313



Neutral 50-150 / 50-95
K360

MICHAUD

Application

This connector is designed to be used with underground low voltage network for tapping or junction applications. It is implemented in underground cast or injected boxes. It can be used on aluminium, circular or sectoral type cables with paper or synthetic insulation.

Description

- Connection is established simultaneously using insulation piercing technology on the main and tap lines.
- The connectors are fully insulated (IP2X degree of protection). Their bodies are made of synthetic materials to make live-line work safe.
- They are tested for 1 000 cycles electrical ageing according to the **NF EN 61238-1** standard.
- The dielectric strength in air is greater than 4kV.
- The ergonomics has been designed to meet the specific constraints of underground work.
- Tightening efficiency is ensured by shear head screws.

These connectors meet the criteria of the technical specification **HN 68 S-12**.

Code	Designation	Main Capacities (mm ²)	Tap Capacities (mm ²)	Weight (kg)	Sales unit
K383	CONNECTOR CDR/CS 50-240	50-240	50-240	0.700	1
K384	CONNECTOR CDR/CS 50-240/50-150	50-240	50-150	0.400	1
K313	CONNECTOR CDR/CS 50-95	50-95	50-95	0.210	3
K360	CONNECTOR CDR NEUTRAL/CS 50-95	50-150	50-95	0.210	1

Accessories



K247



K002

The end cap K247 and K002 are used in addition to K383 + K384 and K313 + K360 respectively for the insulation of the tap cable end.



SEE SHEET

OVERHEAD / LV Ending fitting / Seal and cap



K314

This connector is designed for earthing the neutral. For the supply of the earth system cable, please contact us.

Code	Designation	Weight (kg)	Sales unit
K314	EARTH SYSTEM CONNECTOR 50-95 / 25	0.140	1

Underground network box



MICHAUD

Application

This underground network box is designed to establish the junction or tap from a round or sectoral underground network (as defined in the **NF C 33-210** standard).

Description

- The box is available in cast version (JNC: tap or junction cast box).
- Each kit comprises all the equipment required for the installation:
 - Insulation piercing connectors (see details on the underground network connectors page),
 - Adhesive tape and resin for the injected box,
 - 2 semi-housings and resin for the cast box.
- An injected box is available for earlier generation cables upon request.

Code	Designation	Main Capacities (mm ²)	Tap Capacities (mm ²)	Weight (kg)	Sales unit
K610	CAST JUNCTION BOX 95-95 (JNC) *	50-95	50-95	4.520	1
K612	CAST JUNCTION BOX 240-240 (JNC) *	95-240	95-240	5.430	1

* Products manufactured on request. Please contact us.

Mechanical tightening underground junction 1kV - Heat-shrinkable



Sleeves



Sheaths

Abrasive strip

MICHAUD

Application

This set is designed to perform low voltage underground cables junctions. The system can be buried once implemented.

It comprises junction sleeves, heat-shrinkable sheaths and an abrasive strip. Junction sleeves use mechanical tightening enabling to cover a wide sections range and an easier installation. The delivered heat-shrinkable sheaths make possible the insulation reconstitution of the conductor and the outside sheath.

Description

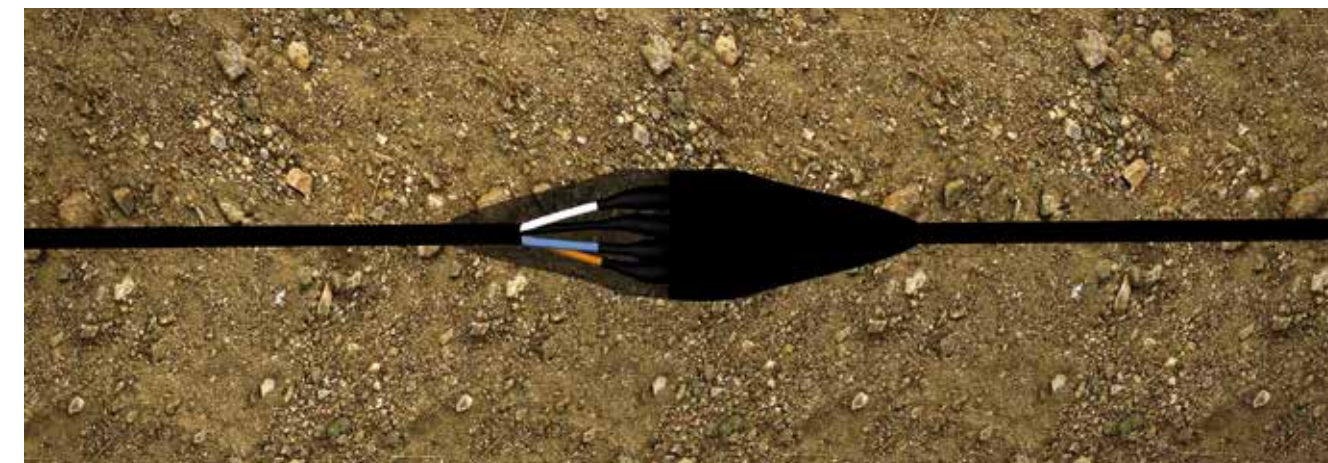
Junction sleeves:

- Junction sleeves are made of tinned aluminium enabling the compatibility with aluminium and copper cables.
- The shear head tightening ensures an optimized electrical contact and a sleeve shape suitable to the heat-shrinkable sheath covering.
- Sleeves offer a central stop and ensure a water barrier because of non-through piercing.
- The cable range sections are from 16 up to 300mm².
- Sectoral cores shall be rounded before connection.
- Sleeves meet the criteria of the **EN 61 281-1** class A standard.

Heat-shrinkable sheaths:

- Internal sheaths ensure the insulation of every conductor. External sheaths rebuild the mechanical protection.
- They can be used from -40°C up to +90°C.
- Sheaths are without halogen and are resistant to UV, mould and chemical substances.
- They are qualified according to the criteria of the **IEC 60 684** standard.
- The sheaths internal surface is covered with glue ensuring a good watertightness once heated and implemented.
- A strip is supplied in order to abrade the cable insulation and to ensure a good adhesion with the heat-shrinkable sheath.
- Other kits are available according to conductors nature and shape : contact us.

The whole set meets the criteria of the **EN 50 393-3** standard.



Code	Designation	Weight (kg)	Sales unit
U560-25	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 6-25mm ²	0.090	1
U560-50	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 16-50mm ²	0.195	1
U560-95	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 35-95mm ²	0.300	1
U560-150	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 50-150mm ²	0.400	1
U560-240 4V	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 95-240mm ² 4 SCREWS	1.150	1
U560-300 4V	JUNCTION 1KV HEAT-SHRINKABLE CABLE 4 C 150-300mm ² 4 SCREWS	1.500	1

Option: Sleeve alone



U551-240 4V



U550-150 2V



U550-25 2V

Code	Designation	Weight (kg)	Sales unit
U550-25 2V	MECHANICAL TIGHTENING SLEEVE 6-25mm ² 2 SCREWS	0.020	1
U550-50 2V	MECHANICAL TIGHTENING SLEEVE 16-50mm ² 2 SCREWS	0.045	1
U550-95 2V	MECHANICAL TIGHTENING SLEEVE 35-95mm ² 2 SCREWS	0.070	1
U550-150 2V	MECHANICAL TIGHTENING SLEEVE 50-150mm ² 2 SCREWS	0.095	1
U550-240 2V	MECHANICAL TIGHTENING SLEEVE 95-240mm ² 2 SCREWS	0.200	1
U551-240 4V	MECHANICAL TIGHTENING SLEEVE 95-240mm ² 4 SCREWS	0.280	1
U551-300 4V	MECHANICAL TIGHTENING SLEEVE 150-300mm ² 4 SCREWS	0.350	1

Short-circuiting lost end BPMCC



BE002

Utilisation

This accessory is designed to short-circuit waiting networks without power. It is used to warn accidental powering at one end. It ensures cables watertightness.

