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# The world of electrical safety





*Electrical safety,  
for pros like you!*

*Now more than ever, working safely is essential for all professionals in the electrical industry. In Europe and in the rest of the world, new clearances allow a larger population of people to perform electrical and non-electrical work on or around installations and structures, in compliance with prevention rules.*

*This major change, supports better risk analysis and strict adherence to the supervision chain, in order to further improve operator safety.*

*From this standpoint, CATU is fully committed to supporting you in these changes.*

*Firstly, with many new products designed and produced by our teams for you.*

*Next, with a completely redesigned catalogue that focuses on our products, their functions, and their use.*

*Finally, with new educational tools, including our convenient guides that provide simple and helpful information.*

*It's time to work with lasting safety, and we are here to help you, the Pros!*

***Thank you for your confidence in us!***

**Alain Fourcade**

**Managing Director, CATU**














IEC



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ACCREDITATION  
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# IEC Standard



International Electrotechnical Commission is a worldwide organization for standardization comprising national electrotechnical committees (NC). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical fields. These standards have been approved by more than 50 different countries including Australia, Canada, China, France, Germany, Japan, Russia, Malaysia, Singapore, Mexico, India, Indonesia, South Africa, New Zealand, USA...

A rapid need to perform electrical operations evolved with the time.

This resulted in regional or national working on specific standards without coordination.

IEC standards were developed according to a consensus procedure and approved by recognized body. They provide an adequate answer at worldwide level.

## The IEC standard presents benefits to all parties involved:

- for the end-users: it is the guarantee of a suitable and internationally recognized quality equipment,
- for the Testing Laboratories: it determines better standards of testing and control procedures for materials,
- for the manufacturers: it helps them to make a better technico-commercial offer.

**CATU** Designs, tests and manufactures under the IEC requirements.

**CATU** Is the first manufacturer to provide a full range of products complying with the IEC standards.

**CATU** Shows its innovation ability for the welfare of the electrical world.

# Personal and collective protective equipment

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## PPE, CPE : key advantages in risk prevention.

### PPE : Personal Protective Equipment.

**PPE** are defined as any device or means intended to be worn or held by one person to protect itself against one or several risks liable to threaten its safety or its security.

### CPE: Collective protective equipment.

Collective protective equipment for preventing electrical hazards contains all the products that close off the hazard by:

- Distance (marking, signs),
- Obstacles (covers, screen, barrier),
- Insulation (insulating blankets, insulating caps, etc.).

**CPE must comply with the standards in force.**

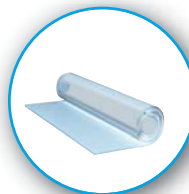
### PPE within the framework of electrical safety recommendations.

"Personal Protective Equipment is used to protect individuals who work on or near an installation that presents an electrical hazard."

Equipment complying with the standards in force and appropriate for the type of operation and voltage level of the installation must be used.

### PPE check

- Every PPE must be verified at least visually before and after every use.
- Regular tests must be made by qualified persons and at least annually.
- If the slightest doubt exists the equipment must be reformed and replaced at once.



### REGULATIONS

The personal protective equipment have to be in compliance with the requirements of the European Directive :

**89/391/CEE**, on the introduction of measures to encourage improvements in the safety and health of workers at work.

**89/655/CEE** and **89/656/CEE**, on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace.

**89/686/CEE**, on the approximation of the laws of the Member States relating to personal protective equipment (CE marking).



In practice, they define:

- The protections adapted to the kind of risk,
- The highest level of protection possible,
- The comfort, the ergonomics and the quality of the equipment,
- The annual verification of PPE by a competent individual.

*The obligations for using PPEs in companies are defined by the European Directive 89/656.*

### THE RESPONSIBILITY OF THE EMPLOYER

- To give free of charge and in a personal way equipment necessary and adapted to the risks,
- To watch over their actual use,
- To ensure the necessary replacement as well as the maintenance and the compliance,
- To inform the users of the risks against whom they are protected.

## Safety glasses

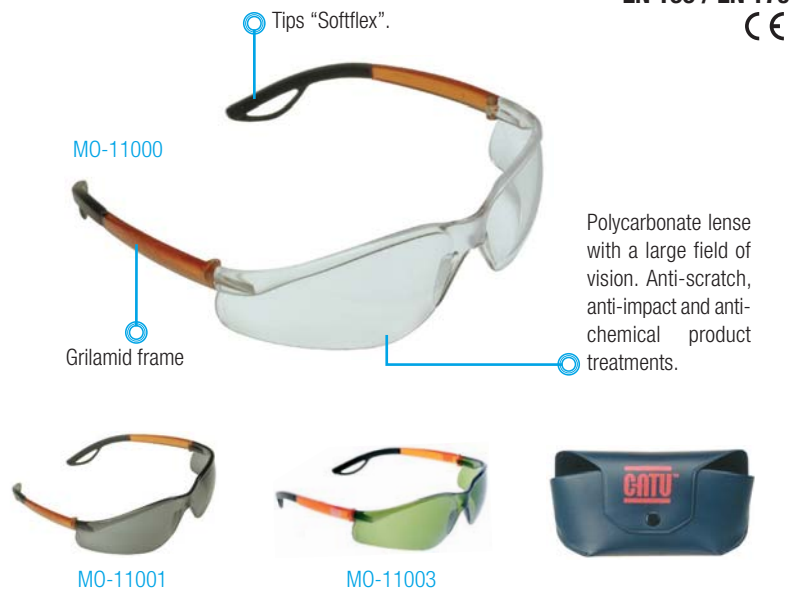
Protection against UV radiation and **ejections of solid particles**.

Reference	Characteristics	UV protection	Resistance
MO-11000	Clear lenses	99.5 % < 370 nm	<b>Level F</b> Impact: 6 mm steel ball launched at 45 m/s
MO-11001	Tinted lenses	99.5 % < 370 nm	
MO-11003 *	Tinted lenses	UV/IR protection, welding filter	

Delivered in storage bag.  
\* EN 169 - 80 °C - FT HTA N°127.



**Caution: Do not use for welding operations.**



## Overglasses

Polycarbonate overglasses. Protection against UV radiation and **ejections of solid particles**.

Reference	Characteristics	UV protection	Resistance
MO-11010	Clear lenses	100 % 180 < 400 nm	<b>Level F</b> Impact: 6 mm steel ball launched at 45 m/s
MO-11011	Green tinted lenses	100 % 180 < 400 nm	

Delivered in storage bag.



**Caution: Do not use for welding operations.**

One piece wraparound protection that can be worn over eyeglasses.



## Face shield

Protection against electric short-circuit arcs. Face shield adjustable on MO-182 helmet.

Reference	UV protection	mm	g
MO-184	100%	470 x 200	170



**Caution: Do not use for welding operations.**







## Head protection

### Face shield

Protective screen that can be used without a helmet.  
**Protection against electric arcs of short-circuits.**  
 Marking: 2-1.2 CATU 1 B 8 1 000 V.

Reference	Characteristics	mm	g
MO-186	Clear face shield	450 x 210	350
M-881635	Spare face shield	For MO-186	350
M-952206	Spare strap for MO-186		



**Caution: Do not use for welding operations.**

Head fit adjustment by milled wheel.



Polycarbonate face shield. Anti-mist treatment.

EN 166 / EN 170  
CE

### ABS helmet

Safety industrial helmet. Standard sizes 53 to 63.  
 Leather trim 21 cm along the inside for added comfort.  
 Multiple adjustments for a perfect fit headband.

Reference	Characteristics	g
MO-182/1-B	WHITE	300
MO-182/1-R	RED	300
MO-182/1-J	YELLOW	300

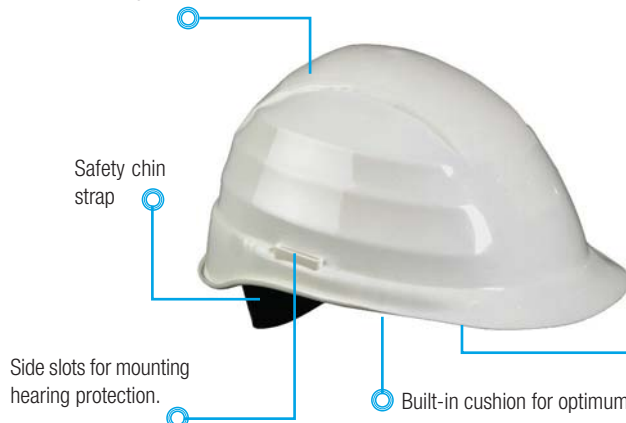


MO-182/1-R



MO-182/1-J

Deformable shock-resistant helmet with a "gutter" brim.  
 Size from 53 to 62 cm.  
 Lightweight with a comfort lining



Safety chin strap

Side slots for mounting hearing protection.

Built-in cushion for optimum ventilation.

Multiple adjustments for a perfect fit headband: adjustable in 3 mm increments.

EN 397 440 V  
 EN 50365 1 000 V  
 ANSI Z89.1 20 000 V  
 CE

### Polycarbonate helmet

Protects against vertical and side impacts, very well ventilated. Improved comfort.  
 Adjustable size from 53 to 63 cm.

Reference	Characteristics	g
MO-183-BL	WHITE	455
MO-183-RL	RED	455



MO-183-RL

Deformable shock-resistant helmet.

Head fit adjustment by milled wheel.



Chinstrap with an easy adjustment buckle. Designed to tear if hooked. (< 25 daN).

6-point cloth lining.

EN 12492  
 EN 397 440 V  
 EN 50365 1 000 V  
 ANSI Z89.1 20 000 V  
 CE

## Helmet with built-in face shield

Industrial helmet with integrated face shield






**Approved for protection against electric arcs.**

Electrical isolation **1000 V**.

EN 166 / EN 170 / EN 397

EN 50365  $\Delta$  1000 V



Reference	Characteristics	UV protection
MO-185-BL	WHITE 	100%
MO-185-R	RED 	100%
MO-185-J	YELLOW 	100%
MO-185-B	BLUE 	100%
MO-185-BLM	WHITE  + Chinstrap with a chin	100%



MO-185-R



MO-185-B

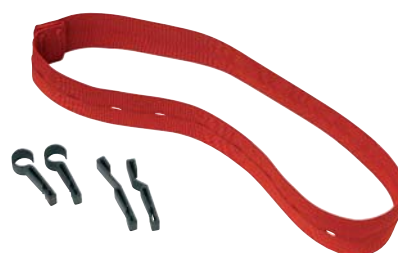


MO-185-J



## Accessories

Reference	Characteristics
M-881622	Spare complete set <a href="#">MO-185</a>
M-881836	Spare padded headband <a href="#">MO-185</a>
M-881835	Chinstrap replacement with chin for <a href="#">MO-185</a>
M-881837	<b>RED</b> headband + 4 hooks
M-881838	<b>RED/WHITE</b> velcro for identification
M-87384	Cover for <a href="#">MO-182</a> , <a href="#">MO-183</a> , <a href="#">MO-184</a> , <a href="#">MO-185</a> for <a href="#">MO-186</a> BLACK fabric cover for transporting and protecting helmets and shields



M-881837



M-881838



M-87384





CE

## LED's headlamp (4 LED's)

Can be carried either on the head or any kind of helmet.

Reference	Characteristics	Sealing	
MS-124	5 led's headlamp	IPX7	75



Adhesive clip supplied to attach to helmet or shield.

Powered by 1 battery  
AA LR6: 20 hours.

Lumens max.:  
**34 Lumens.**

Light wiring for a **wide, short-distance beam** or a **long-range directional beam**, or a combination of the two for optimal lighting. 1 flash mode. Range **32 m.**



## LED's headlamp

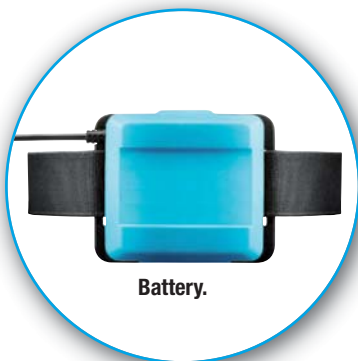
Can be carried either on the head or any kind of helmet.

Extra large stray.

The external battery 4-pack can be carried in a pocket or around the waist.

Reference	Characteristics	Sealing	
MS-125	Headlamp	IPX6	80

Adhesive clip supplied to attach to a helmet.



**Battery.**

Power by 1 battery:  
30 h.

Lumens max.:  
**145 Lumens.**

Lighting current for a wide, **short distance beam**, or a **long-range directional**, or the combination of the two for 1 flash mode. Range: **75 m.**



# Insulating rubber gloves

An essential choice for safety!

## Compliance.

Insulating gloves offer personal protection against electrical shocks when working on or near live wires.

They must comply with the **IEC 60903** and **EN 60903** standards. As a result, they undergo various voltage, ageing, and mechanical testing.

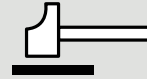
The gloves are individually tested and sold in a sealed plastic bag.



## CHARACTERISTICS OF SYMBOLS



- Label with a double triangle symbol IEC 60 417-5216, suitable for work on live wires.



- Label with a mechanical hammer symbol, indicating composite gloves.



All our gloves provide greater comfort and hygiene when used.



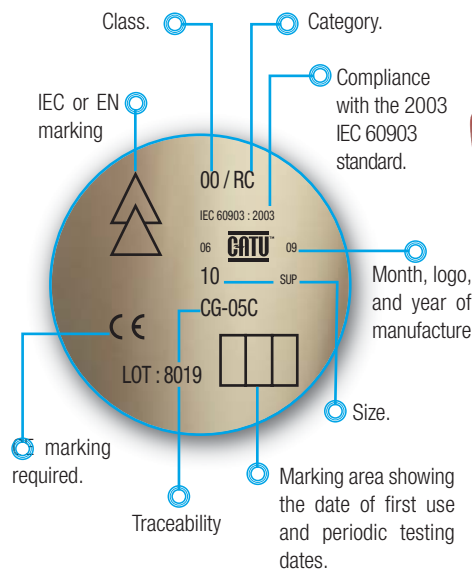
## Glove Types, Classes, and Categories.

There are **2 main types of insulating gloves**:

- **Latex gloves** provide high dielectric performance. They must be used with leather glove covers for mechanical protection.
- **Composite** gloves offer superior mechanical protection against punctures and tears. They eliminate the need for **overgloves**.



CG-30



CG-02

Symbol appears only on composite gloves

- **Insulating gloves** should be chosen according to their class, which corresponds the voltage level used.

Class	AC	DC
00	500 V <sub>effective</sub>	750 V
0	1 000 V <sub>effective</sub>	1 500 V
1	7 500 V <sub>effective</sub>	11 250 V
2	17 000 V <sub>effective</sub>	25 500 V
3	26 500 V <sub>effective</sub>	39 750 V
4	36 000 V <sub>effective</sub>	54 000 V

- **Insulating gloves** can have other environmental resistance properties, and they are classified into categories.

Category	Resisting in
A	Acid
H	Oil
Z	Ozone
R	Acid, Oil, and Ozone
C	Very low temperature

**Note 1:** Category R combines the characteristics of Categories A, H, and Z.

**Note 2:** Any category combination may be used.



## Inspection and Storage of Insulating Gloves.



All insulating gloves must be visible inspected after inflation and before each use.

For **Classes 0 and 00**: The tests consist of an air inflation test and a visual inspection when the glove is inflated. The dielectric test is not required, but it may be performed at the owner's request.

For **Classes 1, 2, 3, and 4**: Even when in storage, a glove cannot be used without having been tested within the last six months. Normal testing periods are between 30 and 90 days.

An inspection of the inside of the gloves is also recommended. Gloves should be stored in their packaging, without being compressed or folded. They should not be stored near a heat source with a temperature of 10 to 21°C.

## Insulating Latex Gloves

EN 60903 / IEC 60903

Gloves without mechanical protection for use with silicon leather glove covers.

Reference	Class	Voltage	Thickness max. mm	Category		
CG-05- <sup>(*)</sup>	00	≤ 500 V	0.5	AZC	360	150
CG-10- <sup>(*)</sup>	0	≤ 1 000 V	1	RC	360	220
CG-15- <sup>(*)</sup>	1	≤ 7 500 V	1.5	RC	360	270
CG-20- <sup>(*)</sup>	2	≤ 17 000 V	2.3	RC	360	450
CG-30- <sup>(*)</sup>	3	≤ 26 500 V	2.9	RC	360	560
CG-40- <sup>(*)</sup>	4	≤ 36 000 V	3.6	AZC	410	800

<sup>(\*)</sup> Reference to be completed by size A, B, C ou D.

CG-05 to CG-20 : A, B, C, D.

CG-30 : B, C, D.

CG-40 : C, D.



Class 00

Class 0

Class 1

Class 2

Class 3

Class 4



## Insulating latex glove to glove cover size conversion table

GLOVES	GLOVES Reference	GLOVES Size	OVERGLOVES	OVERGLOVES Reference	OVERGLOVES Size
	CG-05- <sup>(*)</sup> CG-10- <sup>(*)</sup>	A = 8		CG-98- <sup>(*)</sup>	A = 8
		B = 9			B = 9
		C = 10			C = 10
		D = 11			D = 11
	CG-15- <sup>(*)</sup> CG-20- <sup>(*)</sup> CG-30- <sup>(*)</sup> CG-40- <sup>(*)</sup>	A = 8		CG-99- <sup>(**)</sup>	C = 10
		B = 9			D = 11
		C = 10			E = 12
		D = 11			

<sup>(\*)</sup> References to be completed by size A, B, C or D.

<sup>(\*\*)</sup> References to be completed by size C, D or E.

Total length

Weight



**CATU**

## Composite gloves

EN 60903 / IEC 60903 



Insulating gloves with higher mechanical properties for working in full safety without leather overgloves.

### Conventional gloves

Reference	Class	Voltage	Thickness max. mm	Cat.		
CG-02- <sup>(*)</sup>	00	≤ 500 V	1.8	RC	360	300
CG-12- <sup>(*)</sup>	0	≤ 1 000 V	2.3	RC	360	350
CG-16- <sup>(**)</sup>	1	≤ 7 500 V	2.8	RC	410	580
CG-22- <sup>(**)</sup>	2	≤ 17 000 V	3.3	RC	410	620

<sup>(\*)</sup> References to be completed by size A, B, C, or D.  
<sup>(\*\*)</sup> References to be completed by size B, C, or D.

### Long Gloves

Reference	Class	Voltage	Thickness max. mm	Cat.		
CGL-20- <sup>(*)</sup>	2	≤ 17 000 V	3.3	AZC	800	1 800
CGL-30- <sup>(*)</sup>	3	≤ 26 500 V	3.6	AZC	800	2 040

<sup>(\*)</sup> References to be completed by size B or C.




Long composite gloves for insulating the hand and arm.

## Insulating gloves "arc flash"

See page 27.

## Pneumatic glove tester

For compulsory control of gloves before use.  
 Checking is done by inflating and immersing in water.


Reference	Characteristics	
CG-117 *	Pneumatic glove tester	600

\* Delivered in cardboard 140 x 150 x 160.



## Gloves box

Specially designed for protecting insulating gloves.  
 Can be fixed on wall.

Reference		
CG-35/2 *	101 x 224 x 476	770

\* Includes a bottle of talcum powder and precautions for use on tape positioned according to the language (English, French, Spanish, German, Italian, Portuguese, Arabic dutch, Chinese, Russian).

Recommended maintenance reminders.



The transparent cover enables to check gloves presence. UV resistant.

 Total length

 Dimensions

 Weight

**CATU**



## Insulating gloves

### Carrying bag

Reference	mm	Characteristics
CG-36/1	100 x 210 x 430	1 gusset
CG-36/2	100 x 220 x 440	2 gussets to separate the insulated gloves and overgloves

Made from reinforced waterproof fabric for transport of rubber gloves in vehicles and tool boxes.



Rear loop for belt and snaps.

CG-36/1

### Overgloves

Mechanical and electric arc protection.

Reference	Size	g
CG-98- <sup>(*)</sup>	A = 8	160
	B = 9	
	C = 10	
	D = 11	
CG-99- <sup>(*)</sup>	C = 10	200
	D = 11	
	E = 12	

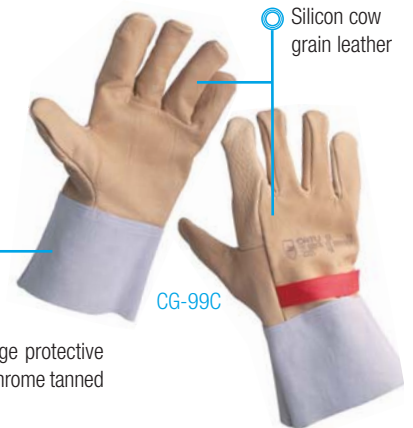
<sup>(\*)</sup> References to be completed by size A, B, C or D. See the conversion table page 21 for the correct size based on the insulated glove.



Silicon grain leather, very flexible.

EN 388 / IEC 388  
EN 420 CE

3122



Silicon cow grain leather

Large protective cuff in chrome tanned hide.

2121

### Undergloves Nomex III<sup>®</sup>

See page 27.

### Undergloves

These washable cotton undergloves improve the use of the insulating gloves. They bring the best held, hygiene and a greater comfort.

Reference	Size	g
CG-80- <sup>(*)</sup>	H = Men F = Women	28

<sup>(\*)</sup> References to be completed by size H ou F.

Washable cotton undergloves.



CE

### Mittens

Its fingerless gloves shape allowing to keep the maximum of dexterity.

Reference	Size	g
CG-81	One size	20

Cotton mittens, limit the effects of perspiration and its fingerless gloves shape allowing to keep the maximum of dexterity.



CE



## Insulating boots

Protection against step and touch hazardous potential gradients.

Reference	Voltage	Standards
MV-135-(*)	20 000 V	ISO EN 20345
MV-134-(*)	1 000 V	ISO EN 20347 EN 50321 - Classe 0 EN 13287

(\*) Add sizes: 39, 40/41, 42, 43, 44, 45, 46/47, 48, 49/50.  
Example: MV-135-40/41.



## Insulating mats

### Individual models

Reference	Class	Voltage	Thickness mm	mm	g
MP-42/11	3	≤ 26.5 kV	3	1 000 x 1 000	4 500
MP-42/16	3	≤ 26.5 kV	3	600 x 1 000	2 900
MP-42/66	3	≤ 26.5 kV	3	600 x 600	1 800

### For placing in front of panels

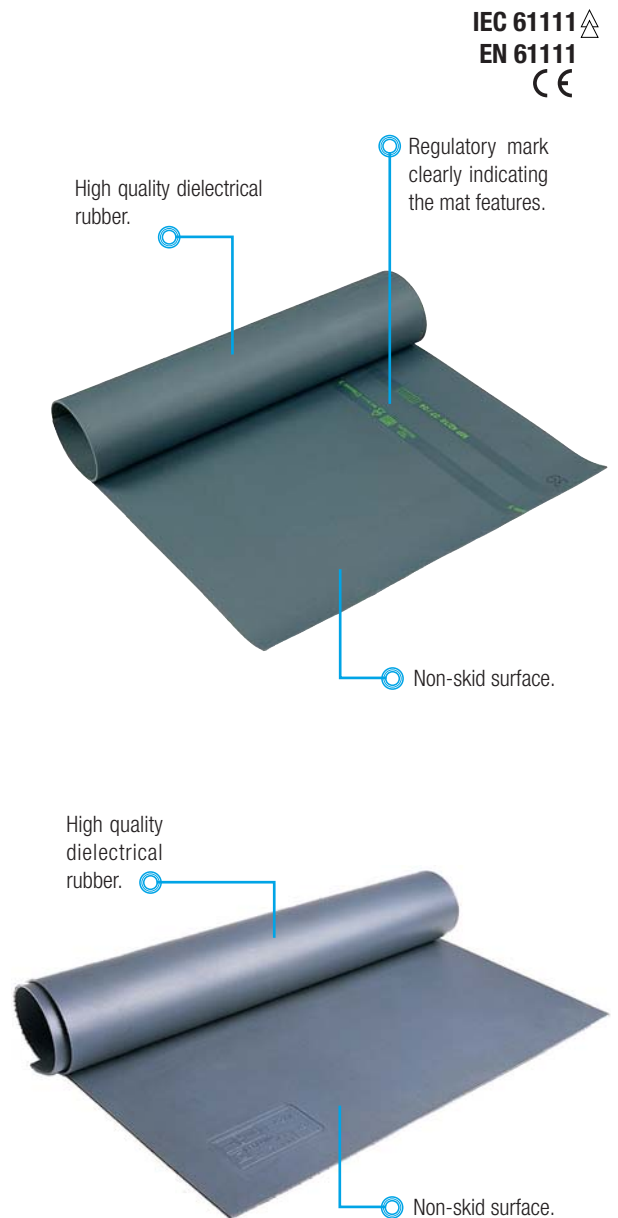
Reference	Class	Voltage	Thickness mm	mm	g
MP-60/03-5	3	≤ 26.5 kV	3	600 x 5 000	14 000
MP-60/03-10	3	≤ 26.5 kV	3	600 x 10 000	28 000
MP-100/03-5	3	≤ 26.5 kV	3	1 000 x 5 000	25 000
MP-100/03-10	3	≤ 26.5 kV	3	1 000 x 10 000	53 500
MP-60/05-5	4	≤ 36 kV	5	600 x 5 000	28 000
MP-60/05-10	4	≤ 36 kV	5	600 x 10 000	44 000
MP-100/05-5	4	≤ 36 kV	5	1 000 x 5 000	45 000
MP-100/05-10	4	≤ 36 kV	5	1 000 x 10 000	89 000

## Insulating mats

Adapted to **High Voltage**.

Reference	Thickness mm	mm	g
MP-100/10-5	10	1 000 x 5 000	87 000
MP-100/10-10	10	1 000 x 10 000	154 000

Contact us for any particular application.





## Accessories and insulating platforms

### Multi-pockets electrician bag

Specially designed for carrying and protecting insulating mats, face shield and controllers.

Reference	Dimensions	Weight
M-87386	650 x 150 x 250	850



### Bags for insulating mats

Specially designed for carrying and protecting insulating mats. Equipped with a shoulder strap.

Reference	Characteristics	Length
MP-01	For MP-42/16 and MP-42/66	700
MP-02	For MP-42/11	1 100



### Insulating platforms (indoor models)

Reference	Class	Rated insulation	Standards	Height mm	Weight
CT-7-25/1	4	≤ 24 kV	UNE 204 001 ≤ 36 kV	220	3 700
CT-7-40/1	5	≤ 40 kV	UNE 204 001 ≤ 45 kV	260	3 800



### Insulating platforms (indoor models)

Adapted to the B High Voltage.

Reference	Rated insulation	Height mm	Weight
CT-7-63	≤ 63 kV	515	3 350



### Insulating platform (outdoor model)

Reference	Rated insulation	Number of skirts/foot	Height mm	Weight
CT-9-25	≤ 24 kV	2	350	6 000
CT-9-45	≤ 45 kV	3	435	6 500
CT-9-63	≤ 63 kV	4	515	7 000



mm Total length

mm Dimensions

g Weight

CATU™

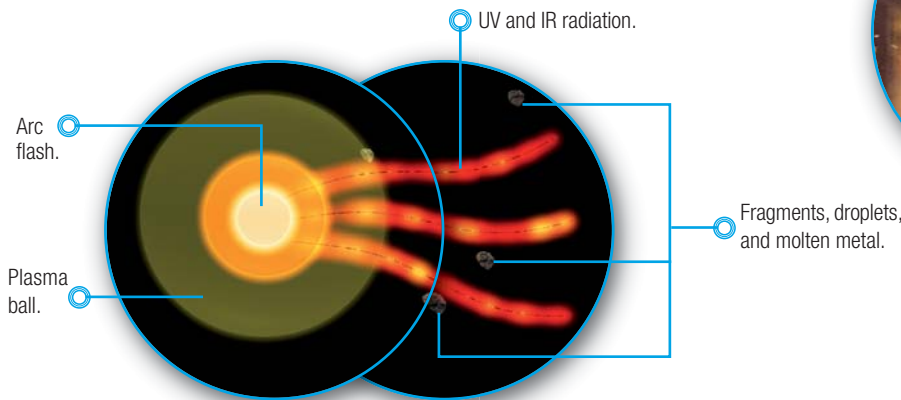


# Arc Flash Protection

the solution for complete electric arc protection

## The "Arc Flash" phenomenon.

An electric arc follows a short circuit. It produces nearly instant effects with serious consequences without proper protection.



- The arc's main manifestation is its thermal effect. The heat energy released, which is proportional to the voltage, intensity, and fault length, can be considerable (19,000°C), melting the metal and charring the insulation.
- Blast effect, caused by the very rapid release of energy in a limited volume of air (similar to an explosion).
- Light effect with high ultraviolet and infrared radiation.
- Ionisation effect that can trigger an arc on nearby active sections.

In addition to these effects, particles may be projected, and the metal may melt.

**When electric arc danger exists, heat-resistant clothing must be worn.**

**The arc's characteristics are given by:**

- **The resistance value of the free arc, expressed in cal/cm<sup>2</sup> according to NFPA 70 E, ASTM standards, and IEC 61482-1-1.**

**or**

- **The protection class (1 or 2) with a constrained arc according to IEC 61482-1-2.**

## PROTECTION AGAINST ARC FLASH

The following are used to determine the proper equipment for protecting against an electric arc:

- The maximum fault current value.
- The phase/ground rated voltage at the site of the risk.
- The distance between the source of the arc and the reception surface.
- The AC cycle number and the mono or three-phase circuit type.
- The location where the arc is produced (confined space).

After recording these parameters, we can estimate the level of risk and determine the proper protective clothing and PPE to use: **8 to 100 cal/cm<sup>2</sup> or class 1 or 2.**

For more information, please contact our technical department.



Fire-retardant clothing in case of exposure to an electric arc, confirming to **IEC 61482-2** and the regulation **NFPA 70E**.



## Insulating gloves for "Arc flash" protection

Latex insulating gloves designed especially to provide electrical insulation and heat protection from an electric arc.

Arc resistance:

- 21.6 cal/cm<sup>2</sup> according to **ASTM** (F1559 and glove standard project).
- Class 1 at 150 mm and Class 2 at 300 mm according to **IEC 61482-1-2**.

Reference	Class	Voltage	Thickness mm	Cat.	mm	g
CG-11-(* )	0	≤ 1 000 V	1	RC	360	230

(\* ) References to be completed by size A, B, C or D.

EN 60903 / IEC 60903  
CE



Two-colour latex with a life indicator (white undercoat).

## Nomex III® Undergloves

100% Nomex III® fire-resistant and heat-resistant undergloves. Protects the hands against heat of up to 100°C. Ideal protection for "arc flash" equipment.

Reference	Characteristics	Packaging	g
CG-37	One size	Includes 5 pairs	32

EN 407  
EN 420  
CE



Fire protection.

High performance synthetic Nomex III® fibre.

## "Arc flash" Gloves

Protects the hands against the heat of an electric arc of up to 65 cal/cm<sup>2</sup>.

**ASTM F 1506-02a** standard, tests according to **ASTM F1559**.  
**NFPA 70E** compliant.

Reference	Characteristics	g	mm
CG-65-CAL	One size	265	355

NFPA 70E



Outer layer Kevlar® with 2 layers made of Nomex® 33% of and Kevlar®.

## High-Visibility "Arc flash" Parka

100% waterproof parka.

Resistant to arc flash and flames.

Ideal protection for "arc flash" equipment.

19 cal/m<sup>2</sup>

**ASTM F 1891**

**ANSI 107 Class 3 Level 2**.

Reference	Characteristics	g
M-882082	One size	924

NFPA 70E

High quality tissue.

Round neckline with a hood.

Tightening velcro.

Large pockets with a Velcro flap.

Zip closure and pressure flap.



## "Arc flash" face shield kit (10 cal/cm<sup>2</sup>)

NFPA 70E

Reference	KIT-ARC-01	9
Composition	1 500	
M-881956	1 Face shield with chin cup 10 cal/cm <sup>2</sup> , absorbs > 99.9% of harmful UV radiation, 70% light transmission, tested to <b>ASTM F 2178</b> specifications	
MO-182/1-B	1 ABS helmet electrically insulated <b>EN397, EN 50365, ANSI Z89.1</b> 20kV.	
M-87384	1 carrying bag for face shield and helmet	

Electrician  
ABS helmet.

Large field  
of view.

Anti UV and IR polycarbonate 1.5 mm thickness.

Chin protection



## "Arc flash" jacket and protective coverall kits (8 or 10 cal/cm<sup>2</sup>)

IEC 61482-2  
NFPA 70E

Reference	Capacity cal/cm <sup>2</sup>	9
KIT-ARC-08-C-(*) *1	8 cal/cm <sup>2</sup>	4 100
KIT-ARC-10-C-(*) *2	10 cal/cm <sup>2</sup>	4 200
KIT-ARC-10-J-(*) *3	10 cal/cm <sup>2</sup>	3 075
KIT-ARC-10-JP-(*) *4	10 cal/cm <sup>2</sup>	4 400

### Composition of KITS

M-881956	1 Face shield with chin cup 10 cal/cm <sup>2</sup> , absorbs > 99.9% of harmful UV radiation, tested to <b>ASTM F2178</b> specifications
MO-182/1-B	1ABS helmet electrically insulated <b>EN397, EN 50365, ANSI Z89.1</b> , 20kV.
MO-11000	1 safety glasses <b>EN 166/EN 170</b>
M-881960	1 arc flash protective hood (10 cal/cm <sup>2</sup> ), only with coverall.
—	1 protective coverall 8 or 11 cal/cm <sup>2</sup> *1 , <b>ASTM F1506</b> and <b>NFPA 70E</b> Standards or 1 arc flash protective jacket 11 cal/cm <sup>2</sup> , <b>ASTM F1506</b> and <b>NFPA 70E</b> Standards.
M-87384	1 carrying bag for face shield and helmet.
M-87295	1 all kit carrying bag.

Made of Indura ultra soft®  
comfortable and light.

Coverall  
8 cal/cm<sup>2</sup>.  
or  
coverall  
12 cal/cm<sup>2</sup>.

M-87295  
Carrying bag for  
the kit.

Blue jacket 3/4  
with 12 cal/cm<sup>2</sup>.



(\*) Reference to be completed by the size M, L or XL.  
Size S to 3 XL on request.

\*1 For reference **KIT-ARC-08-C-(\*)**.

\*2 For reference **KIT-ARC-10-C-(\*)**.

\*3 For reference **KIT-ARC-10-J-(\*)**.

\*4 For reference **KIT-ARC-10-JP-(\*)**.



Trouser Arc Flash.

MO-11000  
Safety  
glasses.

M-881960  
Protective hood  
10 cal/cm<sup>2</sup>.

M-881956  
M-182/1-B  
Face shield on  
electrician helmet





## "Arc flash" protective kits (25, 40, 55, 65 or 100 cal/cm<sup>2</sup>)

IEC 61482-2   
NFPA 70E

Reference	Capacity cal/cm <sup>2</sup>	g	Color
KIT-ARC-25-B- <sup>(*)</sup> <sup>*1</sup>	25 cal/cm <sup>2</sup>	6 000	KAKI
KIT-ARC-40-B- <sup>(*)</sup> <sup>*2</sup>	40 cal/cm <sup>2</sup>	6 900	GREY
KIT-ARC-55-B- <sup>(*)</sup> <sup>*3</sup>	55 cal/cm <sup>2</sup>	8 000	GREY
KIT-ARC-65-B- <sup>(*)</sup> <sup>*4</sup>	65 cal/cm <sup>2</sup>	8 000	CAMEL
KIT-ARC-100-B- <sup>(*)</sup> <sup>*5</sup>	100 cal/cm <sup>2</sup>	8 000	CAMEL

### Composition

M-881968 <sup>*1</sup> M-881961 <sup>*2</sup> M-881973 <sup>*3</sup> M-881976 <sup>*4</sup> M-881979 <sup>*5</sup>	1 arc flash protective hood with an integrated face shield 25 <sup>*1</sup> , 40 <sup>*2</sup> , 55 <sup>*3</sup> , 65 <sup>*4</sup> or 100 <sup>*5</sup> cal/cm <sup>2</sup> , ASTM F2178 and NFPA 70E Standards
MO-182/1-B	1 ABS helmet electrically insulated EN397, EN 50365, ANSI Z89.1 20kV.
—	1 arc flash protective bib overall 25 <sup>*1</sup> , 40 <sup>*2</sup> , 55 <sup>*3</sup> , 65 <sup>*4</sup> or 100 <sup>*5</sup> cal/cm <sup>2</sup> , ASTM F1506 and NFPA 70E Standards
—	1 arc flash protective coat 25 <sup>*1</sup> , 40 <sup>*2</sup> , 55 <sup>*3</sup> , 65 <sup>*4</sup> or 100 <sup>*5</sup> cal/cm <sup>2</sup> , ASTM F1506 and NFPA 70E Standards
MO-11000	1 safety glasses EN 166/EN 170
M-87384	1 carrying bag for face shield and helmet
M-87295	1 all kit carrying bag

(<sup>\*</sup>) Reference to be completed by the size M, L or XL.  
Size S to 3 XL on request.

<sup>\*1</sup> For reference KIT-ARC-25-B-<sup>(\*)</sup>, kaki outfit.

<sup>\*2</sup> For reference KIT-ARC-40-B-<sup>(\*)</sup>, grey outfit.

<sup>\*3</sup> For reference KIT-ARC-55-B-<sup>(\*)</sup>, grey outfit.

<sup>\*4</sup> For reference KIT-ARC-65-B-<sup>(\*)</sup>, brown/camel outfit.

<sup>\*5</sup> For reference KIT-ARC-100-B-<sup>(\*)</sup>, brown/camel outfit.



KIT-ARC-25-B-<sup>(\*)</sup>

KIT-ARC-40/55-B-<sup>(\*)</sup>

KIT-ARC-65/100-B-<sup>(\*)</sup>



### Electrician coverall

Coverall without metallic part, avoiding any flash hazards. 100% cotton.

Reference	Size for Ref. (*)	Size	Chest size
MV-104/ (*)	01	40/42	85/92
	02	44/46	92/100
	03	48/50	101/108
	04	52/54	109/116
	05	56/59	117/124
	06	60/62	125/132
	07	64/66	133/140


(\*) Reference to be completed by the size, ex : MV-104/02.



### Dust-proof equipment

#### Combination



Waterproof nonwoven polypropylene, 3 layers SMS 68 g/m².

Reference	Characteristics	
M0-132	One size XL – White	240

#### Dust masks FFP3 SL

##### Mask (disposable).


Protects against dust and very fine toxic liquids and solids, **up to 50 times VL** (asbestos protection only for maintenance operations).

Reference	Characteristics		
M0-131/1	Shell mask	5	34
M0-131/2	Bendable mask	20	18





## Work Gloves

Reference	Size	
CG-96- <sup>(*)</sup>	A = 8	115
	B = 9	
	C = 10	
	D = 11	
CG-97-C	One size	115
	C = 10	

(\*) Reference to be completed by the size of A, B, C or D.

American style gloves with very soft and flexible full bloom leather allowing full finger movement.



EN 388 / IEC 388  
EN 420 


"Docker" style gloves with very soft full bloom leather allowing full finger movement.




## Noise-reduction cover for helmet

Cover with adapter for mounting over headsets **MO-182/1**.

No metal for **electrical work**.


Reference	Characteristics	
MO-155	Noise-reduction cover	200



EN 352-1  
SNR 28 dB  


## High performance noise-reduction helmet

No metal for **electrical work**.