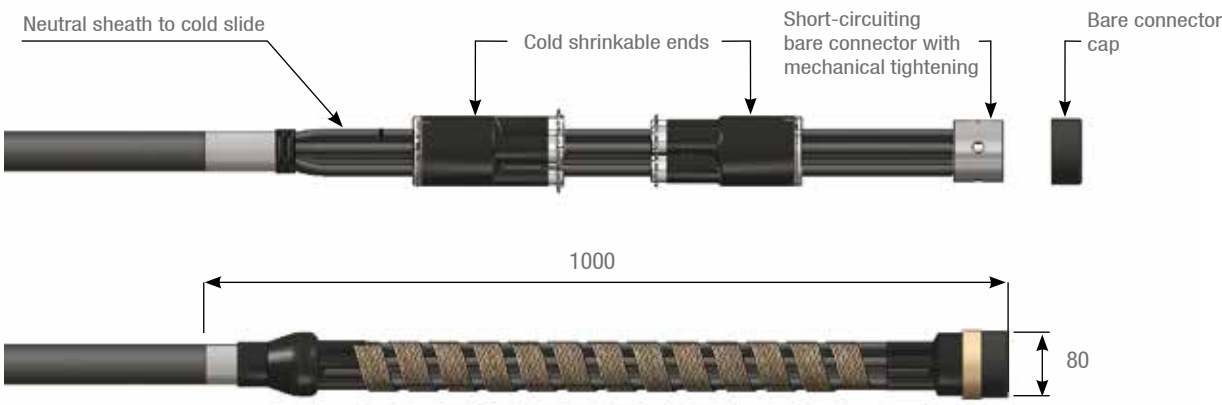
The benefit:

- + Easy installation

Description

- This kit comprises the following accessories:

- 1 short-circuiting bare connector with mechanical tightening,
- 1 neutral sheath to cold slide,
- 2 cold shrinkable ends.



Neutral sheath to cold slide

Cold shrinkable ends

Short-circuiting bare connector with mechanical tightening

Bare connector cap

1000

80

Dimensions in mm

Installation

- Cables preparation.

- Cable re-insulation.

- Conductors short-circuiting.

- Accessory reinforcement.



Code	Désignation	Cable section (mm²)		Weight (kg)	Sales unit
		Mini	Maxi		
BE002	SHORT-CIRCUITING LOST END BPMCC 50-240	3x95+50	3x240+120M*	1.320	1

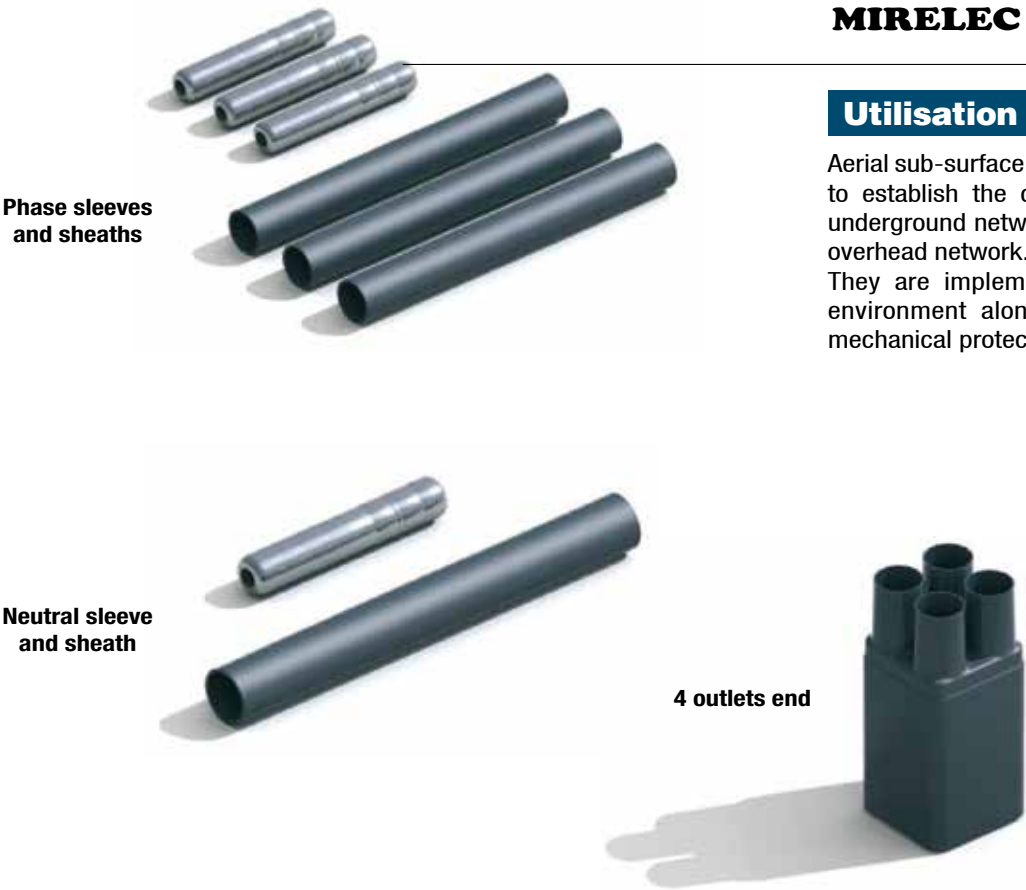
* The letter M means that the core of the conductor is solid.

Aerial sub-surface connection
for LV network (EJAS)

MIRELEC

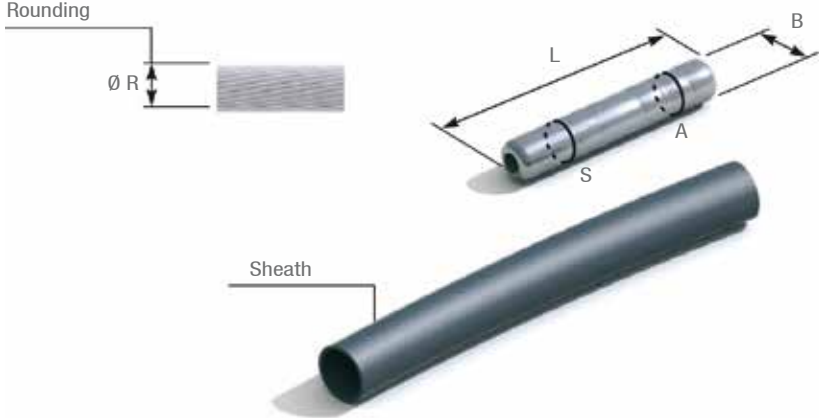
Utilisation

Aerial sub-surface junction is designed to establish the connection from an underground network to a low voltage overhead network.
They are implemented on overhead environment along a pole, under a mechanical protection as a conduit.