Reference	Characteristics	
MO-156	Noise-reduction cover	178

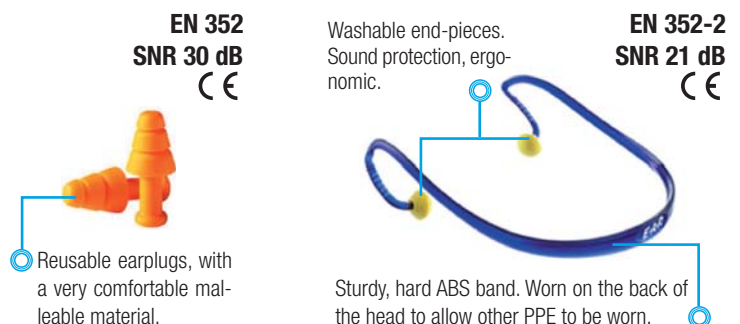


EN 352  
SNR 25 dB  



## Earplugs

Can be cleaned with soapy water.

Reference	Characteristics	
MO-151	Pair of earplugs with cord	5
MO-151/100	Pair of earplugs without cord	100
MO-152	Pair of earplugs with headband	1



EN 352  
SNR 30 dB  


EN 352-2  
SNR 21 dB  


## Safety Shoes

### MV-123

Low, derby style shoe without metal parts.

### MV-124

Heavy duty boots without metal parts.

Reference	Size	g
MV-123-(*)	from 39 to 48	900
MV-124-(*)	from 39 to 48	900

(\*) Reference to be completed by the size: 39, 40, 41, 42, 43, 44, 45, 46, 47, 48. Example: MV-123-40.



ISO EN 20345  
2007 SRC (SRA+SRB)  
PPE category 2.  
CE

## Safety Boots

Exposure to oils, hydrocarbons.

Work involving oil.

Thick soles avoiding, risk of slips and strains.

Heavy duty, manufacturing, and construction.

Reference	Size	g
MV-131-(*)	from 39 to 47	1 400

(\*) Reference to be completed by size: 39, 40, 41, 42, 43, 44, 45, 46, 47. Example: MV-131-40.



## Cold Protection Kit and Cap

### MO-157

Industrial safety cap with a fabric covered protective shell.

### MO-158

Kit to protect against harsh weather conditions, including:

- 1 acrylic helmet cap. Protects against cold inside the helmet.
- 1 yellow high-visibility neck warmer.

Reference	Characteristics	g
MO-157	safety cap	155
MO-158	universal cap	55
	neck warmer	86



**ABS** helmet materials and brushed cotton/Lycra jacket.

EN 812  
CE



EN 471  
CE



Equipment  
for working  
on pole

**ARC FLASH HARNESS**  
PLEASE CONSULT US



**CATU™**

# Work at height, a regulation in line with the European Directive.

## Regulatory perspective.

The safety equipment for working at height and their methods of use are defined by the decrees:

**No. 92-766** dated 29 July 1992: which applies the 1989 European Directive,  
**No. 2004-924** dated 1st September 2004: "decree relating to the use of work equipment made available for temporary work at height".

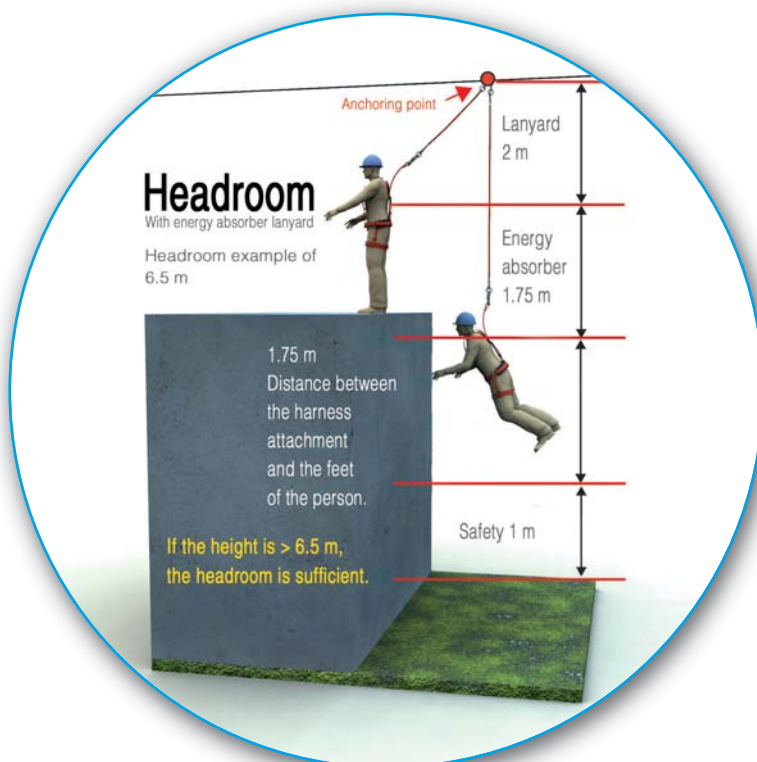
The following are defined in these decrees:

The priority is the installation of collective protective equipment. When this is not possible, the use of a device to an item of personal protective equipment against falls from a height is required, whether this is for the purposes of retaining, support, saving, or protecting against falls from a height.

**Removal of the minimum height of 3 m: After a risk evaluation, protective equipment is required as soon as there is a risk of a falling.**

- The use of access and positioning techniques by means of ropes must comply with the following: a working rope, a safety rope fitted with a fall arrestor system, with two separate anchoring points. Workers must be provided with suitable fall arrestor harnesses connected to both ropes. Safe descent/mounting systems with a self-locking system and a mobile fall prevention system must be provided.
- The work must be programmed and supervised so that assistance can be given immediately to the worker in the event of an emergency.

**The workers must receive suitable and specific training in the operations considered and in the rescue procedures.**



## KEY PRODUCT STANDARDS

- EN 353-1 .... Fall arrest grab for rigid support.
- EN 353-2 .... Fall arrest grab for flexible support.
- EN 354 ..... Restraint lanyard.
- EN 355 ..... Shock absorber lanyard.
- EN 358 ..... Work positioning systems.
- EN 360 ..... Retractable type fall arrestors.
- EN 361 ..... Fall arrest harness.
- EN 362 ..... Connectors.
- EN 363 ..... Fall arrest systems.
- EN 813 ..... Sit harnesses.



**To determine your harness size, see the table on page 147.**



## Equipment for working on pole: harness

### Pro electric full body fall arrest harness

Reference	Size	g
MO-563-(*)	S	2700
	M	
	XL	

(\*) Reference to be completed by the size (example: MO-563-XL).  
Delivered in cloth bag.



EN 358  
EN 361  
CE

### Pro electric full body fall arrest harness

Reference	Size	g
MO-565-(*)	S	3000
	M	
	XL	

(\*) Reference to be completed by the size (example: MO-565-M).  
Delivered in cloth bag.



EN 358  
EN 361  
EN 813  
CE

### Full body fall arrest harness

Reference	Size	g
MO-71	Unique size	1900

Delivered in cloth bag.



EN 358  
EN 361  
CE



## Equipment for working on pole: harness and anti-fall

### Working on pole kits

Reference	Use
<b>KIT-HAUT-01-(* )</b>	To go up a pole with insulating ladders
<b>KIT-HAUT-02-(* )</b>	To go up a pole with spliced ladders
<b>KIT-HAUT-03-(* )</b>	To go up a catenary
<b>KIT-HAUT-04-(* )</b>	To go up on a pylon
<b>KIT-HAUT-05-(* )</b>	To go up on a roof
<b>KIT-HAUT-06-(* )</b>	To go up using a nacelle

(\* ) Add size : M or XL (order example: KIT-HAUT-02-XL).

Composition	KIT-HAUT-...					
	01	02	03	04	05	06
<b>MO-563</b> Harness	•	•	•			
<b>MO-565</b> Harness				•		
<b>MO-71</b> Harness					•	•
<b>MO-52020</b> Tether rope	•					•
<b>MO-54010</b> Double tether rope		•		•	•	
<b>MO-52034</b> Constraint tie	•	•				
<b>MO-52031</b> Constraint tie				• x 2		
<b>MO-56009</b> Tether rope with tension device	•	•	•	•	•	
<b>MO-68/15</b> Anti-fall grip	•	•	•	•		
<b>MO-54</b> Snap hook	•	•				
<b>M-87-295</b> Carrying bag	•	•	•	•	•	•




### Anti-fall grip

#### “ROP CHUCK” FALL ARREST.

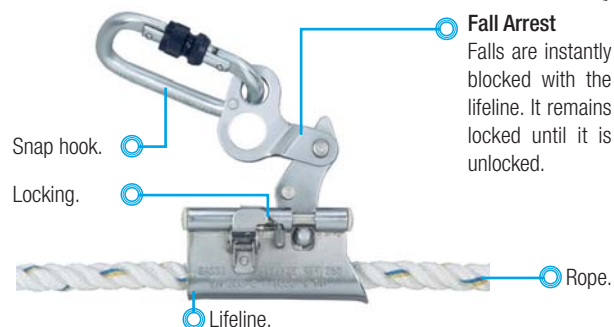
Uses special Ø 15 mm rope exclusively with a spliced upper end.

To be used with a harness.

Reference	Characteristics	 Weight
<b>MO-68/10</b>	With 10 m of rope	1 600
<b>MO-68/15</b>	With 15 m of rope	2 720

Delivered complete only.


EN 353-3  
CE





## Equipment for working on pole: anti-fall and tether

### Fall arrester retractable type


Reference	Characteristics	
<b>MO-591002</b>	Max. length: 10 m.	7 000

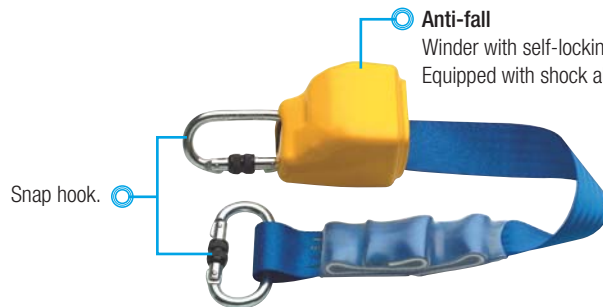


Integrated braking mechanism and dissipating element. Self locking mechanism and automatic tensioning and return facility.

EN 360

### Anti-fall device with automatic release strap


Reference	Characteristics	
<b>MO-591000</b>	Anti-fall: 2 m max.	1 160



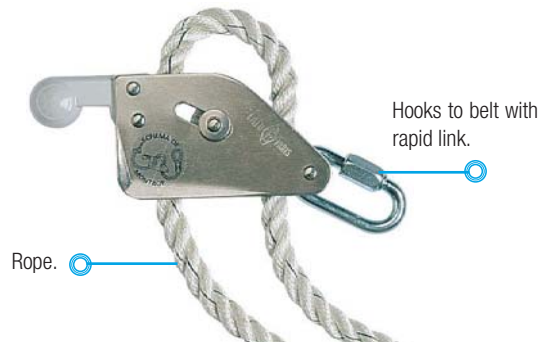
Anti-fall  
Winder with self-locking strap. Equipped with shock absorber.

EN 360  
CE

### Equipped rope straps with lever stretcher

Reference	Characteristics	
<b>MO-52-L</b>	Length: 4 m	1 000
<b>MO-61</b>	Stretcher only	450

Equipped with adjuster.






Hooks to belt with rapid link.

Rope.


EN 358  
CE

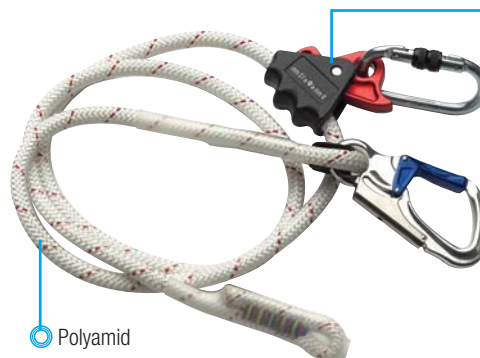
### Tether rope equipped with a tension device.

Ideal for all **horizontal works**.

Reference			
<b>MO-56009</b>	2 000	12	750
<b>MO-56010</b>	5 000	12	1 000

### Tether protector

Reference	Characteristics	
<b>MO-52-P</b>	Chrome leather sleeve	950



Tensioning device: A double-locking system instantly stops the rope.

Polyamid rope.

EN 358  
CE

 Total length

 Diameter

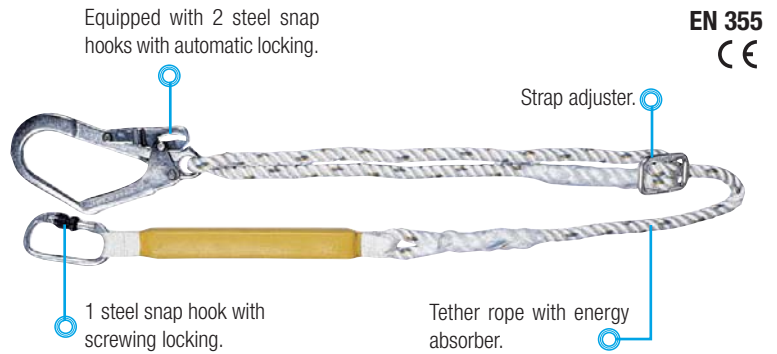
 Weight



## Equipment for working on pole: tether and safety line

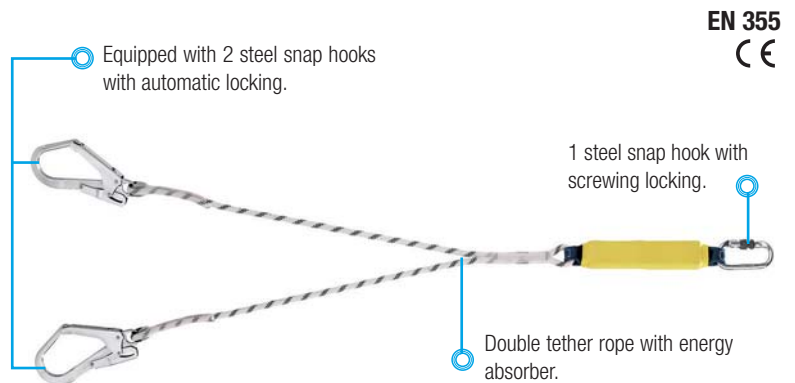
### Double tether rope with energy absorber

Reference	↔	g
MO-52020	Length: 1.5 m	1 100
MO-52021	Length: 2 m	1 200



### Double tether rope with energy absorber

Reference	↔	g
MO-54010	Length: 1.20 m	1 400



### Double lanyard

Can be connected to the harness by locking steel screw karabiners.

Reference	↔ mm	Ø mm	g
MO-53010	1 000	12	1 400



### Mobile safety line

Easy and quick to set up, this line can be used by 2 people. It is equipped with a tension device. This safety line is designed for short operations. The users can then hook themselves to the safety line using a fall arrest device or a shock absorbing lanyard. When using a shock absorbing lanyard, allow for at least 7 meters clearance.

Reference	↔	Resistance	g
MO-53002	5 to 20 m	2 000 Kg	2 820





## Equipment for working on pole: ropes and snap hooks

### Safety rope with wear tell tales

Two-colour safety rope, 100% polyester made of 3 white strands with black central thread.

Reference	↔ mm	∅ mm	g
MO-052	4000	15	760

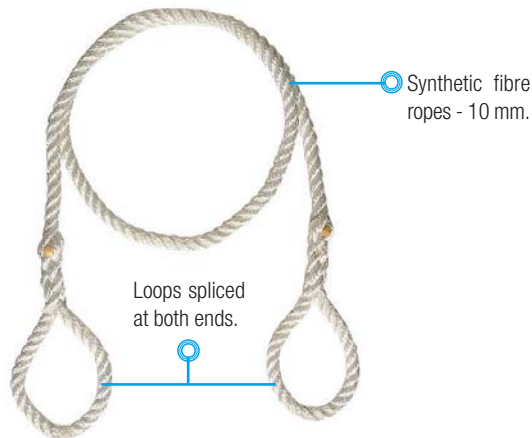


EN 354  
CE

### Lanyard

Reference	↔ mm	∅ mm	g
MO-53	1500	10	125

Delivered without snap hook.



EN 354  
CE

### Double safety descent device

Double safety manual descent device. Works on a static 11mm lanyard. Its ergonomic shape improves the self-adjusting descent.

Reference	∅ mm Lanyard	g
MD-02	11	380



EN 341-A  
CE

### Snap hook with double safety latch




Reference	↕ mm	F <sub>lim</sub> mm	g
MO-54002	50	20 kN	390



EN 362  
CE

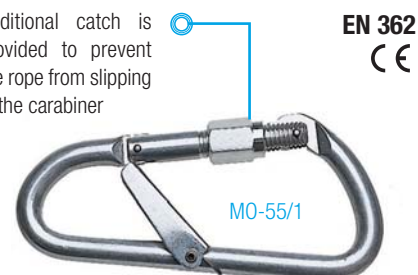
## Equipment for working on pole: snap hooks and anchoring accessories

### Snap hooks (stainless steel)




Reference	 mm	 mm	 g
MO-54	15	100 x 58	154
MO-55/1	28	155 x 75	140



Additional catch is provided to prevent the rope from slipping in the carabiner



### Snap hooks (aluminium alloy) zical

Reference	 mm	 mm	 g
MO-54000	19	110 x 58	78
MO-54004	23	120 x 72	87





D-shaped snap hook with automatic locking.

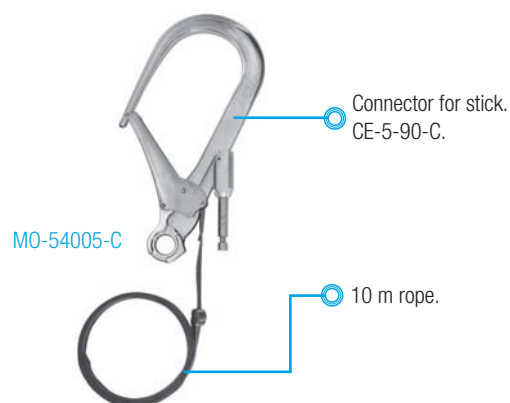


### Snap hook with stick adaptor



To fix a life line from the ground. Snap hook to be operated with a stick and unlocking using a cord.

#### Connector with stick adaptor

Reference	 mm	Type	 g
MO-54005-C	50	C End fitting	470
MO-54005-K	50	K End fitting	470





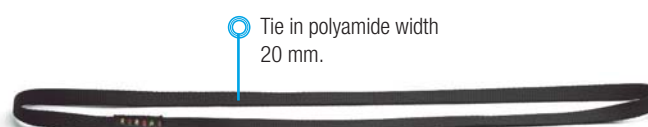
#### Telescopic stick

Reference	 mm	Type	 g
CE-5-90-C	9 m max.	C End fitting	4 000
CE-5-90-K	9 m max.	K End fitting	4 000



### Constraint tie

Reference	 mm	 g
MO-52031	0.8 m	100
MO-52033	1.20 m	135
MO-52034	1.50 m	150



 maximal opening

 Dimensions

 Weight



 Total length

**CATU™**

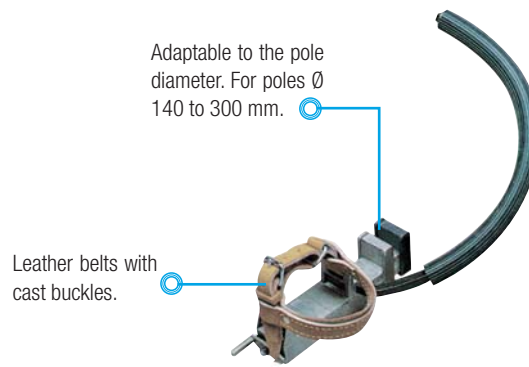


## Equipment for working on pole: climbers and accessories



### Mechanical climbers for round and hexagonal concrete poles

Reference	 Pole	
M0-16-A	140 > 300	6 500

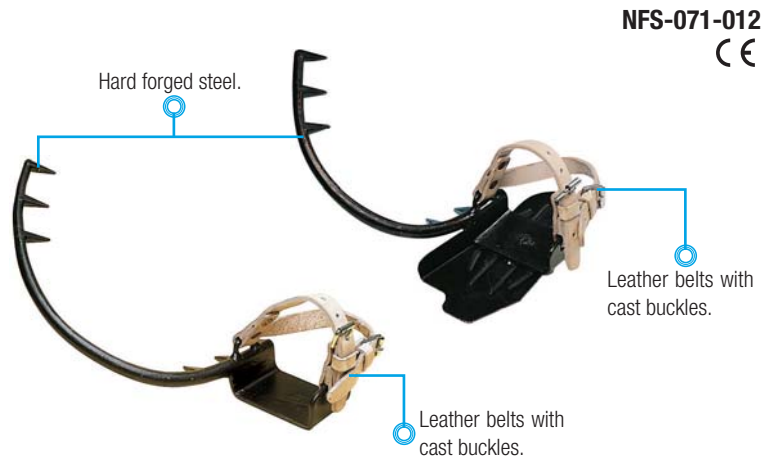
Delivered by pair.