Description

This kit comprises the following accessories:
- 3 phase sleeves and 1 neutral of type MJT,
- 4 heat-shrinkable sheaths for the sleeves insulation,
- 1 end with 4 outlets for the cable head of the underground conductor.



Cable		Sleeve + Sheath		Ø R	B	L	H
S (mm²)	A (mm²)			(mm)	(mm)	(mm)	
50	54.6	MJT 50 - 54	FRM 25 - 200	8.5	20	110	E173
50	70N	MJT 50 - 70N		10.5			
70	54.6	MJT 70 - 54		10.5			
70	70N	MJT 70 - 70N		10.5			
95	54.6	MJT 95 - 54		12			
95	70	MJT 95 - 70		12			
95	150	MJT 95 - 150	FRM 30 - 200	15	25	120	E 215
150	70	MJT 150 - 70					
150	95N	MJT 150 - 95N					
150	150	MJT 150 - 150	FRM 35 - 200	18.5	32	142	E 280
240	70	MJT 240 - 70					
240	150	MJT 240 - 150					

Code	Designation	Cable (mm²)		Set composition		Weight (kg)	Sales unit
		Underground	Overhead	Sleeve	Sheath		
U580	EJAS 95 - 50/70-54	3x95+50	3x70+54.6	MJTASE 95-70 1 MJT 50-54	3 FRM 30 - 200	0.520	1
U581	EJAS 95 - 50/70-70N	3x95+50	3x70+70N	MJTASE 95-70 1 MJT 50-70N	1 FRM 25 - 200	0.510	1
U582	EJAS 95 - 50/150-70N	3x95+50	3x150+70N	MJTASE 95-150 1 MJT 50-70N	4 FRM 25 - 200	0.680	1
U583	EJAS 95 - 70/70-54	3x95+70	3x70+54.6	MJTASE 95-70 1 MJT 70-54	3 FRM 30 - 200 1 FRM 25 - 200	0.640	1
U584	EJAS 150 - 70/70-70N	3x150+70	3x70+70N	MJTASE 150-70 1 MJT 70-70N	3 FRM 30 - 200 1 FRM 25 - 200	0.670	1
U585	EJAS 150 - 70/150-70N	3x150+70	3x150+70N	MJTASE 150-150 1 MJT 70-70N	3 FRM 30 - 200 1 FRM 25 - 200	0.720	1
U586	EJAS 240 - 95/70-54	3x240+95	3x70+54.6	MJTASE 240-70 1 MJT 95-54	3 FRM 35 - 200 1 FRM 25 - 200	0.810	1
U587	EJAS 240 - 95/70-70N	3x240+95	3x70+70N	MJTASE 240-70 1 MJT 95-70N	3 FRM 35 - 200 1 FRM 25 - 200	0.840	1
U588	EJAS 240 - 95/150-70N	3x240+95	3x150+70N	MJTASE 240-150 1 MJT 95-70N	3 FRM 35 - 200 1 FRM 25 - 200	0.920	1

REMIC set of bars



Set of bars 300
Q 600



Set of bars 450
Q 601



Set of bars 600
Q 602

MICHAUD

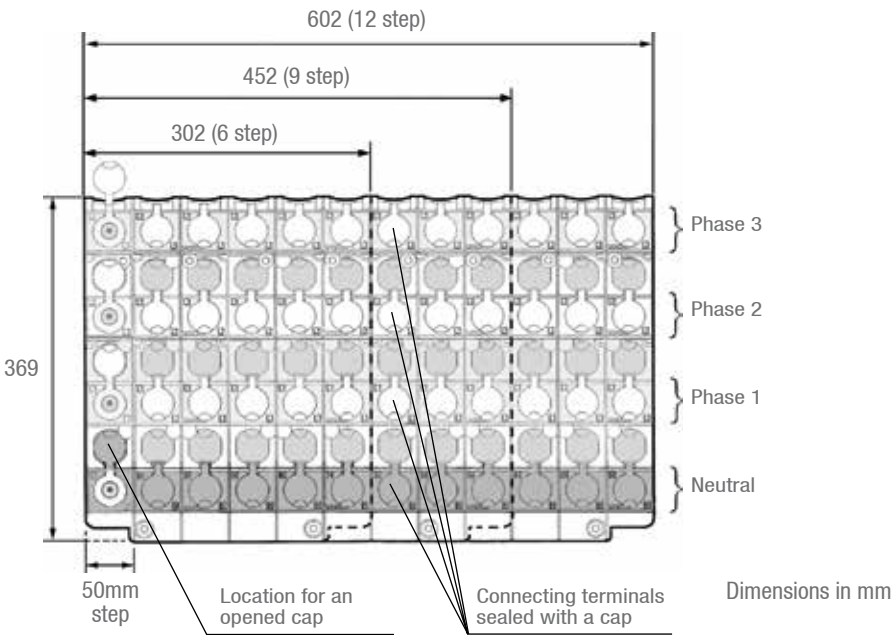
Application

The sets of bars supports 300, 450 and 600 respectively offer 6, 9 and 12 connection terminals for each pole.

Description

- The sets of bars supports 300, 450 and 600 are respectively made of 6, 9 and 12 steps of 50mm.
- The set of bars support is fixed to the bottom of all REMBT cabinets on standardised inserts.
- The inclination of the phase bars facilitates connection.
- The poles are identified (N, L1, L2, L3).
- The modules are fixed using standardised M12 threads.
- The product is IP2X before and after installation. The unused connection terminals are covered using a captive cap.
- A 400A re-supply device can be connected directly to the connection terminals. IP2X is maintained thanks to the 35mm diameter of the terminals.

These sets of bars supports meet the criteria of the **HN 63-S-65** standard.



Code	Designation	Weight (kg)	Sales unit
Q600	REMIC SET OF BARS SUPPORT 300	2.630	1
Q601	REMIC SET OF BARS SUPPORT 450	3.760	1
Q602	REMIC SET OF BARS SUPPORT 600	4.870	1

Accessories

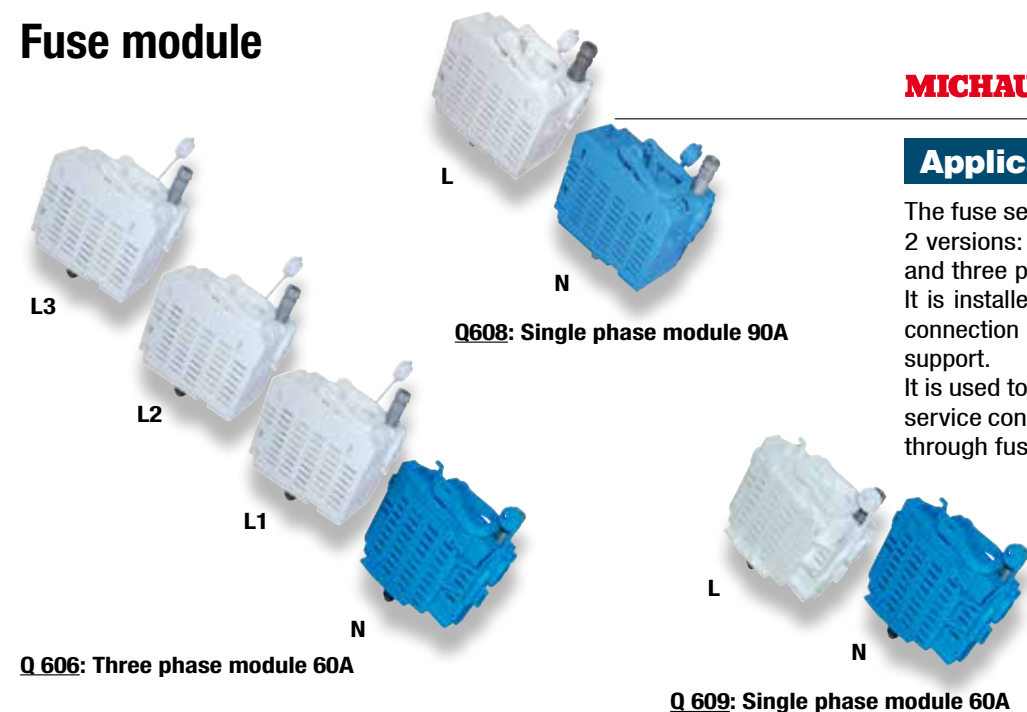
ADAPTORS FOR S15-S20 CABINETS

Code	Designation	Weight (kg)	Sales unit
Q618	REMIC STANDARD S20 CABINET FRAME	1.030	1
Q619	REMIC STANDARD S15 CABINET FRAME	1.550	1



REMIC service module

Fuse module



MICHAUD

Application

The fuse service module is available in 2 versions: single phase 60A and 90A, and three phase 60A. It is installed on the M12 standardized connection terminals of the set of bars support. It is used to tap a single or three phase service connection ensuring protection through fuses size 00.

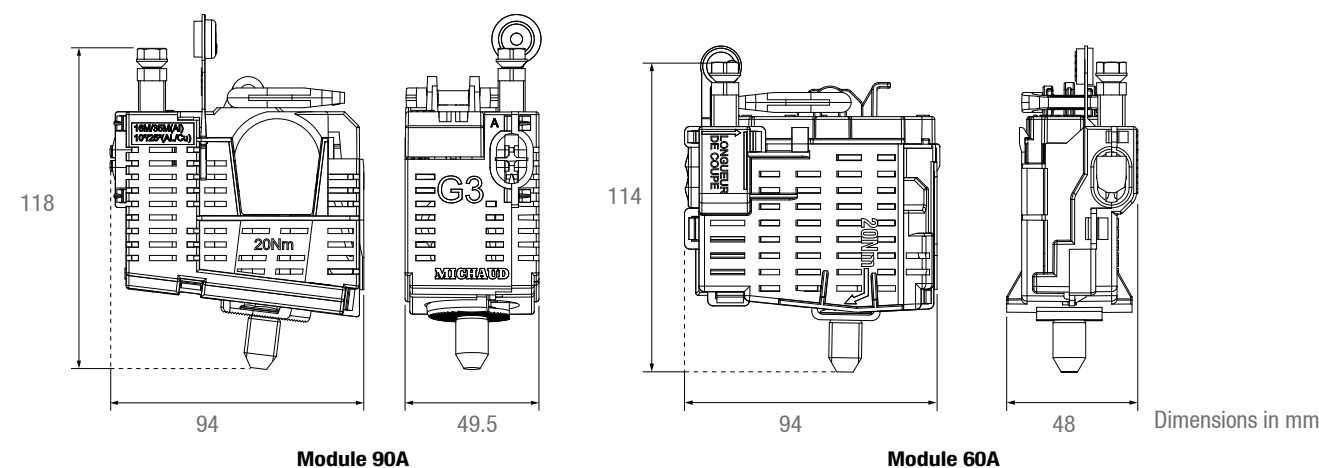
The benefit:

+ In case of long service connections, the terminal can receive 50M solid core to avoid voltage drop.

Description

- The fuse service module has a protection degree type IP2X before and after installation.
- The neutral is identified thanks to its blue colour.
- The connection terminals use insulation piercing technology and are equipped with shear head screws. Capacity is 10-25mm² Cu / 16M-50M Al (the letter M means that the core of the conductor is solid).

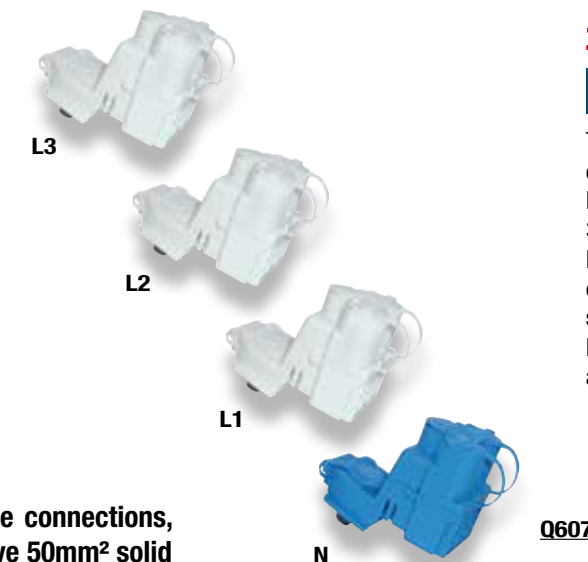
This module meets the criteria of the **H 63-S-65** standard.



Code	Designation	Normative capacity (A)	Real capacity (A)	Weight (kg)	Sales unit
Q608	REMIC MODULE TYPE FUSE SERVICE SINGLE PHASE 90A RBPM	90	108	0.590	1
Q606	REMIC MODULE TYPE FUSE SERVICE THREE PHASE 60A RBPT	60	72	0.850	1
Q609	REMIC MODULE TYPE FUSE SERVICE SINGLE PHASE 60A RBPM	60	72	0.430	1

SEE SHEET
PROTECTION / Fuses / Fuse cartridge AD

Multitap module



MICHAUD

Application

The multitap connection module comprises 1 neutral and 3 phases. It allows a maximum of 3 single phase or 3 three phase services to be connected. It is installed on the M12 standardized connection terminals of the set of bars support. It is mainly used when the AD fuses are installed in the customer premises.