### Forged steel climbers for round wooden poles


Reference	 Pole	
M0-24	200	2 600
M0-25	250	2 800
M0-26	300	3 000
M0-35	350	3 200

Delivered by pair.

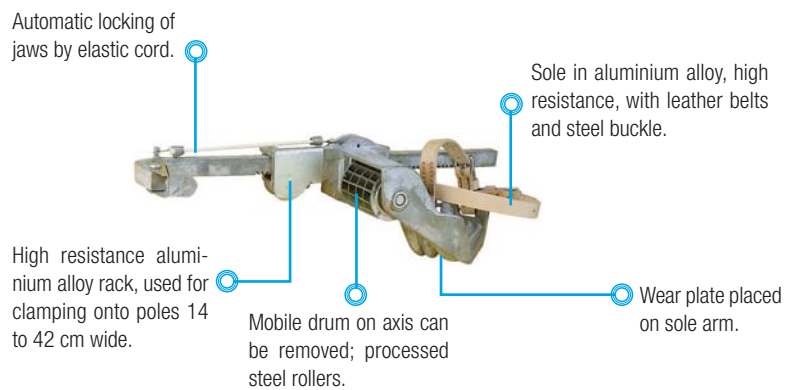


### Mechanical climbers for rectangular shaped concrete poles

For rectangular shaped concrete poles

Reference	Pole width	
M0-17-A	14 à 42 cm	9 000



Delivered by pair.

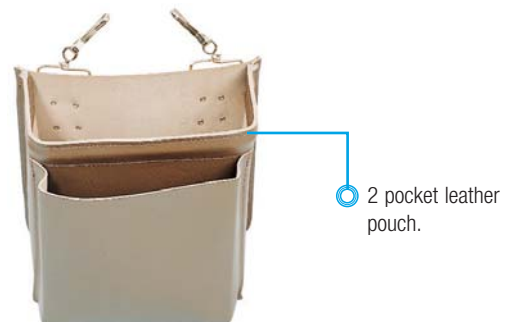


#### Spare parts

Reference	Characteristics
M0-17-01	Pair of elastic cords
M0-17-02	Pair of wear plates
M0-17-03	Blade roller
M0-17-04	Pair of runners

### Tool bag for safety harness

Reference		
M0-32/3	250 x 230 x 100	835



## Insulating ladders

A complete range with top quality features: Insulation between two steps: 30,000 V (test performed after immersion in water for 24 hours). High mechanical resistance to bending and twisting. Good resistance/weight ratio. High fire resistance. High resistance against bad weather and corrosive elements.



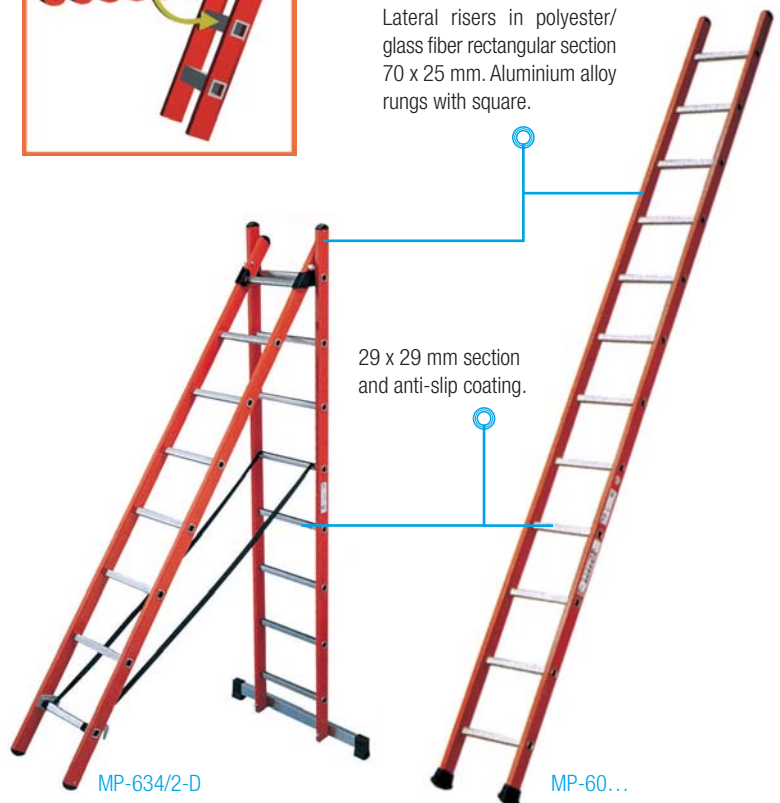
EN 131

## Simple ladders

Reference	↔	Numbers of rungs
MP-602-D	2.41 m	8
MP-603-D	2.97 m	10
MP-604-D	4.09 m	14
MP-605-D	4.93 m	17

## 2 sections extension ladders

Reference	↔	Numbers of rungs
MP-634/2-D	2.70 / 4.66 m	9 + 9



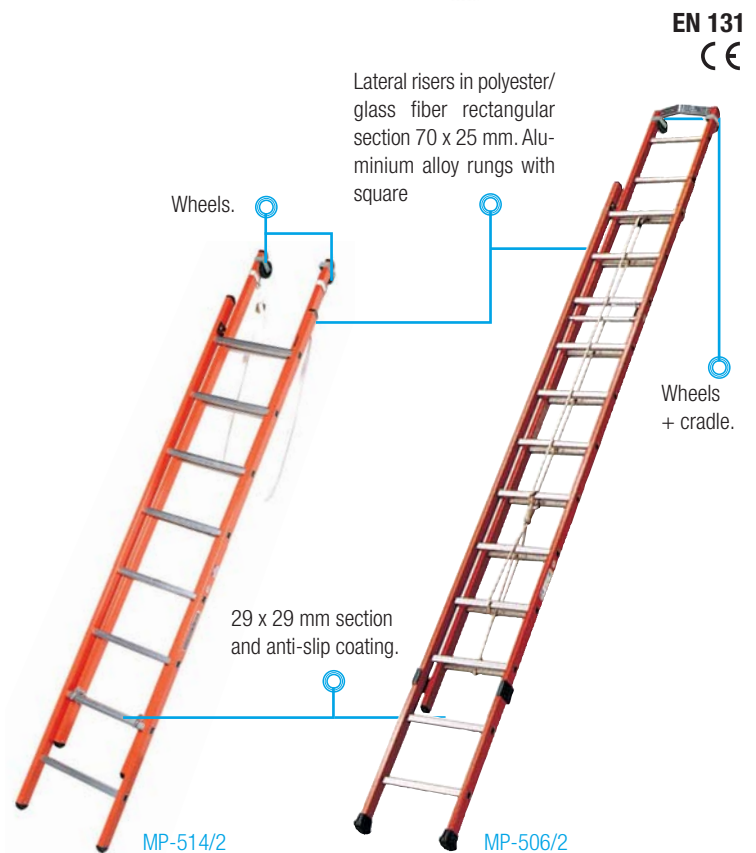
## 2 sections extension ladders, hand operated

Reference	↔ Folded	↔ Deployed	Numbers of rungs	⚖️
MP-514/2	2.41 m	4.09 m	2 x 8	13 900
MP-515/2R	2.97 m	5.21 m	2 x 10	17 000

## 2 sections extension ladders, rope and pulley operated

Reference	↔ Folded	↔ Deployed	Numbers of rungs	⚖️
MP-506/2	3.53 m	6.05 m	2 x 12	22 900
MP-508/2	4.66 m	8.30 m	2 x 16	35 400
MP-509/2	5.22 m	9.14 m	2 x 18	39 300
MP-510/2	5.78 m	10.26 m	2 x 20	43 000

Ladders come with cradle, strap and front wheels.



EN 131







## Equipment for working on pole: insulating ladders and stepladders

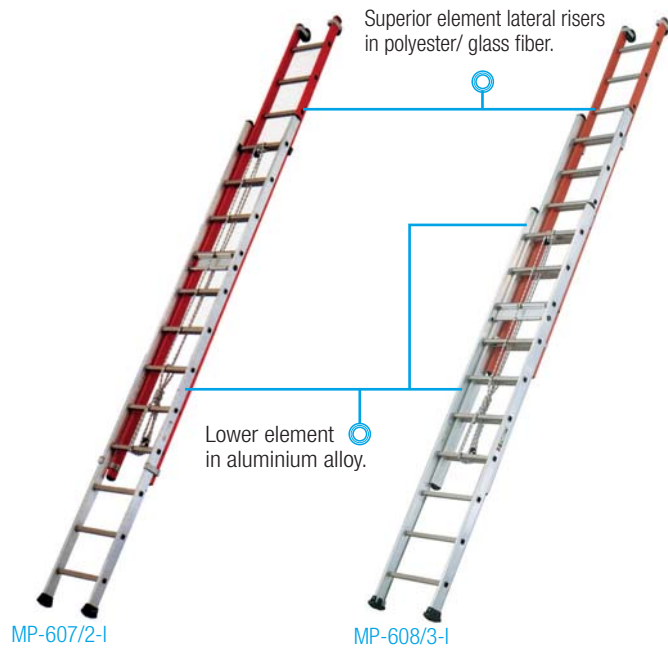
### Standard extension ladders

#### 2 sections extension ladders, rope and pulley operated

Reference	Folded	Deployed	Numbers of rungs	Weight
MP-607/2-I	4.66 m	8.02 m	2 x 16	30 200
MP-608/2-I	5.22 m	9.14 m	2 x 18	34 400
MP-609/2-I	5.8 m	9.98 m	2 x 20	37 800

#### 3 sections extension ladders, rope and pulley operated

Reference	Folded	Deployed	Numbers of rungs	Weight
MP-607/3-I	2.98 m	6.89 m	3 x 10	24 600
MP-608/3-I	3.82 m	8.86 m	3 x 13	34 600



EN 131  
CE

### Insulating stepladders

Insulation between two steps: 30 000 V

Reference	Nbr steps	Height Access (m)	Height folded (m)	Height based feet (m)	Weight
MP-700-4	3	2.58	1.39	0.68	5 900
MP-700-1	4	2.81	1.64	0.91	6 900
MP-700-2	5	3.04	1.89	1.14	8 000
MP-700-3	6	3.27	2.14	1.37	9 400
MP-700-5	7	3.50	2.39	1.60	11 000



### Folding stepladder with railing

Secure non-insulating platform.




Reference	Nbr steps	Height Access	Height folded	Height based feet	Weight
MP-700-6	4	2.88 m	1.40 m	0.88 m	19 500



## Collective Protective Equipment: Conductor Insulation

### Insulating flexible cover

For **LV** installations only (< 1 000 V).

Reference			
<b>MP-35/12</b>	1.3 x 12.5 m	0.3	6 000
<b>MP-35</b>	1.3 x 25 m	0.3	11 800
<b>MP-40 *</b>	1.3 x 20 m	0.8	24 800




\* MP-40 for BT and HTA.

Translucent vinyl cover, attached by means of attachment clamp or adhesive tape.

IEC 61-112

### Insulating flexible cover with Velcro™ tape

For **LV** installations only (< 1 000 V).

Reference			
<b>MP-123</b>	360 x 660	0.5	150
<b>MP-123/1</b>	500 x 900	0.5	290
<b>MP-123/2</b>	800 x 1 200	0.5	600




Flexible cover made of translucent polyvinyl. Reinforced by a grid of synthetic fibre.

IEC 61-112

The «Velcro™» type allows the flexible covers to be closed by pressing the edges together. Several flexible covers can also be connected in this manner.

### Insulating tape

For **LV** installations only (< 1 000 V).





Reference			
<b>MP-37</b>	90 x 25 000	0.3	800

Translucid insulating polyvinyl tape.

IEC 61-112

Fixing by clamp MP-33 or adhesive tape.

### Blanket clamp

Reference				
<b>MP-39</b>	160	50	1	
<b>MP-4110</b>	165	60	1	
<b>MP-41530</b>	67	10	12	

Wood.

MP-39



Bimaterial isolated clamp.

Plastic Clamp-Steel Spring protected against corrosion.

MP-41530

MP-4110

### Electric adhesive tapes

Reference		
<b>MP-19-(* )</b>	0.13 x 15 x 10 000	5 x same colours
<b>MP-19-L0T</b>	0.13 x 15 x 10 000	Set of 10 multicolours

(\*) Reference to complete by the letter colour.

Protection through obstacles or distancing, see chapter **Safety padlocks and warning signs**.

H = Brown.  
J = Yellow.  
R = Red.  
B = Blue.  
No letter: White.  
N = Black.  
G = Gray.  
V = Green.

# Locking and signaling












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Warning signs	50
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# Safety padlocks

Choose your locks!

A complete line of AL padlocks to meet all of your needs

Ring diameter		Ring bow		Bodys colours						Stickers	keys		
Ø 4 mm	Ø 6 mm	50 mm	70 mm	Red	White	Yellow	Blue	Green	Orange	Picto	Standard	Random	Upon request
240	230	-	S	-	B	J	BL	V	OR	EX	(*)	Z	00
													

## To order your padlocks

Bill of material as a reference for your padlocks:

**AL - XXX - X - X - XX - XXXX**

↑

**AL- +**  
**Ring Ø:**  
**240 or 230**

↑

**Ring bow:**  
**nothing or S**

↑

**Colour:**  
**nothing or B or J or BL or V or OR**

↑

**Stickers:**  
**EX**

↑

**Key:**  
**number from 111 to 9999 or Z or 00**

**1<sup>st</sup> example :**

ring Ø 6 mm ..... **AL-230**


ring Lg 50 mm ..... -

colour standard (red) ..... -

stiker with pictogram ..... **EX**

key n°222 ..... **222**

Your reference: **AL-230-EX-222**



**2<sup>nd</sup> exemple :**

ring Ø 4 mm ..... **AL-240**


ring Lg 70 mm ..... **S**

colour blue ..... **BL**

sticker with pictogram ..... **EX**

key indifferent ..... **Z**

Your reference: **AL-240-S-BL-EX-Z**



## Codes or key numbers




(\*\*): Number 111 or 222 only.

Z: Number of random key (at random).

00: Key number on request.






## Tables of possible combinations

Key	Stickers	AL-230 (Ø 6 mm)										AL-240 (Ø 4 mm)									
		- (ring of 50 mm)					-S (ring of 70 mm)					- (ring of 50 mm)					-S (ring of 70 mm)				
		-	W	Y	BL	G	-	W	Y	BL	G	-	W	Y	BL	G	-	W	Y	BL	G
(**)		•					•					•	•	•	•	•	•	•	•	•	•
Z		•					•					•	•	•	•	•	•				
00		•					•					•	•	•	•	•	•	•	•	•	•

● Existing padlocks.






### Models with special symbols

Reference	Ring		
	 mm	 mm	
AL-230-(**)-EX	50	6	204
AL-230-S-(**)-EX	70	6	214
AL-230-Z-EX	50	6	204
AL-230-S-Z-EX	70	6	214
AL-240-(**)-EX	50	4	192
AL-240-S-(**)-EX	70	4	198
AL-240-Z-EX	50	4	192
AL-240-S-Z-EX	70	4	198

(\*\*) Add the key numbers 111 or 222 only.



### Colour models

Reference	Ring		Colour	
	 mm	 mm		
AL-240-B-(**)-EX	50	4	White	192
AL-240-B-Z-EX	50	4	White	192
AL-240-B-00-EX	50	4	White	192
AL-240-S-B-(**)-EX	70	4	White	198
AL-240-S-B-00-EX	70	4	White	198
AL-240-J-(**)-EX	50	4	Yellow	192
AL-240-J-Z-EX	50	4	Yellow	192
AL-240-J-00-EX	50	4	Yellow	192
AL-240-S-J-(**)-EX	70	4	Yellow	198
AL-240-S-J-00-EX	70	4	Yellow	198
AL-240-BL-(**)-EX	50	4	Blue	192
AL-240-BL-Z-EX	50	4	Blue	192
AL-240-BL-00-EX	50	4	Blue	192
AL-240-S-BL-(**)-EX	70	4	Blue	198
AL-240-S-BL-00-EX	70	4	Blue	198
AL-240-V-(**)-EX	50	4	Green	192
AL-240-V-Z-EX	50	4	Green	192
AL-240-V-00-EX	50	4	Green	192
AL-240-S-V-(**)-EX	70	4	Green	198
AL-240-S-V-00-EX	70	4	Green	198

(\*\*) Add the key numbers 111 or 222 only.



### For all padlocks

Reference	Characteristics
A-76230	Additional key (specify the number)


 mm Total height

 Diameter

 Weight



## Handle with 6 padlocks

Reference	Characteristics	
AL-236-111-EX	6 padlocks <a href="#">AL-230-111-EX</a>	1 150
AL-236-222-EX	6 padlocks <a href="#">AL-230-222-EX</a>	1 150
AL-236-S-111-EX	6 padlocks <a href="#">AL-230-S-111-EX</a>	1 210
AL-236-S-222-EX	6 padlocks <a href="#">AL-230-S-222-EX</a>	1 210
AL-236-00-EX *	6 padlocks <a href="#">AL-230-00-EX</a>	1150
AL-236-S-00-EX *	6 padlocks <a href="#">AL-230-S-00-EX</a>	1210



\* 00: key number on request.

Compartment with transparent cover for key storage.

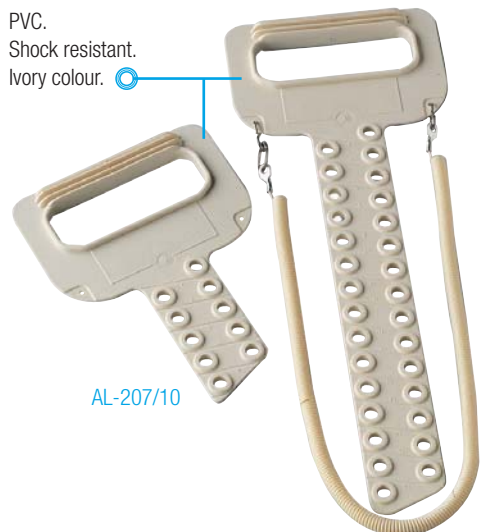


Handle of moulded plastic for holding up to six padlocks.

## Handle for 10 and 30 padlocks

Reference	 Ring	Characteristics	
AL-207/10	9	for 10 padlocks	60
AL-207/30	9	for 30 padlocks	130



PVC.  
Shock resistant.  
Ivory colour.