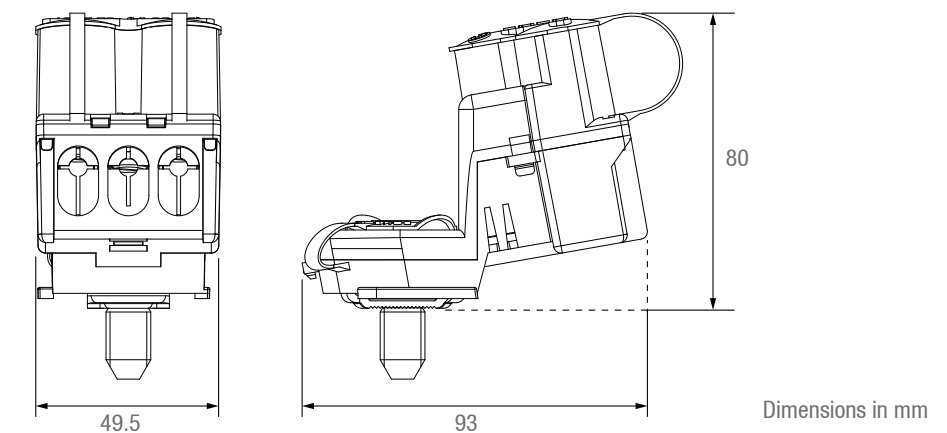
The benefit:

+ In case of long service connections, the terminal can receive 50mm² solid core to avoid the voltage drop.

Description

- The multitap connection module has a degree of protection type IP2X before and after installation.
- The neutral and phases have 3 insulation piercing connection terminals.
- The neutral is identified thanks to its blue colour.
- The terminals are equipped with shear head screws. Capacity is 10-25mm² Cu / 16M-50M Al (the letter M means that the core of the conductor is solid).
- The product design allows the conductors to be wired on the top of the lower terminals.
- The small size of the IP2X caps provides access to the tightening screws of the terminals even when all of the conductors are connected.

This module meets the criteria of the **HN 63-S-65** standard.



Code	Designation	Weight (kg)	Sales unit
Q607	REMIC MULTITAP CONNECTION MODULE RBD (1 NEUTRAL + 3 PHASES)	0.950	1

Variant:

The multitap connection module is available in single phase version.

Code	Designation	Weight (kg)	Sales unit
Q610	REMIC MULTITAP CONNECTION MODULE SINGLE PHASE (1 NEUTRAL + 1 PHASE)	0.580	1

REMIC network module

MICHAUD

Application

The network module is available in 2 versions:
- 50-240mm²,
- 50-150mm².
It comprises one neutral terminal and three phase terminals.
It is installed on the M12 standardized connection terminals of the sets of bars supports.

Q603: Network module 50-240

Q612: Network module 50-150

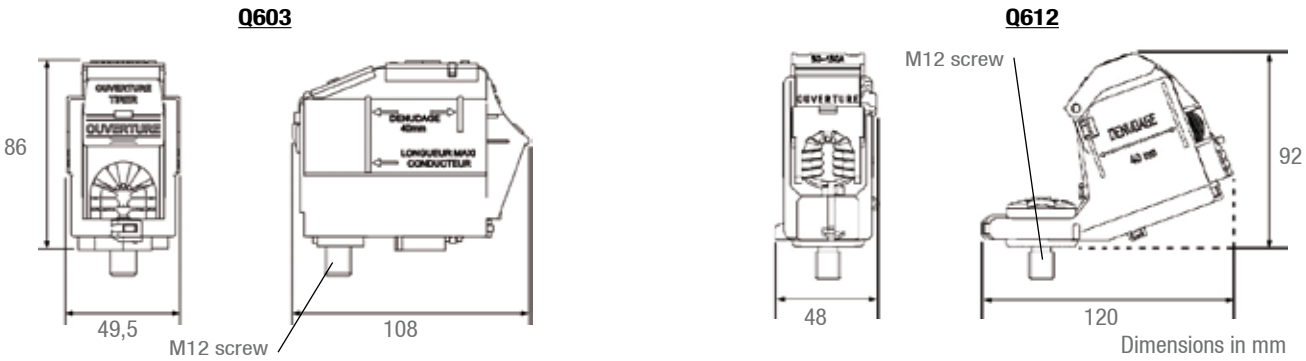
The benefits:

- + Easy installation of the NETWORK module 50-240.
- + 50mm² or 95mm² connection on a terminal of the NETWORK module 50-150.

Description

- The terminals are of Class A according to the **NF C 63-061** standard (Electrical ageing: 700 cycles).
- They are IP2X before and after installation regardless of the conductors section.
- The neutral is identified thanks to its blue colour.
- The terminals receive round or sectoral shape aluminium or copper conductors.
- The conductors are tightened using a hexagonal H14 shear head screw. A second H14 head is used for possible dismantling and reuse using a 40Nm torque wrench.

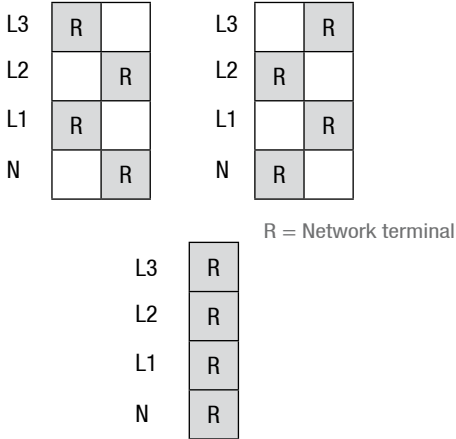
This module meets the criteria of the **HN 63-S-65** standard.



Installation

PRINCIPLE

- For all cable sections
Install the network module on two 50mm steps. The design of the set of bars supports allows one or the other of the configurations besides.



- For the cables with sections up to 95mm²
The network module 50-150 can be installed on only one step.

CHRONOLOGY OF THE OPERATIONS

- For the 50-240 module



1° Fixing of the module to the set of bars support (tightening at 30Nm).

2° Moving the **captive** slide of the module to the top so the conductor can be grasped from the front.

3° Tightening of the conductor until the shear head breaks after bringing the upper part of the terminal back to the bottom.

- For the 50-150 module

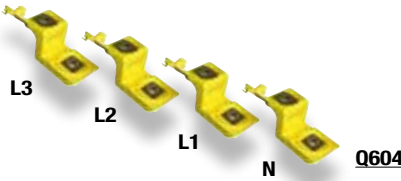
The principle is the same except the fact that the slide of the terminal does not have a retention system in the upper part (the slide is installed and removed from the front).

Code	Designation	Weight (kg)	Sales unit
Q603	REMIC MODULE TYPE NETWORK RRD 50-240 (1 NEUTRAL + 3 PHASES)	1.780	1
Q612	REMIC MODULE TYPE NETWORK RRD 50-150 (1 NEUTRAL + 3 PHASES)	1.670	1

Accessory

The insulation bloc module enables a network module to be temporarily separated from the set of bars support and possibly resupplied.

This module meets the criteria of the **HN 63-S-65** standard.



Code	Designation	Weight (kg)	Sales unit
Q604	REMIC 4-TYPE INSULATION BLOC MODULE	0.668	1

REMIC disconnection and protection module RRCP

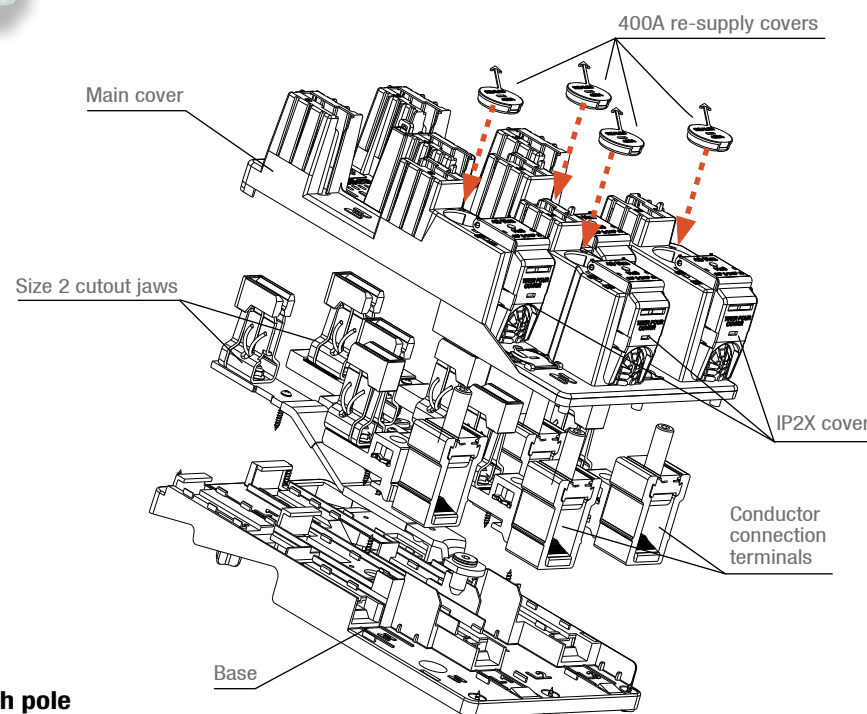


Q614

MICHAUD

Application

The REMIC module type RRCP offers a network outlet that can be cut (400 A function) or protected using maximum 200A fuses 115mm size 2 (200A function).
It is installed on the M12 standardised connection terminals of the sets of bars supports.
It is mainly used for supplying a collective or individual service with supervised power.



The benefits:

- + 1 single tool for installation
- + Compatibility with flat doors
- + Clear poles separation
- + Integrated IP2X protection on each pole

Description

- The small thickness of the new generation of module type RRCP facilitates use in small depth cabinets (flat door).
- The neutral is identified thanks to its blue colour.
- The terminals allow the connection of round or sectoral shape, copper or aluminium conductors.
- The capacity of the terminals is 50 to 240mm² for the neutral and for the phases.

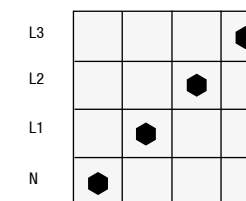
This module meets the criteria of the **HN 63-S-65** standard.

Caution: the RRCP module is installed exclusively on REMIC sets of bars supports.

Installation

PRINCIPLE

A disconnection and protection module (RRCP) requires four 50mm steps.



● : Fixing points on the set of bars support

CHRONOLOGY OF THE OPERATIONS

ASSEMBLY

- On the set of bars supports installed (450 or 600), open the 4 poles diagonally in the required place for installing the RRCP (the other captive caps above and below the diagonal must remain closed).
- Remove the IP2X captive caps then place and fix the RRCP on the set of bars support using 4 H16 screws.
- Replace all of the captive caps while waiting connection of the outlet.

LEADING-OUT WIRING

- Prepare end cable as usual.
- Remove the covers of the terminal blocks to connect.
- Cut the conductors to length, strip them over 45mm, brush them with neutral grease then insert them into the terminals.
- Replace the slides in U shape and tighten the screws until 40Nm.
- Replace the covers.

INSTALLATION OF THE BARS OR FUSES SIZE 2 (CENTRE-TO-CENTRE DISTANCE 115mm)

- Install the links or fuses using an insulated operating handle.

INSTALLATION OF THE RE-SUPPLY

- Remove the 4 re-supply covers.
- Perform necessary electrical measurements.
- Insert and screw the M12 re-supply socket.



Code	Designation	Weight (kg)	Sales unit
Q614	REMIC MODULE RRCP 400A / 200A	5.658	1

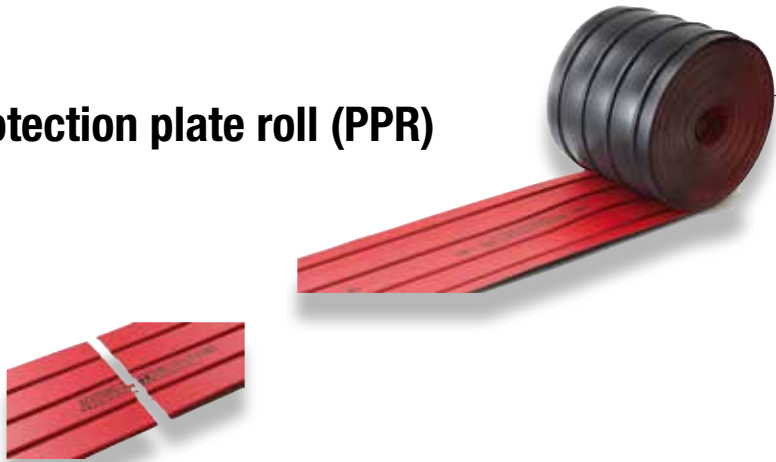
Variation:

The ERDF technical specification also defines a product known as RRC exclusively dedicated to the 400A cutout. For Michaud this is exactly the same product.

Code	Designation	Weight (kg)	Sales unit
Q613	REMIC MODULE RRC 400A	5.658	1

Protection and warning

Protection plate roll (PPR)



MICHAUD

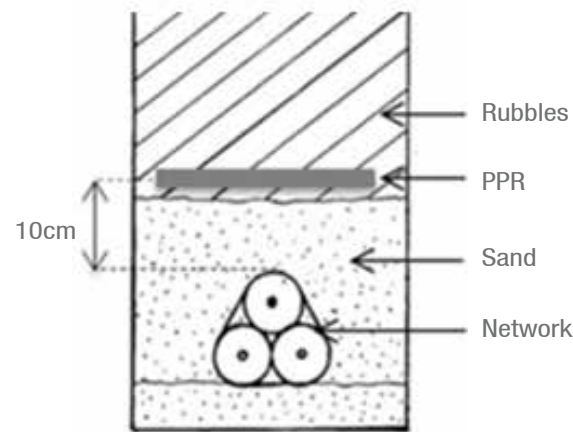
Application

This protection plate roll (PPR) is designed to protect underground networks from extraction (pipes and/or cables).
It can be used for underground network under weak load, engineering structure crossing, or in area of high density network.

Description

- The plate roll offers permanent mechanical protection.
- It is rot-proof, corrosion and water resistant and shock absorbing.
- The plate is of red colour. Other colours are available upon request.

This protection plate roll meets the criteria of the **DIN 54841-5** standard.



Code	Designation	Dimensions LxHxD (mm)	Weight (kg)	Sales unit
U591	PROTECTION PLATE ROLL (width 160mm)	50 000 x 160 x 2	16	1
U592	PROTECTION PLATE ROLL (width 180mm)	50 000 x 180 x 2	18	1
U593	PROTECTION PLATE ROLL (width 240mm)	25 000 x 240 x 2	12	1
U594	PROTECTION PLATE ROLL (width 300mm)	25 000 x 300 x 2	15	1

Other colours are available, please contact us.