AL-207/10

AL-207/30

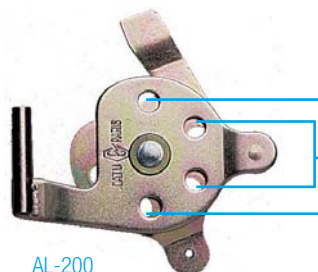
## Multiple locking apparatus

Reference		
AL-200	100 x 60 x 10	150
AL-202	165 x 50 x 12	200

### Safety padlock

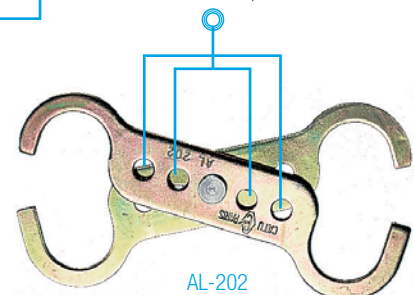
Reference	 Ring	 Ring	
AL-203 *	6	50	180

\* Key n°111.



AL-200

Holds up to four padlocks of  
Ø 6 mm max (AL-203, AL-  
230 ou AL-240).



AL-202



Diameter



Dimensions



Total length



Weight






## Lockers and Lockout Indicators

### Clipblock™ Breaker Lockers

New design compatible with all brands of modular units. Quick attachment with a no. 3 flat screwdriver. Very compact and lockable.

Warning sign (which may be supplemented by an [AP-461](#) card or an [AP-467](#) sticker, see below).


Reference	Characteristics and 
<b>AL-201/1</b>	Comes in a blister pack with 5 units, no padlock
<b>AL-201-C/1</b>	Comes with 1 padlock in a blister pack

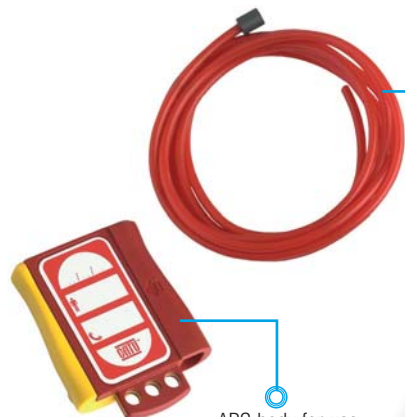


### Multiple Locker

Fits all types of LV protection device lockers and can be used on lockable breaker levers. Particularily suitable for CLIPBLOCK™ breaker lockers.

Lockable for up to 3 users.

Reference	Characteristics and 
<b>AL-205</b>	2 items - comes without a padlock or locker <a href="#">AL-201/1</a>
<b>AL-205/5</b>	2 items - comes with 5 m cord. Comes without a padlock or locker <a href="#">AL-201/1</a>



High resistance PBC cord.  
Length 2 m and Ø 4 mm.

ABS body for use with Ø 4 to 6 mm padlocks.



## Warning signs

Special tool steel, oil-hardened.

Reference	Type	mm	Colours
AM-344-GB	aluminium	100 mm side	black letters on yellow
AM-345-GB	aluminium	100 mm side	black letters on yellow
AM-467-GB	aluminium	Ø 80 mm	white letters on red
AP-510-BT-GB	plastic	297 x 210 mm	golden rules
AM-344	aluminium	100 mm side	black or yellow
AM-344/05	aluminium	50 mm side	black or yellow
AM-49/1	aluminium	100 mm side	black or yellow
AM-49/2	aluminium	200 mm side	black or yellow
AM-41/1	aluminium	100 mm side	black or yellow
AM-41/2	aluminium	200 mm side	black or yellow
AM-20-GB	aluminium	350 x 250 mm	blue letters plain aluminium
AP-499/1	plastic	Ø 100 mm	white or red

## Substation signs

Specialized signs.

Reference	Type	mm	Colours
AM-20-RM	aluminium	350 x 500 mm	blue letters on plain aluminium
AM-61-GB	aluminium	150 x 200 mm	
AM-61-RM	aluminium	150 x 200 mm	
AM-215-RM	aluminium	350 x 250 mm	black on yellow SF6 warning
AM-282/2-RM	aluminium	200 x 60 mm	
AM-7002	aluminium	300 x 200 mm	black on yellow
AM-33/3	aluminium	Ø 300 mm	red-black on alu
AM-34/2	aluminium	Ø 200 mm	red-black on alu
AM-32/3	aluminium	Ø 300 mm	
AP-510-GB	plastic	420 x 297 mm	golden rules
AP-951/2	plastic	200 x 200 mm	red on white

For other models, please consult us.

## Warning flags

Brightly colored ribbon.

Reference	mm
AL-53	650 x 350 on handle

 Dimensions

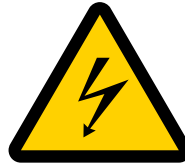

AM-344-GB



AM-345-GB



AM-344/05 - AM-344



AM-49/...



AM-41/...



AM-467-GB



AP-499/1



AM-20-GB



AP-510-BT-GB



AP-951/2



AM-20-RM



AP-510-GB



AM-215-RM



AM-282/2-RM



AM-7002



AM-34/2



AM-32/3



AM-33/3



AM-61-GB



AM-61-RM



AL-53



### Self adhesive warning signs



Complete range of self adhesive, warning signs conditioned in box of 20, 30 or 50 units.

Reference	mm	
AT-41/025	25 mm side	50
AT-41/05	50 mm side	30
AT-41/1	100 mm side	20
AT-49/025	25 mm side	50
AT-49/05	50 mm side	30
AT-49/1	100 mm side	20
AT-50/025	25 mm side	50
AT-50/053	50 mm side	30
AT-50/1	100 mm side	20
AT-51/025	25 mm side	50
AT-51/05	50 mm side	30
AT-51/1	100 mm side	20
AT-64/1 *	100 mm side	20
AT-66/1	100 mm side	10
AT-52/05	50 x 25 mm side	30
AT-52/1	100 x 50 mm side	20
AT-53/05	50 x 25 mm side	30
AT-53/1	100 x 50 mm side	20
AT-54/05	Ø 50 mm	30
AT-54/1	Ø 100 mm	20
AT-55/05	Ø 50 mm	30
AT-55/1	Ø 100 mm	20
AT-56/05	Ø 50 mm	30
AT-56/1	Ø 100 mm	20
AT-57/05	Ø 50 mm	30
AT-57/1	Ø 100 mm	20
AT-58/05	Ø 50 mm	30
AT-58/1	Ø 100 mm	20
AT-59/05	Ø 50 mm	30
AT-59/1	Ø 100 mm	20
AT-60/05	Ø 50 mm	30
AT-60/1	Ø 100 mm	20
AT-61/05	Ø 50 mm	30
AT-61/1	Ø 100 mm	20
AT-62/05	Ø 50 mm	30
AT-62/1	Ø 100 mm	20
AT-63/05	Ø 50 mm	30
AT-63/1	100 mm side	20

\* non-permanent adhesive.

### Grounding flags

Vinyl coated fabric.

Reference	mm
AL-58	Fixing on handle; for work site
AL-60	Fixing on earthing cable; for immediate identification in open-type switchgears possible inscription: 0 to 99 (by using ALU-SCRIPT markers)

NFX 08-003



AT-41/1



AT-41/05



AT-41/025



AT-52/1



AT-49/1



AT-49/05



AT-49/025



AT-52/05



AT-50/1



AT-50/053



AT-50/025



AT-53/1



AT-51/1



AT-51/05



AT-51/025



AT-53/05



AT-54/1



AT-54/05



AT-55/1



AT-55/05



AT-56/1



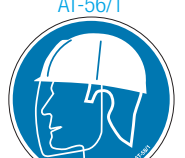
AT-56/05



AT-57/1



AT-57/05



AT-58/1



AT-58/05



AT-59/1



AT-59/05



AT-60/1



AT-60/05



AT-61/1



AT-61/05



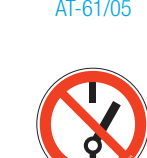
AT-62/1



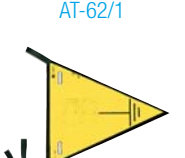
AT-62/05



AT-63/1



AT-63/05



AL-60



AL-58



AT-64/1 \*



AT-66/1



## Safety boundary post

For temporary installation used with tough link chain delineators. Removable foot.

50 mm

Length: 0.9 m.

Reference	Characteristics
AL-316	Red and white - Weight: 4.2 kg
AL-318	Black and yellow - Weight: 4.2 kg



AL-316

AL-318

## Fixing tools for warning signs

Brightly colored ribbon.

Reference	Characteristics
AC-21	Small nickelled chain sold in bags of 10 units
AD-01	Roundheaded screw anti-vandalism M3x15 sold in bags of 100 units
AC-44	Self-adhesive plastic plates Ø 40 mm for magnetic fixing (10 units)



AC-21

AC-44



AD-01

## Safety adhesive tape

Adhesive tape black and yellow.

Reference	mm
AT-5005	Length: 100 m



AT-5005

## Chain delineators

Polyamide chains.

Reference	mm
AL-31/25	Red and white - Length: 25 m
AL-31/05	Red and white - Length: 5 m
AL-32/05	Black and yellow - Length: 5 m
AL-31	Opening ring for AL-31/25



AL-31/25



AL-32/05

## Delineators

Brightly colored ribbon. Snap hook on one ribbon end and another on spool. A ring on spool adapts ribbon at desired length.

wide: 50 mm

length: 20 m.

Reference	mm
AT-62-A	Red
AT-63-A	Yellow
AT-65-A	Replacement ribbon*



AL-62-A



AL-63-A



# LV test and measurement

Voltage Detector	54
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Multimeters	65



## DETEX™ NG 917-EX and 917/2-EX Voltage Detectors and Testers

EN 61243-3 / IEC 61243-3



The **Detex™** New Generation **MS-917-EX** and **917/2-EX** are designed based on the **IEC 61243-3** standards, in response to the requirements of the new **NF C 18-510** standard and the **EN 50110-1** European standard.

Sound and lighting equipment, suitable for indoor/outdoor use. It enables to detect absence of voltage and:

- Checks voltage levels from 12 to 690V AC, 750V DC,
- Sound and light continuity for a non-live circuit (threshold of 200  $\Omega$  for 917-EX and 100  $\Omega$  for 917/2-EX),
- Unipolar identification of the phase,
- Search for the polarities of a DC circuit,
- Phase rotation by the two-wire method only for 917/2-EX.

**Detex™ NG 917-EX**

Test-lead points according to IEC 61010-031  
Point  $\varnothing$  2 mm and 19 mm lengths for well contact

Hazardous voltage indicator light (> 50 V).

Phase identification light (unipolar).

DC test button.

Double-insulation flexible cords.



### SPECIAL FEATURES

#### 917-EX and 917/2-EX

- Fully modularized and adaptable to changing situations.
- Total safety with a light indicating the presence of dangerous voltage (> 50 V).
- A test button to discern the verification of proper functioning from continuity.
- High degree of IP65 and IK06 protection.

#### 917/2-EX

- Equipped with custom lighting.
- Phase rotation check (two-wire method).



The configuration with both fixed points allows for a 19 mm gap between points, which immediately normalizes the double contact (2P+T, 10/16 A).

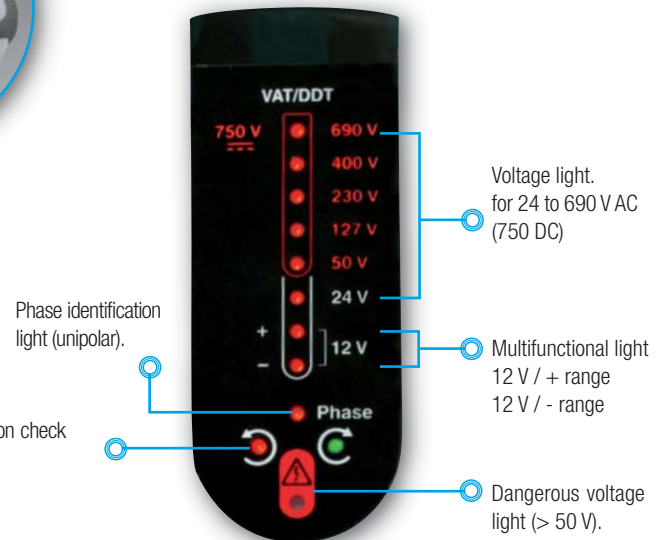




## Detex™ **NG 917/2-EX**



MS-917/2-EX Front Panel



MS-917/2 storage configuration.



### Accessories

Reference	Characteristics
M-87369	Carrying bag *
M-952325	Board hanger *

\* Ordered separately.



M-87369  
Carrying bag.



M-952325  
Board hanger provided on the back of the device.

### Selections and Characteristics:

Reference												
	Voltage 12-690 V AC 12-750 V DC	50/60 Hz +/- 10 %	Continuity	IP65 Protection IK06	Class II	Category IV 600 V	Operations -15 to +55 °C (class N)	2 AAA batteries 1.5 V	Phase rotation direction	Suitable for standard 2P+T. 19 mm	Lighting unit.	210
MS-917-EX *	•	•	200	•	•	•	•	•	—	•	—	•
MS-917/2-EX *	•	•	100	•	•	•	•	•	•	•	•	•

\* Supplied without accessories.

## DETEX™ NG 920 Voltage Detector and Tester

EN 61243-3 / IEC 61243-3 



The **Detex™** New Generation **MS-920** is designed based on **IEC 61243-3** rates, in response to the requirements of the new **NF C 18-510** standard and the **EN 50110-1** European standard.

Sound and lighting equipment, suitable for indoor/outdoor use. It enables to detect absence of voltage and:

- Check of voltage levels > 50 V DC and AC,
- Up to 690 V AC and 750 V DC,
- Continuity sound control for a non-live (< 100  $\Omega$ ),
- Measure of non-live continuity from 100 to 1,000  $\Omega$ ,
- Unipolar identification of the phase,
- Search for the polarities of a DC circuit,
- Phase rotation check (two-wire method).

**Detex™ NG 920 -EX**

Test-lead points according to IEC 61010-031  
Point  $\varnothing$  2 mm and 19 mm lengths for well contact.

Three digit colour LCD screen display.

DC test button.

Unlocking control.

Indicator light when voltage > 50 V.

Double-insulation flexible cords.



### SPECIAL FEATURES

- Three-digit digital display **RED** and **BLUE**.
- Measure of AC and DC voltage.
- Measure of continuity in  $\Omega$  (up to 1000  $\Omega$ ).
- Fully modularized and adaptable to changing situations.
- Total safety with a light indicating the presence of dangerous voltage (> 50 V).
- A test button to discern the verification of proper functioning and continuity (threshold of 100  $\Omega$ ).
- IP2X touch key "Touch" functionality.
- High degree of IP65 and IK06 protection.
- Phase rotation check (two-wire method).
- Equipped with custom lighting.



The configuration with both fixed points allows for a 19 mm gap between points, which immediately normalizes the double contact (2P+T, 10/16 A).





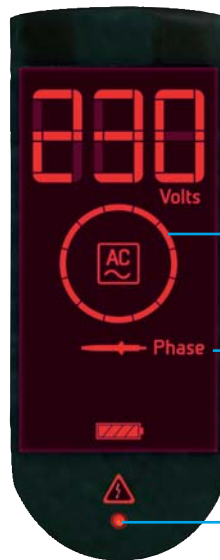


### MS-920 Front Panel Details



Polarity.

Example of continued 24V detection, display is blue because < 50 V.



Direction of rotation for the phase.

Unipolar identification of the phase.

Hazardous voltage indicator light (&gt; 50 V).

Example of detecting 230 V AC, displayed in red.



Charging battery status.

Example of measuring the continuity of 320 Ω, displayed in blue because > 100 Ω.



Lighting unit.

### Accessories

Reference	Characteristics
M-87369	Carrying bag *
M-952325	Board hanger **

\* Ordered separately.  
\*\* Included with MS-920-EX.



M-87369  
Carrying bag.



MS-920  
storage  
configuration.



M-952325  
Board hanger provided  
on the back of the device.


### Selections and characteristics:

Reference														
MS-920-EX *	Voltage 12-690 V AC 12-750 V DC	50/60 Hz	Continuity < 100 Ω	Protection IP65 IK06	Class II	Category IV 600 V	-15 to +55°C (class II)	Display 3 digits	2 AAA batteries 1.5 V	Phase rotation direction	Suitable for standard 2P+T. 19 mm	IP2X test-lead points. IEC 61010-31	Lighting unit.	210

\* Unit comes with a hook table.



## Phase rotation indicator

IEC 61557-7   
CE

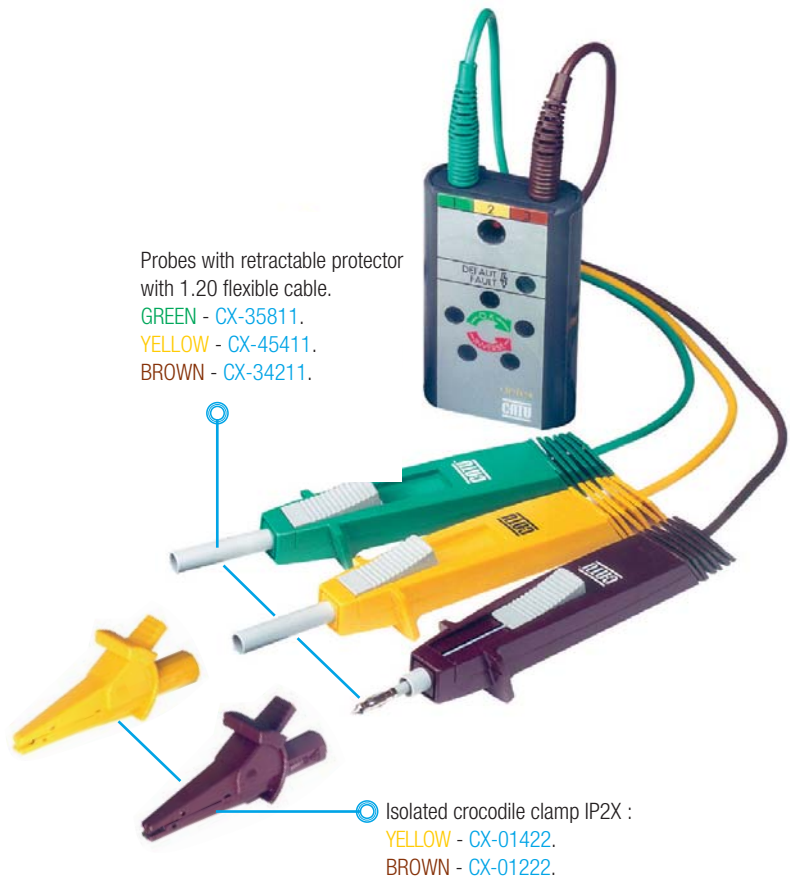
Signaling via the successive lighting of diodes symbolising rotation.

"FAULT" diode lits: phase cut off or incorrectly connected.



Carrying bag with stray.

M-87290



### Accessories

Reference	Characteristics
M-87290	Carrying bag with stray. (included)











### SPECIAL FEATURES

- Compact.
- Visualization by rotation LED's cercle.
- Works on generating units.



### Selections and characteristics:

Reference								
MS-152+ *	Voltage 90-400 V	45/60 Hz	Protection IP54 IK06	Class III IEC 61010-1	Phase rotation direction	IP2X test-lead points. IEC 61010-31	225x130x65 = storage	100

\* Delivered in storage bag with 3 probes (GREEN, YELLOW, BROWN) 2 crocodile clamps (YELLOW, BROWN).