Warning netting



MIRELEC

Application

This warning netting is designed to indicate the presence of low voltage power line cables buried in the ground.

Description

- This warning netting is available in 3 widths: 100, 200 and 300mm.
- It is made of red or green synthetic materials according to the requirement.

This flexible netting meets the criteria of the **NF EN 12613** standard.

Code	Designation	Width (m)	Length (m)	Weight (kg)	Sales unit
F860	WARNING NETTING 300m (width 0.1m)	0.1	300	1.500	3
F861	WARNING NETTING 100m (width 0.2m)	0.2	100	1.100	1
F862	WARNING NETTING 100m (width 0.3m)	0.3	100	1.625	1

Cold shrinkable seal

E2R RF - E4R RF cable sealing end

MICHAUD



Application

This cable sealing end is designed to ensure the watertightness of network and service stripped conductors ends. It is slid on the conductors and implemented without using flame.



E4R RF 95-240
L103



E4R RF 35-70
L102



E4R RF 10-35
L101



E2R RF 10-35
L100

The benefits:

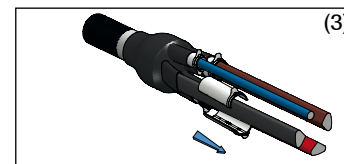
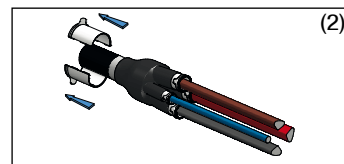
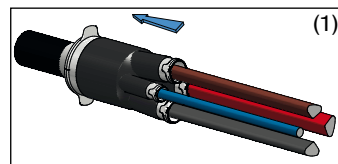
- + No tool is required
- + Very short installation time

Description

- Cable sealing ends are made of elastomer materials very elastic, flexible, resistant and treated to ensure a good protection to UV.
- For 2 conductors :
 - Service cable of 10 up to 35mm² (L100),
- For 4 conductors :
 - Service cable of 10 up to 35mm² (L101),
 - Network cable of 35 up to 70mm² (L102),
 - Network cable of 95 up to 240mm² (L103).

Installation

- Clean and strip the cable over the appropriate length.
- Remove the cable screen as well as stockings and clean each conductor.
- Cover the cut with three turns of adhesive tape.
- Re-insulate the neutral using a re-insulation sheath.
- Slide the cable sealing end up to the stop on the cable side (1).
- Remove the applicator ring on the cable side (2).
- Remove successively applicator rings on each conductor (3).



Code	Désignation	Capacity** (mm ²)	Weight (kg)	Sales unit
L100	CABLE SEALING END E2R RF 10-35 SILICONE	2x10 up to 2x35	0.050	20
L101	CABLE SEALING END E4R RF 10-35 SILICONE	4x10 up to 4x35	0.075	20
L102	CABLE SEALING END E4R RF 35-70 SILICONE	4x35 up to 4x70	0.100	20
L103	CABLE SEALING END E4R RF 95-240 SILICONE	3x95 + 50/70M* up to 3x240 + 95/120M*	0.130	10

* M means that the conductor core is solid.

** Capacities according to NF standards.

Cable cap

MICHAUD

Application

This cap is designed to ensure the watertightness of network and service cables conductors end. It can be used on cable drums. It is used exclusively without power.



CRC RF 46-80
L115



CRC RF 26-48
L114



CRC RF 16-27
L113



CRC RF 8-16
L112

The benefits:

- + No tool is required
- + Very short installation time



Installation video available on www.michaud-export.com
(tab Documentation > Installation videos)

Description

- Cable caps are made of elastomer material very elastic, flexible, resistant and treated to ensure a good protection to UV.
- Cable caps are available in 4 dimensions:
 - For service cable of 1.5 up to 10mm² (L112),
 - For service cable of 16 up to 35mm² and peripheral three phase neutral (L113),
 - For network cable of 50 up to 150mm² (L114),
 - For network cable of 240mm² (L115).



Installation

- Make sure that the cable end is cleanly cut. If not, cut it again (1).
- Put the seal cap on the conductor end (2).
- Remove the applicator ring until total cap shrinking on the conductor (3).



Code	Designation	Capacity (mm ²)	Covered diameter (mm)	Weight (kg)	Sales unit
L112	SEAL CAP CRC RF 8-16	2x1.5 up to 2x10 or 4x1.5 up to 4x6	8 to 16	0.026	10
L113	SEAL CAP CRC RF 16-27	LV: 4x16M* up to 4x35M*	16 to 27	0.050	10
L114	SEAL CAP CRC RF 26-48	LV: 4x50 up to 3x150 + 95M* HV: 50 up to 240	26 to 48	0.070	10
L115	SEAL CAP CRC RF 46-80	LV: 3x240 + 120M* HV: 630 up to 1200	46 to 80	0.102	10

* M means that the conductor core is solid.

Implementation

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 for use

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.

For further information:
www.michaud-export.com

1. APPLICATION OF CONDITIONS:

Purchaser make himself acquainted with these general selling conditions which shall lay down the Parties law, except purchaser's written denunciation ratified by MICHAUD EXPORT and despite opposite clauses that could be included in the purchaser's general conditions. Possible renunciation of one or few clauses herein does not interfere with the validity of the other clauses. Except any formal and express derogation made by MICHAUD EXPORT, all purchaser's orders carry off his full and entire consent to the present General Selling Conditions which prevail over any Purchasing Conditions. All particular purchasing clauses or conditions aiming to modify the present conditions must not be contrary to the seller's ones.

2. ORDER:

Any order shall not constitute a contract unless accepted in writing by MICHAUD EXPORT.

3. PRICE LIST:

- 3.1 Unless otherwise stated by MICHAUD EXPORT, price lists and commercial offers are established in Euro €, excluding any other currency, even Euro indexed currencies, and is governed by Incoterms 2010 to be defined with the purchaser in the particular conditions.
- 3.2 The price list is established for standard items with specific given technical characteristics. Any technical changes on products to adapt them to other specifications or standards may lead to extra unit costs and price revision.
- 3.3 Unless otherwise stated by MICHAUD EXPORT, MICHAUD EXPORT reserves the right to gather purchaser's orders and to deal with according to a minimum invoice amount of 800 € excluding tax and freight charges (according to general price list in due force on the order date). Any order which amount is lower than 1 500 € shall result in the invoicing of a fixed sum of 150 € meant to cover administrative fees.
- 3.4 Unless otherwise stated and written by MICHAUD EXPORT, validity of the price list is one month starting when given to the purchaser.
- 3.5 The price list is subject to alteration without notice.

4. DELIVERY TIME:

- 4.1 The delivery time is defined as the case may be according to the commercial relationships established with the purchaser. MICHAUD EXPORT use their best endeavours to deliver the goods by the time fixed for delivery, however, in case of delay, they will not be responsible for any loss or damage thereby caused to the purchaser unless expressly accepted in writing by MICHAUD EXPORT.
- 4.2 Should partial or delayed deliveries occur, it does not justify any cancellation of purchaser's orders, and MICHAUD EXPORT shall not be liable and responsible for any actual or potential, direct or indirect, or consequential damages caused to the purchaser through delay or by failing on deliveries.