 Dimensions

 Weight

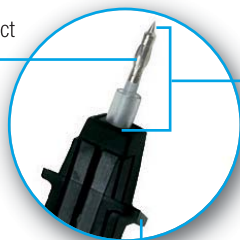


## Safety test probe for voltage detector use only

EN 61010-2-031 / IEC 61010-2-031  
UTEC 18-510 / EN 50110  
CE

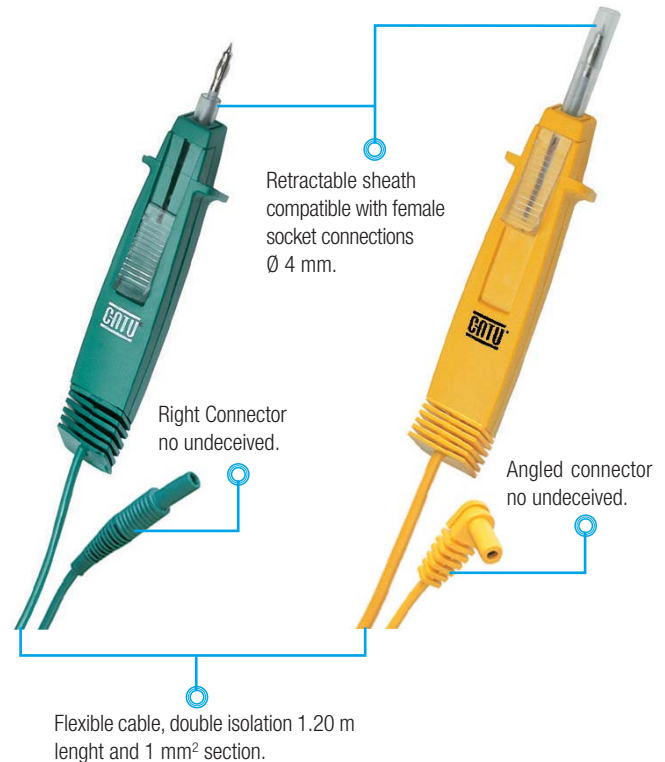
Reference	Unit Colour					Connector
CX-34211	BROWN	Voltage 1000 V	admissible max. 20 A	Class III	IP2X test-lead points.	Right undeceived
CX-35811	GREEN	Voltage 1000 V	admissible max. 20 A	Class III	IP2X test-lead points.	Right no undeceived
CX-45211	BROWN	Voltage 1000 V	admissible max. 20 A	Class III	IP2X test-lead points.	Right no undeceived
CX-45511	BLACK	Voltage 1000 V	admissible max. 20 A	Class III	IP2X test-lead points.	Angled no undeceived
CX-45411	YELLOW	Voltage 1000 V	admissible	Class III	IP2X test-lead points.	Angled no undeceived

Elastic contact cage.



Access downhole depth 26 mm.  
Compatible with female socket connections Ø 4 mm.

Hand-guard.



## Voltage take-off punch

The voltage take-off punch is able to make an insulating piercing on a low voltage wire to plug a measurement device.

Reference		
MS-62	Ø 5.6 - 14.4	15
MS-63	Ø 12 - 31	5



Isolated body.



Steel pin.

Female socket for safety test probe Ø 4 mm.

## Contact probes for L.V. tester

Lights and rigids contact antennas for **Detex™ NG** :  
**MS-917, MS-917/2 et MS-920.**

### For overhead lines

Reference	↔	g
MS-8014	125 cm	755

Delivered in storage bag 50 x 130 x 1 300 mm.



Contact antennas used as suspension hooks.

### For installations and sidewalk boxes

Reference	↔	g
MS-8013	50 cm	400

Delivered in storage bag 50 x 150 x 470 mm.



Round tip contact.

## Hand stick

For distance working  
2 removables elements

Reference	↔	g
M-951143	80 cm	240

Delivered in storage bag.

Ergonomic handle.

Field of use: 1 000 V max.



Connecting test probe by standard socket.



## Storage bag

Reference	Dimensions	Characteristics
M-87369	180 x 70 x 45	Storage bag with seatbelt for MS-917, MS-920.
M-87290	225 x 130 x 65	Storage bag with stray for MS-152+ et MS-703.



M-87369



M-87290

## Lead set for checks on L.V distribution board

Reference	Characteristics
M-952271	Lead set for checks on L.V distribution board *

\* For DT-300 and DT-170 only.

Female socket Standard 2P+T.

Heartbring safety crocodile clamp.

Safety test probes with retractables sheath.



M-952271

## Storage bag

Reference	Dimensions	Characteristics
M-87292	250 x 200 x 70	Flexible storage bag with handle.



M-87292

↔ Total length

Dimensions

g Weight

**CATU™**



## Differential Controllers CATEX™ NG DT-170

**CATEX™ New Generation DT-170** is designed based on the **IEC 61557-6** standard and the requirements set out in **NF C 15-100**.

Its main functions are to monitor and measure most types of residual differential devices (RDDs) AC or A, specifically the following parameters:

- Starting time in ms, (accuracy: +/- 1 %).
- The current trip value for sensitive differential circuit breakers: 10, 30, 300, and 500 mA, regardless of whether the type is N (normal) or S (selective) (accuracy: +/- 5 %).
- 0° or 180° for the different reaction of RDDs, depending on the 1st positive or negative alternation in the current,
- The presence of voltage\* and network conformity, (\*Warning: CATEX™ NG is not a VAT.),
- The position of the phase,
- The grounding of the production conductor (< 2 000 Ω).

Once the parameters have been selected, press the orange button to begin the measurement. The screen remains **BLUE** if the result is correct, or it turns **RED** to indicate a non-conformity.

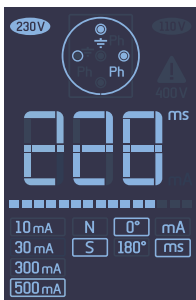
**IEC 61236 (CEM) / IEC 61010-1**  
**IEC 61557-6**  
**CE**



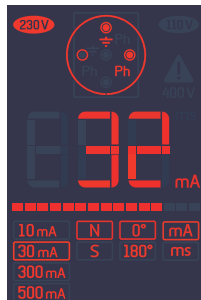
Check on table with cord  
**M-952271**.



Outlet check 2P+T.



Example of measuring trigger in the value of time for a conforming 500 mA RDD.



Example of measuring trigger for a non-conforming RDD of 30 mA (current value > threshold).



### SPECIAL FEATURES

- Two-colour LCD display improves the interpretation of measures in terms of their conformity.
- Time measurements (ms) or trip current value (mA).
- Locking and warning signals for 400 V network voltage and contact potential >50V
- Use on 2P+T outlet or on LV table with cord.
- Non-slip coating for a better grip.
- Its internal battery gives it complete autonomy.

### Accessories

Reference	Characteristics
<b>M-952271</b>	Lead set for checks on L.V distribution board (for DT-110/DT-150/DT-300 only)
<b>M-881954</b>	Socket adaptor UK
<b>M-87292</b>	Storage bag*

\* To be ordered separately, see page 65.



**M-881954**



**M-952271**

### Features:

Reference													
<b>DT-170 *</b>	230V voltage TT, TN	50/60 Hz	Voltage presence 400 V	IP40 Protection	Class II	Category III	Use: -15 °C to +45 °C	3 + 1/2 digit display	NI-MH Battery 7.2 V 110 mA/H	Differential: 10, 30, 300, and 500 mA	Grounding < 2000 Ω	71x210x51	360

\* Controller delivered without accessories.



## Grounding and continuity measurement device CATOHM™ NG DT-300

**CATOHM™ New Generation DT-300** is designed based on the **IEC 61557-4** standard and the requirements set out in NF C 15-100.

The device measures ground resistance using the "default loop" principle.

The **CATOHM™ NG DT-300** shows the following on its LCD display:

- The presence of voltage and compliance,
- The position of the phase,
- The grounding of the production conductor, the main functions being to measure the ground resistance value and to thus check the continuity of metal masses by sound signal.

Once connected to properly connected installation, the grounding value is instantly measured and displayed at the top of the LCD display, indicating ground resistance values:

- **0 to 99 Ω**, **BLUE** numbers (< the 100 threshold Ω recommended under NF C 15-100)

- **100 to 1999 Ω**, **RED** digits

The measurement is taken with an accuracy of (+/- 3 % + 1 digit) for pure resistance, ranging 0-200 Ω, at 23°C +/- 5°C.

**IEC 61010-1**   
**IEC 61557-4**

Uses 2P+T 10/16 A or LV table for single-phase 230V circuits between phases and neutral.

IP2X connection wells from the test-lead point.

4-digit display of the grounding value in Ω.

Anti-skid clothing.

Continuity extended 7 m along the roller (Ø 105 x H 62 mm).

IP2X test-lead point with retractable sheathing. Checks the continuity of metal masses.



Grounding value < 100Ω.

Connection between phases under 400V.

Grounding value > 100Ω.

Example measurement without grounding, displayed in **RED**.

Check 2P+T outlet with test-lead point on extension.

## SPECIAL FEATURES

- Full autonomy (without battery)
- Use on 2P+T outlet or on LV table with cord.
- LCD display instantly displays the interpretation of measures in terms of their conformity.
- Measures the grounding loop without tripping the breakers: < 15 mA.
- Non-slip coating for a better grip.
- 7 m continuity extension cord.

## Accessories

Reference	Characteristics
<b>M-921647</b>	Roller with 7 m of cord *

\* To be ordered separately.

## Features:

Reference												
<b>DT-300 *</b>	230V voltage TT schema	50/60 Hz	Continuity measured at ≤ 2 Ω	400 V voltage present	IP40 Protection IK06	Class II	Category III	Use: -15 °C to +45 °C	4-digit screen display	Grounding < 2000 Ω	71x210x51	340

\* Controller delivered with probes and extension on roller.





## Insulation controller

**NF C 15-100** recommends periodically checking **insulation resistance**. Insulation resistance is measured between each active conductor and the ground (when not live). Its value should be **500 kΩ** for a DC testing voltage of 500 V.

The DT-500 is a specially designed device for quickly, easily, and safely measuring insulation resistance.

It provides a safety system that prevents a measurement when connected to a live installation.

**Measures insulation resistance below 500 V.**

The insulation resistance value is indicated by illuminating a light:

- **RED** for values including 0, 300, 400 kΩ.
- **GREEN** for values including 500, 600, 700, 800, 900, 1 000 kΩ and ∞.



The DT-500 can bypass the phase and neutral in order to protect sensitive equipment (electronics, computers, etc.).



## Accessories

Reference	Characteristics
<b>M-951981</b>	Replacement blue test-lead point *
<b>M-87292</b>	Storage case *

\* To be ordered separately.

## Features:

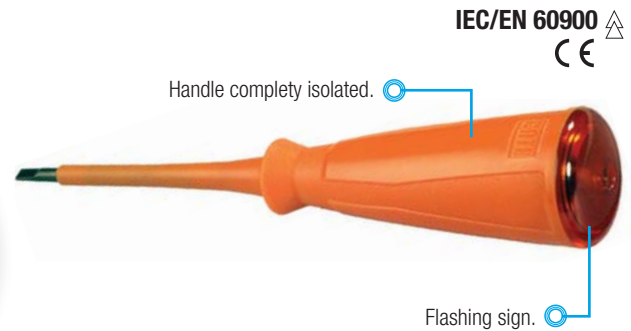
Reference										
<b>DT-500 *</b>	Output voltage < 500 V DC	from 0 to ∞	IP54 Protection IK06	Class II	Category III IEC 61010-1	Use: 15 °C to +45 °C	4 LR6 batteries	IP2X test-end points	213x75x46	600 with batteries and accessories

\* Delivered with 3 test probes, 3 crocodiles safety clamps and batteries.

**GATU**

## Phase tester insulated screwdriver

This practical and reliable insulated screwdriver detects the phase from 127 V AC by illuminating a high-intensity diode. This device is not voltage detector.



IEC/EN 60900  
CE

Handle completely isolated.

Flashing sign.

### Features:

Reference				
MO-65222	Phase detection from 127 to 1000 V	4	85	65



### SPECIAL FEATURES

- Without a metal ground contact on the handle, it is perfectly insulated and may be used with insulating gloves.
- Operates with a battery under a 3-year warranty.

## Infrared thermometer

High-performance **MX-704** infrared thermometer. Offers adjustable emissivity functions.

Allows users to measure temperature without knowing the target and the emissivity checking the material properties of the surface.

Temperature data storage.

**Accuracy  $\pm 2^\circ\text{C}$  with a resolution of 0.10.**

Response time: 500ms.

Auto Power off: Automatically after approx.6 seconds.



IEC 61000-4-2 / IEC 61000-4-3 / IEC 61000-4-8  
EN 61326  
CE

LCD display 3 + 1/2 back light in accordance with temperature sensibility

Low battery indicator.

Switchable on/off laser sighting.

Electronic trigger lock.

### Features:

Reference					
MX-704 *	Measure: -32 to +535°C -25 to +995°F	Operation 0 to +50 °C	1 battery 9 V 6 LR61	130x180x40	195

\* Includes: battery, soft carrying case and instruction manual.

Total length

Dimensions

Weight

**CATU**



## Digital multimeter

The **MX-701** is a highly reliable 3-1/2 digit digital multimeter with automatic measuring range selection. It can measure direct and alternating voltage, AC and DC, resistance, capacity, temperature, and it can test the diodes and open circuit (sound).



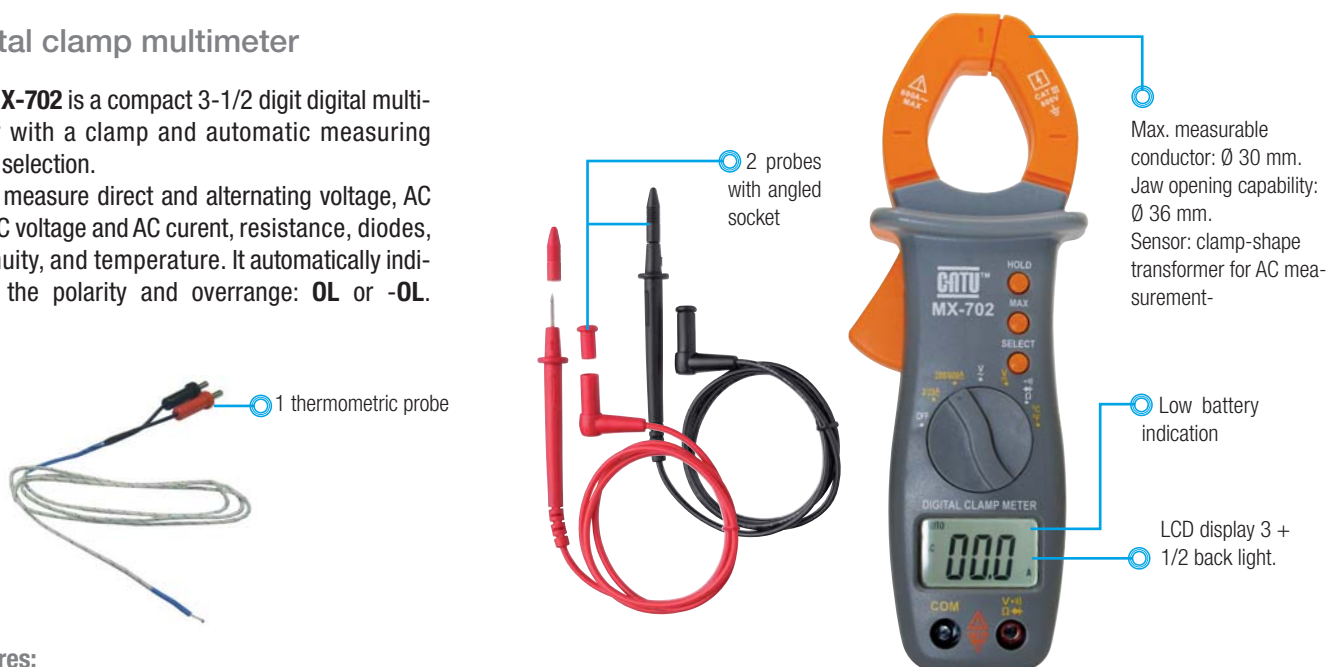
### Features:

Reference														
<b>MX-701</b> *	Voltage 200 mV to 600 V AC / DC	40 - 400 Hz	Intensity 200 $\mu$ A to 10 A AC / DC	Resistance 200 $\Omega$ to 20 M $\Omega$	Capacity 20 nF to 1 000 $\mu$ F	Class III	Category III 600 V	Use: 0 $^{\circ}$ C to +40 $^{\circ}$ C	Measure: -20 to +1000 $^{\circ}$ C 0 to +1800 $^{\circ}$ F	Screen display 3 + 1/2 digits	3 AAA 1.5 V batteries	2 probes in accessories	75x158x35	200

\* Delivered with 2 test probes or flexible cable, 2 thermometric probes, 2 crocodile clamps, batteries and storage bag.

## Digital clamp multimeter

The **MX-702** is a compact 3-1/2 digit digital multimeter with a clamp and automatic measuring range selection. It can measure direct and alternating voltage, AC and DC voltage and AC current, resistance, diodes, continuity, and temperature. It automatically indicates the polarity and overrange: **OL** or **-OL**.



### Features:

Reference														
<b>MX-702</b> *	Voltage 2 to 600 V AC 0.2 to 600 V DC	40 - 400 Hz	Intensity 2 to 600 A AC	Resistance 200 $\Omega$ to 20 M $\Omega$	Continuity "buzzer" < 50 $\Omega$	Class III	Category III 600 V	Use: 0 $^{\circ}$ C to +40 $^{\circ}$ C	Measure: -40 to +1000 $^{\circ}$ C -40 to +1832 $^{\circ}$ F	Screen display 3 + 1/2 digits	2 AAA 1.5 V batteries	2 probes in accessories	70x190x38	220

\* Delivered with 2 test probes on flexible cable, 1 thermometric probe, batteries and storage bag.




Ask your own **LV** Voltage Detector

**Detex**<sup>TM</sup>  
New generation **NG**

*The family  
grows!*

New generation of voltage check (VAT)  
operations and voltage detectors ....  
see page 54.

IEC 61243-3   
CE

**917-EX**

**920-EX**



**CATU**<sup>TM</sup>

[www.catuelec.com](http://www.catuelec.com)

**CATU**<sup>TM</sup>


# LV earthing systems


Overhead bare	68
Overhead insulating	69
LV Cabinets	70
Consumer unit	71





## Short-circuiting systems



IEC 61230   
CE

Reference	Composition	
MT-404	3 MT-411 + 1 MT-411-C	3 400
MT-405	4 MT-411 + 1 MT-411-C	3 800
MT-406	5 MT-411 + 1 MT-411-C	4 200
MT-407	6 MT-411 + 1 MT-411-C	4 600

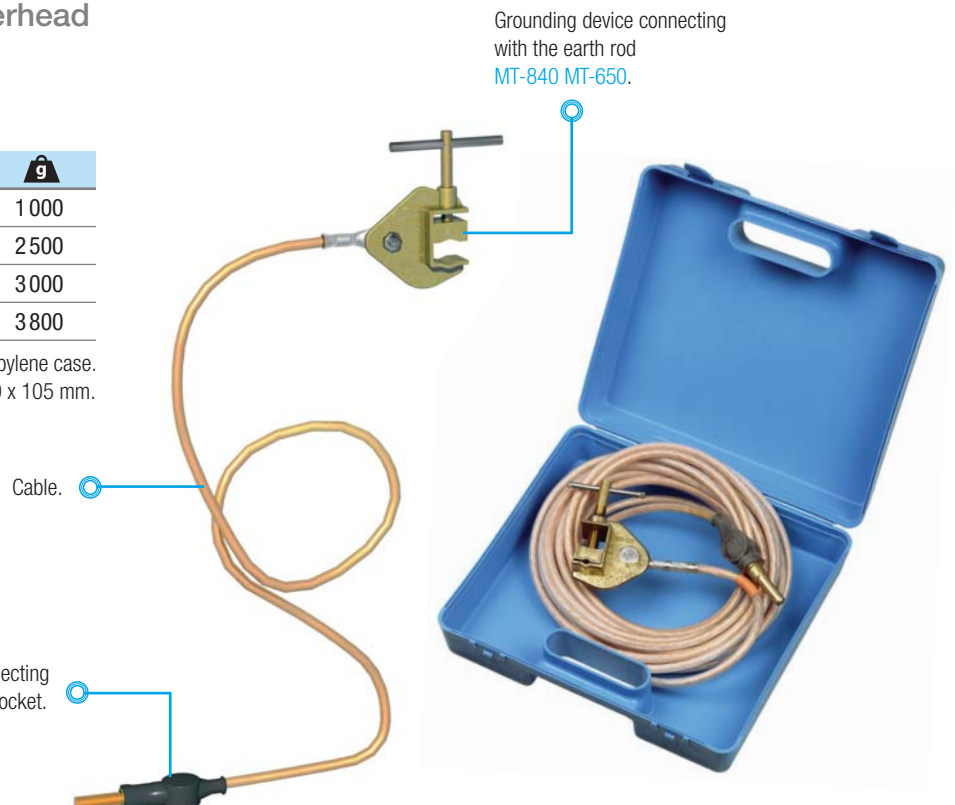


## Earthing equipment for overhead lines systems

Earth rod to be ordered separately.  
See below.

Reference	Cable 	Earth clamp	
MT-242	2 x 16	MT-840/1	1 000
MT-244	10 x 10	MT-840	2 500
MT-245	10 x 16	MT-840/1	3 000
MT-249	15 x 16	MT-840/1	3 800

Packaging: polypropylene case.  
310 x 280 x 105 mm.





### Lowlock system

For conductors 3 to 21 mm Ø.

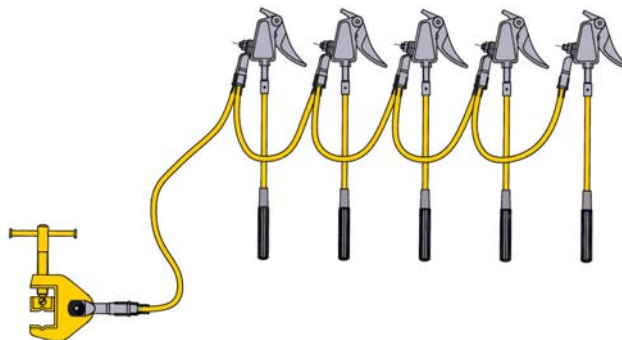
With clamps type "snap-on/screw-on".

Connecting cables: 35 mm<sup>2</sup> copper.

Short-circuiting and earthing systems

IEC 61230  
CE

Reference	Rating	Composition	g
MT-615/1-7,5	7.5	5 MT-616/1-03 contact clamps on handles (l = 0.35 m each) 4 braids of M-24-35 copper cable (1.00 m) 1 M-87-153 carrying bag 250 x 85 x 750 mm	3 000
MT-615/2-7,5	7.5	5 MT-616/1-03 contact clamps on handles 4 braids of M-24-35 copper cable (1.00 m) 1 braid of M-24-35 copper cable (7.00 m) 1 MT-840/1 earth clamp	6 500

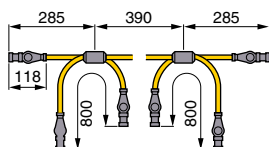


### Short-circuiting systems

Equipment includes either 5 or 6 copper-aluminium alloy stubs

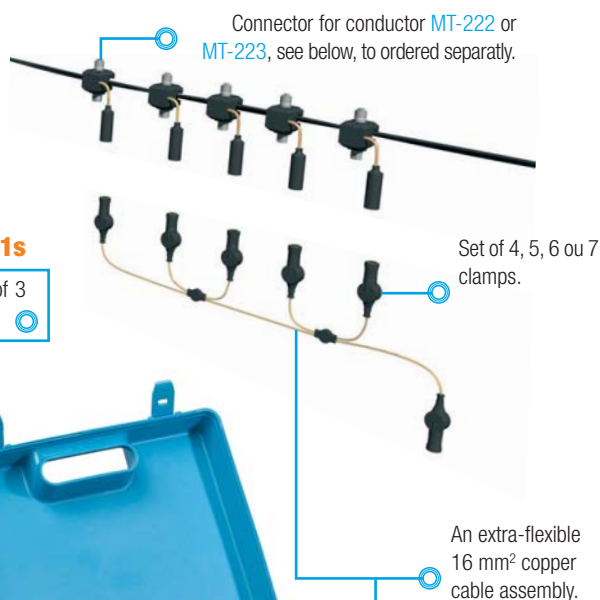
Reference	Socket	g
MT-205	5	1 100
MT-206	6	1 500
MT-207	7	1 900

Packaging: polypropylene case.  
234 x 215 x 75 mm.



Icc : 4 kA/1s

Composition of 3 references:



### A connector for conductors

Reference	mm x mm
MT-222	10 x 25
MT-223	35 x 70

Upon request, ability to connect with a male socket.

MT-222



### Earthing equipment

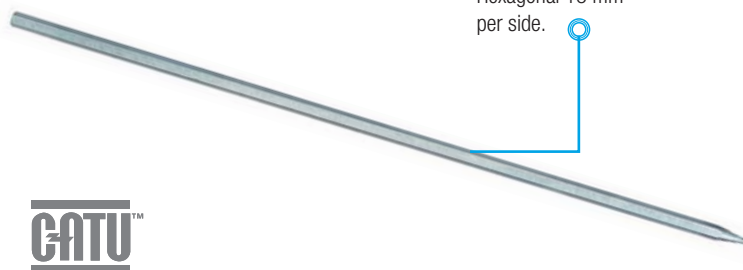
#### Earth rod

Earthing equipment with bayonet splicing for overhead lines systems

Reference	↔	g
MT-650	1 m	2 200

To be ordered in addition to short circuit and grounding equipment.

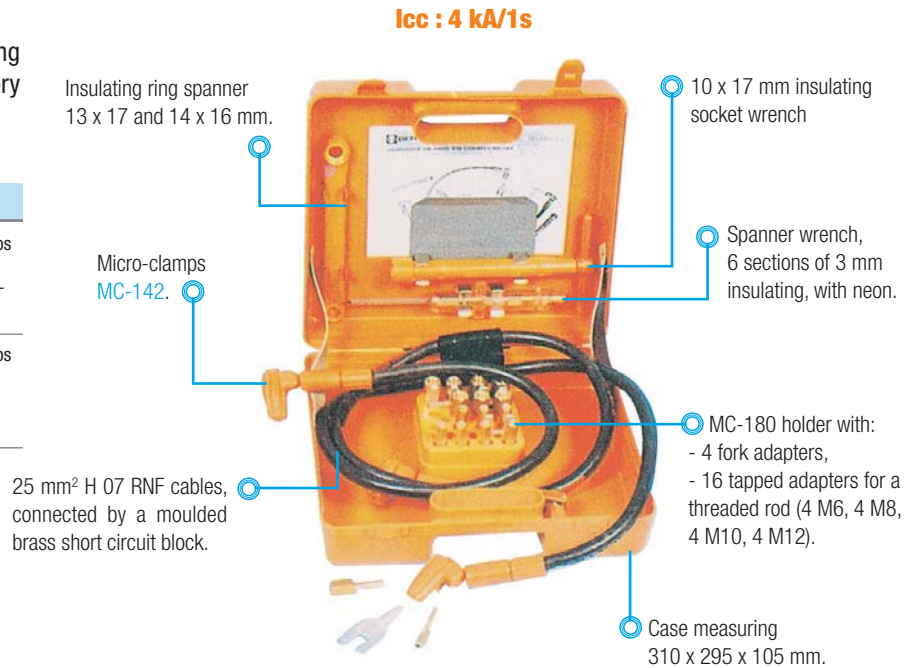
Galvanized steel.  
Hexagonal 18 mm per side.



## Short circuiting device for LV cabinet

For short-circuiting conductors from a starting point or a set of LV bars for powered off category 1 underground network work.

Reference	Composition
MC-244/1	4 H 07 RNF cables + 4 MC-142 micro-clamps + 1 MC-180 adaptor holder + 1 insulated socket wrench + 1 insulated ring spanner + 1 six-section spanner wrench + 1 case.
MC-245/1	5 H 07 RNF cables + 5 MC-142 micro-clamps + 1 MC-180 adaptor holder + 1 insulated socket wrench + 1 insulated ring spanner + 1 six-section spanner wrench + 1 case.



# CATU™

## Test laboratory



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ISO 9001 - ILO-OSH 2001  
OHSAS 18001 - ISO 14001



## Short-circuiting equipment

Device for low-voltage single-phase, three-phase, and tetraphase installations.

Extra flexible multi-strand copper cables 16 mm<sup>2</sup> with silicon sheath according to IEC-61230. Wide use temperature range (-40°C, +70°C). No toxic smokes emission in case of short circuit.

Reference	Characteristics	Ø
MC-296-320	Connection set 320 + 280 mm *	M8
MC-296-440	Connection set 440 + 370 mm *	M8
MC-296-440M12	Connection set 440 + 370 mm *	M12

\* Other models and length on request.

Set of: cartridge, connecting blade and jumper clamp.

Reference	Characteristics
M-95626/4*	Round cartridge HPC 22 x 58
M-95627/4*	Connecting blade
MC-296-P*	Jumper clamp, Ø 6-10 mm, plat 5 mm
MC-296-00/08*	Cartridge size 00

\* Set of 4.

Reference	Characteristics	g
MC-161	Manœuvring handle 125 x 75 x 23 mm	100

## Connecting blades M8 or M12

Reference	Characteristics	Ø
MC-296-115/08*	Between axes 115 mm	M8
MC-296-115/12*	Between axes 115 mm	M12
MC-296-160/12*	Between axes 160 mm	M12

\* Set of 4.

To be used with jumper cable (M8 or M12) connection cable (on request).

Additional equipment:

- Jumper cable (see page 92)
- Threated adapter (see page 93)

Kits can be built to order with the necessary equipment. Ref.: M-91209.

Icc : 4 kA/1s

IEC 61230



MC-161



MC-296-115/08



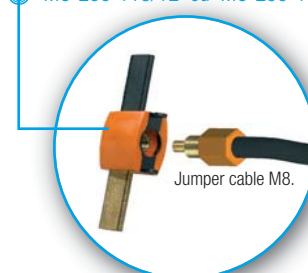
MC-296-115/12



MC-296-160/12



MC-296-115/12 ou MC-296-115/08



MC-296-160/12





# The world



# of electrical safety

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all your electrical safety equipment needs



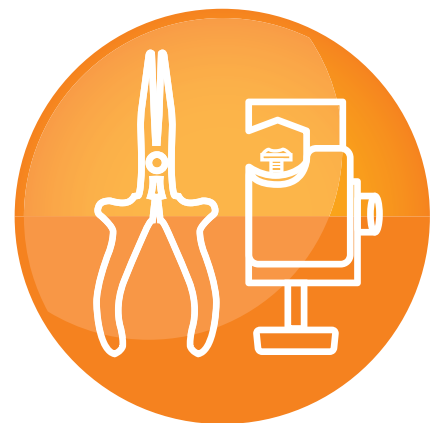
Just contact us !





# LV Live working tools

Insulated tools	74
Tool sets	88
Jumper clamps, cables and accessories	91
Cover-up equipment	94
Insulating sticks	96
Cable identifier	97



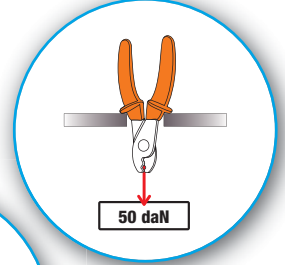
# Insulated Tools

Find the tools to meet your needs!

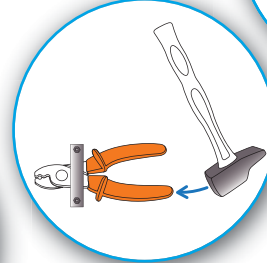
Insulated tools must comply with the **NF EN 60900** and **IEC 60900** standards. To meet these standards, insulated tools undergo 10,000 volts through electrical testing and many mechanical tests, including impact tests, tearing tests, and puncture tests.



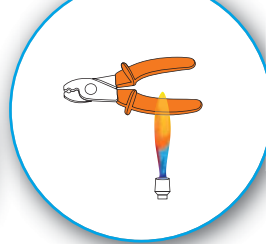
Tearing Tests



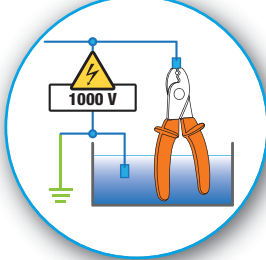
Impact Test



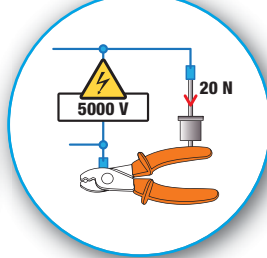
Fire-Resistance Test



Dielectric Tests



Dielectric Tests

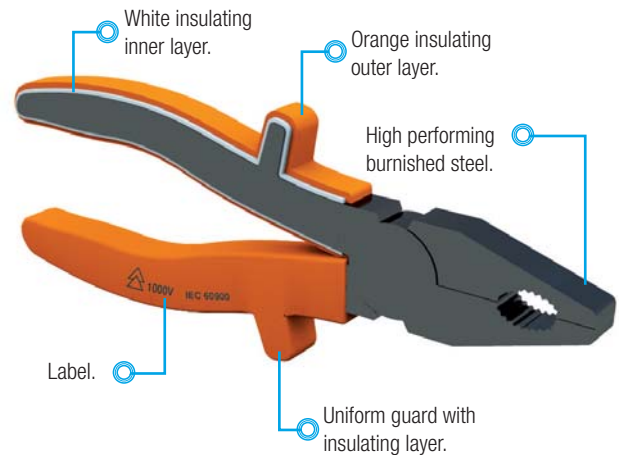
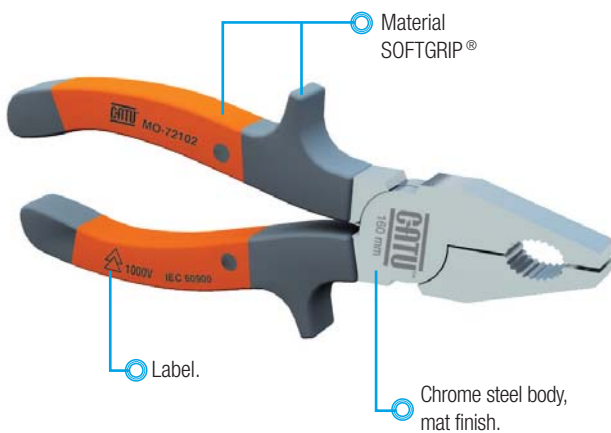


**ISOMIL™**

Dual Layer Insulating Tools

**ISOMIL™ 2**

Dual Material Insulating Tools



## SPECIAL FEATURES

- Products suitable for work on live cables, particularly low voltage (30 cm area of a live bare wire).
- Ergonomic.
- Dual material with non-skid "SOFTGRIP"® injected material for operator comfort.





## SPECIAL FEATURES

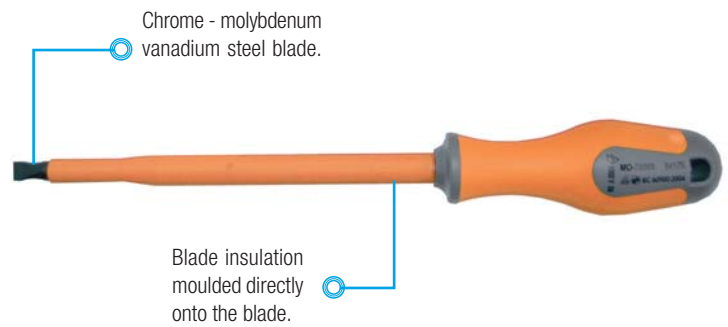
- Extensive product line for work on live cables; mainly used by LV Live Line Working teams.
- Ergonomic.
- Dual-layer with a white insulating layer.
- High mechanical strength in the layers due to dipping technique.
- Steel with high mechanical properties.





## Insulated tools

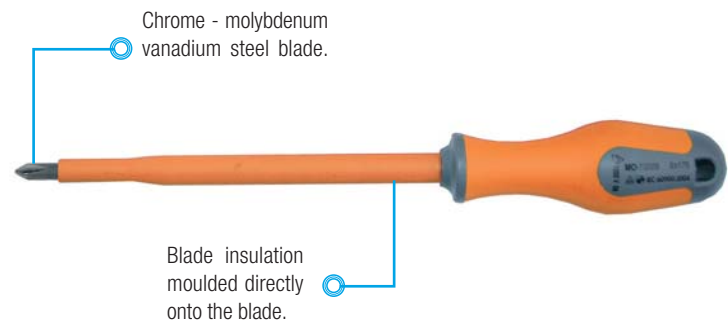
## Flat blade screwdrivers

Reference	Ø mm	 mm	 g
MO-72003	3	100	40
MO-72004	3.5	100	43
MO-72005	4	100	58
MO-72006	5.5	125	76
MO-72007	6.5	150	112
MO-72009	8	175	171






## POZIDRIV screwdrivers

Reference	N°	Ø mm	 mm	 g
MO-72040	0	3	60	37
MO-72042	1	4.5	80	58
MO-72044	2	6	100	91
MO-72046	3	8	150	170






## Universal plier

Reference	 mm	 Cu / Al	 g
MO-72102	180	Ø 2.5 max	255



## Bent snipe nose plier

Reference	 mm	 Cu / Al	 g
MO-72142	160	Ø 2.5 max	140



### Flat nose plier

Reference	mm	g
MO-72132	160	140

Special steel,  
chrome mat  
finished.



### Round nose plier

Reference	mm	g
MO-72122	160	140

Special steel,  
chrome mat  
finished.



### Side cutter

Reference	mm	Cu / Al	g
MO-72162	160	Ø 4 max	212

Special steel,  
chrome mat  
finished.



### Cable cutter

Reference	mm	Cu / Al	g
MO-72200	160	Ø 5 max	238

Special steel,  
chrome mat  
finished.



### Wire stripping plier

Reference	mm	Cu / Al	g
MO-72172	160	Ø 5 max	166

Special steel,  
chrome mat  
finished.