5. DISPATCH:

- 5.1 MICHAUD EXPORT use their best endeavours to select appropriate method of delivery with no responsibility on it. Choice shall be made freely unless purchaser's contrary notice who then support following additional cost that may follow.
- 5.2 Ex-works delivery is considered as an effective delivery, notably regarding modalities and payment terms.
- 5.3 Partial loss or damage during in transit must be reported to the carrier and to MICHAUD EXPORT in writing by registered letter with proof of delivery within three days after receipt of the goods by the purchaser. If these conditions are not complied with, the purchaser will be responsible for any loss or damage that may occur during transit. The purchaser commits to return to MICHAUD EXPORT at his own costs and risks the products he rejected during his check-up for due investigation. The purchaser agrees that MICHAUD EXPORT shall return the products at the purchaser's cost and risks after examination or any possible repair or replacement.

6. USE OF THE PRODUCTS:

The purchaser has to follow imperatively the laws, current prescriptions in due force and custom rules regarding instruction procedures and use of the products. MICHAUD EXPORT shall not be responsible in case of wrong use of the products according to the specifications and prescriptions of use advised by MICHAUD EXPORT.

7. TESTING AND INSPECTION:

When testing and/or inspection is required by the purchaser, tests shall be carried out at MICHAUD SA's facilities, and relevant costs shall be covered by the purchaser, unless any exemption agreed and approved by MICHAUD EXPORT.

8. WARRANTY:

- 8.1 MICHAUD EXPORT guarantees the purchaser against latent defect of the goods according to the conditions driven by the law. Once a guaranteed shortcoming is stated by the buyer, it is up to him to send his reclamation to MICHAUD EXPORT with a registered letter with proof of delivery within a time limit of three months starting from the fault's appearance. This reclamation has to be accompanied by a detailed description of the fault's nature. After this period of time the goods delivered shall be deemed as in good condition and the purchaser is no longer entitled to make a complaint about any defect on the products.
- 8.2 MICHAUD EXPORT guarantees its products for a period of one year after delivery or shifting from our facilities. In case of fault, defect, non-conformity proved or admitted by MICHAUD EXPORT, MICHAUD EXPORT undertakes to replace the products admitted defective in reasonable time. In order to be replaced, rejected products shall be returned. No other prejudice of damage shall be required by the purchaser.
- 8.3 The guarantee is excluding the followings:
 - If the product has been repaired or modified by the buyer or by third parties chosen by him ; or
 - If it concerns items that have been made by sub-contractors or MICHAUD EXPORT

suppliers to whom the normal producer or Subcontractor guaranty applies ; or
- If the defect is coming from the buyer's negligence, or recklessness ; or
- If the defect is the result of a force majeure or of an external event.

9. TAKING BACK OF THE PRODUCTS:

In case the purchaser renounces to the ordered and delivered products, no taking back will be considered unless expressly accepted in writing by MICHAUD EXPORT. Rejected goods shall be sent back to the French plant defined by MICHAUD EXPORT. Credit of the sent back goods will be registered after receipt in the warehouse. Taking back value will systematically take into consideration a reduction to be defined for administrative and check-up cost as well as a reduction for restoration of the product and packaging if necessary.

10. PAYMENT:

- 10.1 Payment terms are defined with the purchaser in the particular conditions. All goods shall be paid to the MICHAUD EXPORT head office located in Viriat France whatever the payment terms used. Invoice date shall be the starting point of the settlement period.
- 10.2 Legal property transfer of the goods shall be retained until full payment of the whole sold goods. MICHAUD EXPORT keep the property of the goods until full payment of their price, sending bank drafts or any other bond notes building payment obligation not constituting a payment.
- 10.3 Any unpaid draft or invoice being at maturity will produce due interest, without giving notice. Applicable penalties shall be equivalent to three times the legal interest rate at the payment date located on the invoice. Payment of any other sums owed by the failing debtor shall be immediately payable, even if they are accepted draft. Any full or partial non-execution by the Customer of the payment obligations or any delay in payment shall, without prejudice to any damages and interests, lead to the payment of fees of 40 € for collection charges set down by decret made pursuant to the section 121 of this act. Moreover, MICHAUD EXPORT keep the right, in that case, to suspend or cancel fulfilment of the contracts and pending orders and demand cash in advance payment of any other delivery, whatsoever past conditions agreed for such delivery.
- 10.4 Any change in the purchaser situation regarding sale or other party's investment in the business, decease, incompetence, suspension of payment, official recovery, official receivership, temporary proceedings suspension, dissolution or form modification, even after partial fulfilment of the contracts or pending orders entails application of the same conditions as the ones described in case of unpaid invoice.

11. FORCE MAJEURE:

Neither MICHAUD EXPORT nor the buyer can be held responsible for a possible delay or lack in their obligations' execution, if this delay or lack is the result of a force majeure. A force majeure exists notably in the following situations, if they present certain characteristics of a force majeure, this means if the event was irresistible, unforeseeable, and externally provoked. This non-exhaustive list enumerates some situations which constitute a force majeure: explosions, fires, incidents, destruction of machinery, factories and equipment, natural disasters, acts by governmental authorities (refusing or cancellation of a license ...), wars, or any acts of war, flooding, riots, or social conflicts.

The party that faces such a circumstance which responds to the above given definition must immediately inform in writing the other party of this intervention and when this circumstance possibly ends. In the case of absence of information, the concerned party can not prevail over, unless in the case of intervening circumstances, which also prevent any communication.

Where a force majeure case which responds to the above definition intervenes, the time for the contract's execution is prolonged for a period of time corresponding to the event's duration. This does not include any payment of damages and interest or a penalty for the delay. However if the above mentioned circumstances do persist for a period of time of 6 months, each party can cancel the contract without any payment of damages and interest.

12. CANCELLATION:

The contract is cancelled by law, without the need of any judicial formality where there are serious shortcomings by one of the parties concerning essential obligations. Cancellation would become effective within one month after the mailing of a registered letter with proof of delivery of an earlier made formal notice which stayed unfruitful.

The essential obligations, which the parties have to fulfill, notably consist of the due payment by the buyer or the merchandise's non-delivery by MICHAUD EXPORT. In case of a serious shortcoming to the contract's essential obligations, the sale will be cancelled in good law without prejudice of damages and interest that can be claimed.

Any tolerance that one party allows the other not to prevail immediately over one of its rights, will not prejudice the party's rights to prevail over them later, except in case of a contrary convention or stipulation to the present conditions.

13. JURISDICTION ATTRIBUTION:

These General Selling Conditions shall be ruled and governed by the French Law as followed by the courts. Any dispute deriving from these General Selling Conditions, after failure of a previous conciliation procedure shall be of the exclusive French jurisdiction of the competent Commercial Court of Lyon located in France. Each party accepts to bear any costs and expenses it would have exposed.

14. OFFICIAL LANGUAGE:

The French version of these general selling conditions, available upon enquiry, is the only legally acceptable version.



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International expert in electrical distribution, **Michaud Export** designs, develops and implements reliable systems reducing maintenance operations on distribution networks.

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