### Water pump plier

Reference	mm	g
MO-72155	250	347

Special steel.



mm Total length

g Weight

mm Stripping capacity

mm Cutting capacity

CATU™



## Screwdrivers kit

Reference	KIT-23
Composition	
MO-72004	Flat blade screwdriver 3.5 x 100 mm
MO-72006	Flat blade screwdriver 5.5 x 125 mm
MO-72009	Flat blade screwdriver 8 x 175 mm
MO-72042	Pozidriv screwdriver n°1 4.5 x 80 mm
MO-72044	Pozidriv screwdriver n°2 6 x 100 mm



## Pliers kit

Reference	KIT-27
Composition	
MO-72102	Universal plier 180 mm
MO-72155	Water pump plier 250 mm
MO-72172	Wire stripping plier 160 mm
MO-72142	Bent snipe nose plier 160 mm
MO-72200	Cable cutter 170 mm



## Intervention kit

Reference	KIT-24
Composition	
MO-72004	Flat blade screwdriver 3.5 x 100 mm
MO-72006	Flat blade screwdriver 5.5 x 125 mm
MO-72009	Flat blade screwdriver 8 x 175 mm
MO-72042	Pozidriv screwdriver n°1 4.5 x 80 mm
MO-72044	Pozidriv screwdriver n°2 6 x 100 mm
MO-72172	Wire stripping plier 160 mm
MO-72142	Bent snipe nose plier 160 mm
MO-72200	Cable cutter 160 mm





## Complete intervention kit

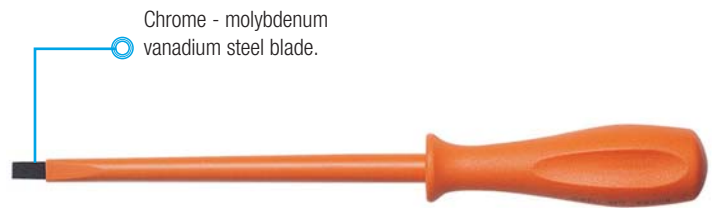
Reference	KIT-25
Composition	
MO-72004	Flat blade screwdriver 3.5 x 100 mm
MO-72006	Flat blade screwdriver 5.5 x 125 mm
MO-72009	Flat blade screwdriver 8 x 175 mm
MO-72042	Pozidriv screwdriver n°1 4.5 x 80 mm
MO-72044	Pozidriv screwdriver n°2 6 x 100 mm
MO-72102	Universal plier 180 mm
MO-72155	Water pump plier 250 mm
MO-72172	Wire stripping plier 160 mm
MO-72142	Bent snipe nose plier 160 mm
MO-72200	Cable cutter 160 mm







## Flat blade screwdrivers

Reference	Ø mm	 Blade length mm	 Weight g
MO-65202	6,5	40	38
MO-65203	3	100	33
MO-65204	3,5	100	37
MO-65205	4	100	46
MO-65206	5,5	125	75
MO-65207	6,5	150	94
MO-65209	8	175	165
MO-65211	10	200	195
MO-650-D	Set of 3 screwdrivers MO-65205 / MO-65207 / MO-65209		
MO-652-D	Set of 4 screwdrivers MO-65203 / MO-65205 / MO-65207 / MO-65209		





## POZIDRIV screwdrivers

Reference	N°	Ø mm	 Blade length mm	 Weight g
MO-65240	0	3	60	25
MO-65242	1	4,5	80	50
MO-65244	2	6	100	75
MO-65246	3	8	150	150
MO-65248	4	10	200	230





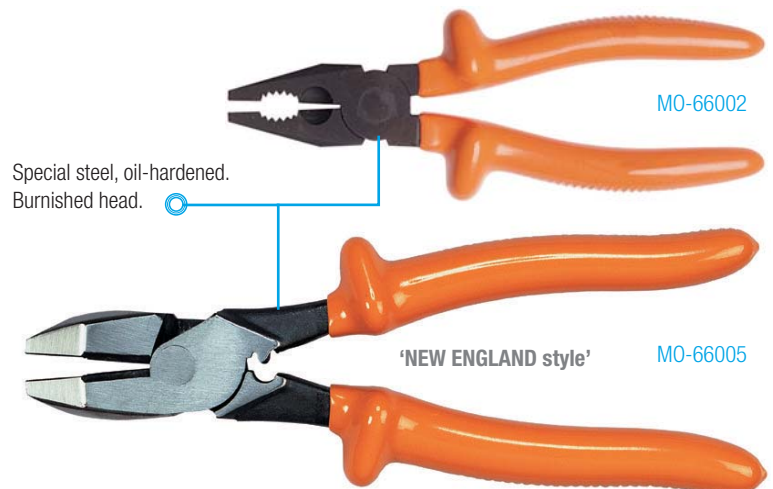
## PHILLIPS screwdrivers

Reference	N°	Ø mm	 Blade length mm	 Weight g
MO-65230	0	3	60	25
MO-65232	1	4,5	80	50
MO-65234	2	6	100	75
MO-65236	3	8	150	150
MO-65238	4	10	200	230
MO-653-D	Set of 3 screwdrivers N°0, N°2 et N°3			



## Universal pliers

Reference	 Total length mm	 Weight g
MO-66001	160	210
MO-66002	180	260
MO-66003	200	300
MO-66005	250	510





### Flat nose plier

Reference	mm	g
MO-66300	145	115
MO-66302	160	160

Special steel, oil-hardened.  
Burnished head.



### Bent snipe nose pliers

Reference	mm	g
MO-66402	160	160
MO-66404	200	185

Special steel, oil-hardened.  
Burnished head.



### Round nose plier

Reference	mm	g
MO-66202	160	150

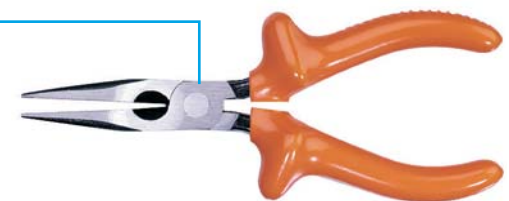
Special steel, oil-hardened.  
Burnished head.



### Long nose plier with side cutter

Reference	mm	g
MO-66102	160	145

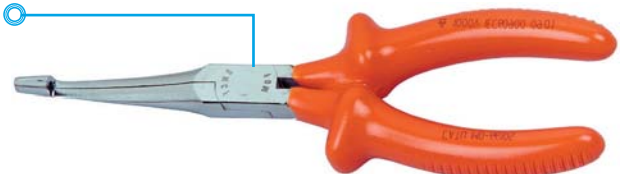
Special steel, oil-hardened.  
Burnished head.



### Plug plier for preinsulating pin terminals

Reference	mm	g
MO-66105	200	200

Chrome-vanadium steel  
for pin terminals  
2.8/5/6.35 mm.



## Waterpump plier

Reference	mm	g
MO-66502	250	410



Chrome-vanadium steel.

Burnished head.



## Side cutters

Reference	mm	Soft wire 80 kg/mm <sup>2</sup>	Hard wire 140 kg/mm <sup>2</sup>	g
MO-67101	140	Ø 2 max	Ø 1 max	150
MO-67102	160	Ø 2,5 max	Ø 1,5 max	180
MO-67103	180	Ø 3 max	Ø 2,5 max	210



Special carbon steel,  
oil-hardened.

Burnished head.

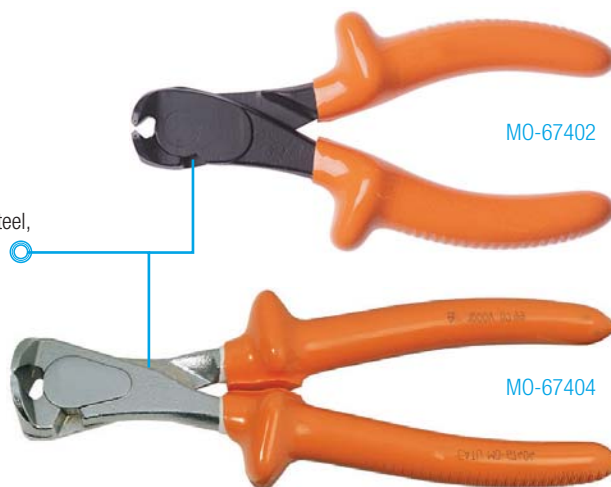


## End cutting pliers

Reference	mm	Soft wire 80 kg/mm <sup>2</sup>	Hard wire 140 kg/mm <sup>2</sup>	g
MO-67401	140	Ø 2 max	Ø 1 max	165
MO-67402	160	Ø 3 max	Ø 2 max	210
MO-67404	200	Ø 4 max	Ø 3 max	450



Special carbon steel,  
oil-hardened.



## Cable cutter

Reference	mm	mono-strand section mm <sup>2</sup>	mono-strand section mm <sup>2</sup> + video Ø 6 mm	g
MO-67500	180	2,5 max	16 max	420



Chrome-vanadium  
forged steel  
oil-hardened.





## Insulated tools

## Cable cutters

Reference	mm	mm	g
MO-67501	170	Ø 15 max	285
MO-67502	230	Ø 20 max	520

Chrome-vanadium forged steel oil-hardened.





MO-67501



MO-67502

## Ratchet cable cutters

Reference				
	mm	Copper section mm²	Aluminium section mm²	
MO-67599	Ø 32 <small>max</small>	180	250	900
MO-67600	Ø 38 <small>max</small>	240	300	950
MO-67601	Ø 55 <small>max</small>	300	450	975

Treated forged steel blade.





MO-67599



MO-67600

## Frontal ratchet cable cutter

Reference				
	mm	Copper section mm <sup>2</sup>	Aluminium section mm <sup>2</sup>	
MO-67611	Ø 32 <sub>max</sub>	180	250	900

Treated forged steel blade.



mm Total length

mm Cutting capacity

g Weight

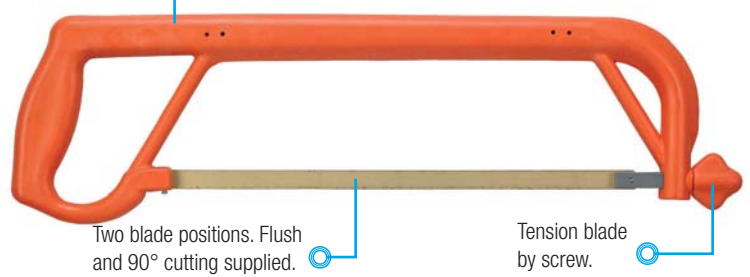
CATU™

## Hacksaw

Reference	mm	mm	g
MO-64502	450	300	780

Delivered with 2 blades.

Protected  
hard forged  
steel.



Two blade positions. Flush  
and 90° cutting supplied.

Tension blade  
by screw.

## Wire stripping plier

Reference	mm	Stripping capacity mm²	g
MO-67302	160	de 0.6 à 10	170

Chrome vanadium  
steel. Burnished  
head.



## Stripping plier for LV cables

Reference	mm	Stripping capacity mm²	g
MO-67304	220	de 16 à 150	470

Aluminium  
casting plier.



## Stripping pliers for LV cables

Reference	mm	Stripping capacity mm²	g
MO-67305	265	de 16 à 150	650
MO-67306	270	de 50 à 240	670

Aluminium casting  
plier.



## Stripping knives

Reference	mm	mm	g
MO-61001	180	62	110
MO-61002	180	50	110

Delivered with pouch.



Curved blade.

mm Total length

g Weight

mm Blade length

mm Stripping capacity

CATU™





## Insulated tools

### Adjustable spanners

Reference	mm	mm	g
MO-69002	210	24 max	295
MO-69003	250	28 max	450
MO-69004	310	34 max	550
MO-69005	385	43 max	1 350



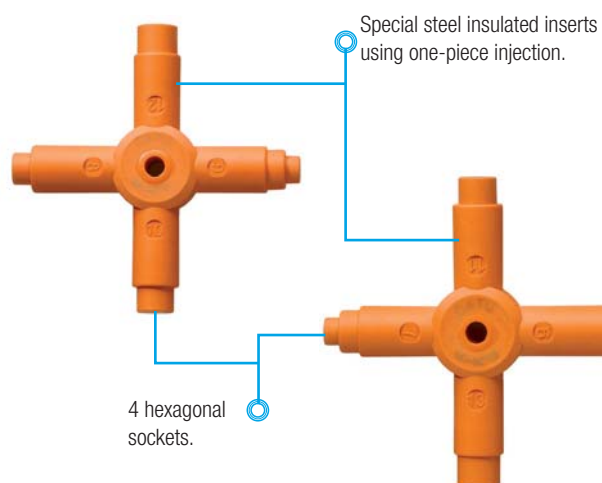
### Reversible hexagonal ratchet handles

Reference	mm	g
MO-69210	10	160
MO-69213	13	190
MO-69216	16	350
MO-69217	17	370
MO-69218	18	380
MO-69219	19	390



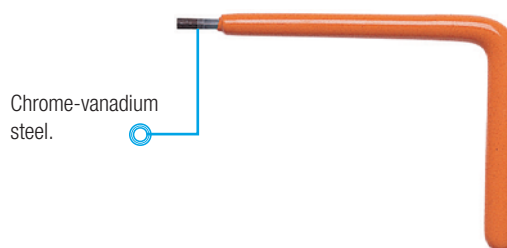
### Combination wrenches

Reference	mm	mm	g
MO-68701	150 x 150	6-8-10-12	225
MO-68702	150 x 150	8-10-12-14	260
MO-68703	150 x 150	7-9-11-13	250
MO-68704	150 x 150	8-10-13-17	260



### Right angle hexagonal key wrenches

Reference	mm	mm	g
MO-69903	83 x 123	3	30
MO-69904	84 x 124	4	40
MO-69905	84 x 126	5	50
MO-69906	85 x 126	6	70
MO-69908	87 x 128	8	110
MO-69910	87 x 130	10	150
MO-69912	90 x 132	12	240



mm Total length

mm Maximal opening





g Weight

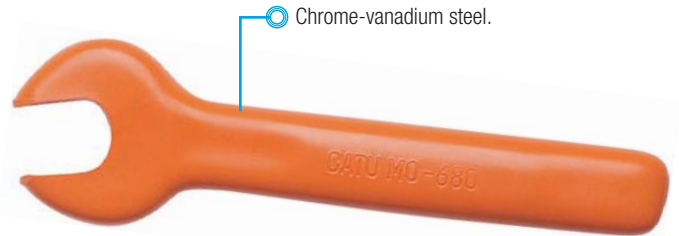
mm Diameter

mm Dimensions





**CATU**

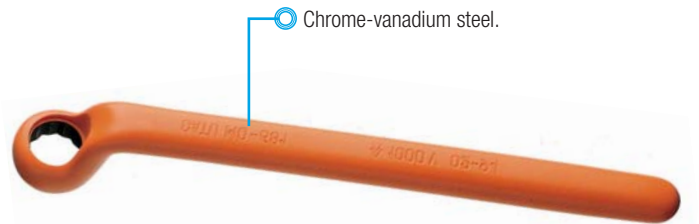
## Open end spanners

Reference	 mm	 g	Reference	 mm	 g
<b>MO-68008</b>	8 max	40	<b>MO-68020</b>	20 max	185
<b>MO-68009</b>	9 max	40	<b>MO-68021</b>	21 max	200
<b>MO-68010</b>	10 max	45	<b>MO-68022</b>	22 max	220
<b>MO-68011</b>	11 max	50	<b>MO-68023</b>	23 max	250
<b>MO-68012</b>	12 max	60	<b>MO-68024</b>	24 max	260
<b>MO-68013</b>	13 max	80	<b>MO-68025</b>	25 max	280
<b>MO-68014</b>	14 max	100	<b>MO-68026</b>	26 max	300
<b>MO-68015</b>	15 max	110	<b>MO-68027</b>	27 max	340
<b>MO-68016</b>	16 max	120	<b>MO-68028</b>	28 max	360
<b>MO-68017</b>	17 max	140	<b>MO-68029</b>	29 max	400
<b>MO-68018</b>	18 max	160	<b>MO-68030</b>	30 max	500
<b>MO-68019</b>	19 max	170	<b>MO-68032</b>	32 max	570
<b>MO-68008/19</b>	8 open end spanners set: 8 / 10 / 11 / 12 / 13 / 14 / 17 / 19 mm				685





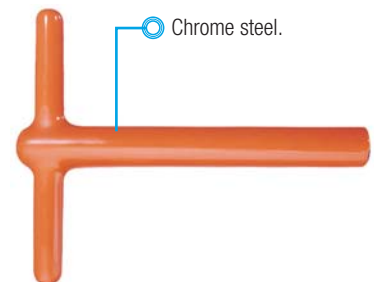
## Cranked ring wrenches

Reference	 mm	 g	Reference	 mm	 g
<b>MO-68107</b>	7	35	<b>MO-68120</b>	20	240
<b>MO-68108</b>	8	40	<b>MO-68121</b>	21	260
<b>MO-68109</b>	9	45	<b>MO-68122</b>	22	260
<b>MO-68110</b>	10	50	<b>MO-68123</b>	23	270
<b>MO-68111</b>	11	65	<b>MO-68124</b>	24	280
<b>MO-68112</b>	12	80	<b>MO-68125</b>	25	300
<b>MO-68113</b>	13	100	<b>MO-68126</b>	26	360
<b>MO-68114</b>	14	120	<b>MO-68127</b>	27	400
<b>MO-68115</b>	15	150	<b>MO-68128</b>	28	440
<b>MO-68116</b>	16	180	<b>MO-68129</b>	29	480
<b>MO-68117</b>	17	190	<b>MO-68130</b>	30	500
<b>MO-68118</b>	18	195	<b>MO-68132</b>	32	540
<b>MO-68119</b>	19	200	—	—	—



## Hexagonal spanners with T handle

Reference	 mm	 g
<b>MO-68610</b>	10	145
<b>MO-68613</b>	13	185
<b>MO-68614</b>	14	220





## Sockets wrenches sets



MO-69524

MO-69308/23

MO-69543

## Sockets 3/8" (9.53 mm)-6 sided

Reference	Ø mm	g
MO-69306	6	25
MO-69307	7	30
MO-69308*	8	30
MO-69309	9	30
MO-69310*	10	35
MO-69311	11	35
MO-69312*	12	35
MO-69313*	13	45
MO-69314*	14	45
MO-69315	15	50
MO-69316	16	55
MO-69317*	17	60
MO-69318	18	65
MO-69319*	19	70
MO-69321*	21	85
MO-69322*	22	90
MO-69323*	23	100
MO-69513*	Reversible ratchet	600
MO-69523*	Extension 130	124
MO-69533	Extension 250	270
MO-69542	T wrench 130	220
MO-69543	T wrench 200	380
MO-69308/23	Complete sockets 410 x 120 x 75	1 250

\* Sockets composing the sets.

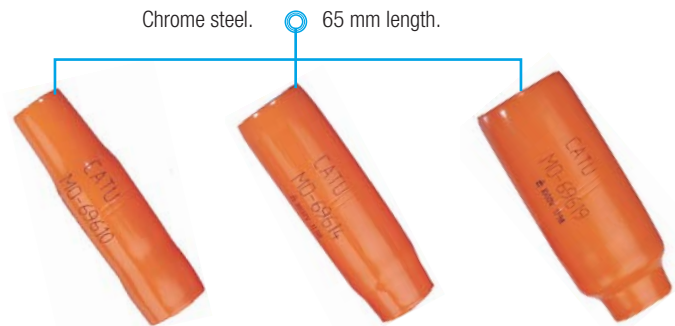
## Sockets 3/8" (9.53 mm)-6 sided

Reference	Ø mm	g
MO-69408*	8	60
MO-69410*	10	60
MO-69411	11	60
MO-69412*	12	70
MO-69413*	13	70
MO-69414*	14	70
MO-69415	15	75
MO-69416	16	75
MO-69417*	17	80
MO-69418	18	80
MO-69419*	19	85
MO-69420	20	90
MO-69421*	21	100
MO-69422*	22	100
MO-69423*	23	115
MO-69424	24	130
MO-69430	30	160
MO-69514*	Reversible ratchet	600
MO-69524*	Extension 125	250
MO-69534	Extension 250	435
MO-69544	T wrench 300	520
MO-69408/23	Complete sockets 410 x 120 x 75	1 500

\* Sockets composing the sets.

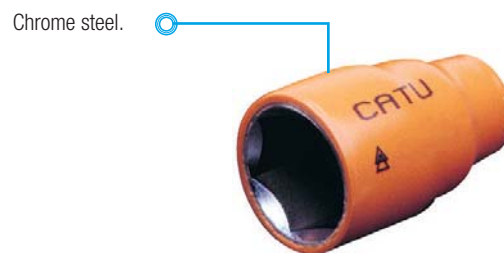
## Sockets 3/8" Long series

Reference	Ø mm	g	Reference	Ø mm	g
MO-69610	10	70	MO-69618	18	140
MO-69612	12	75	MO-69619	19	160
MO-69613	13	80	MO-69621	21	190
MO-69614	14	100	MO-69622	22	200
MO-69616	16	115	MO-69624	24	220
MO-69617	17	125	—	—	—



## Sockets 3/8" U.S Standard

Reference	Ø mm	g
MO-69735	3/8"	25
MO-69736	7/16"	30
MO-69737	1/2"	35
MO-69738	9/16"	35
MO-69739	5/8"	42
MO-69740	11/16"	50
MO-69741	3/4"	55
MO-69742	13/16"	60



## 6 sided male hex Key / Socket 3/8"

Reference	Ø mm	g
MO-69393	3	45
MO-69394	4	55
MO-69395	5	60
MO-69396	6	65
MO-69397	7	70
MO-69398	8	70
MO-693100	10	80



## Insulated torque wrench 3/8"

Reference	mm	F <sub>Nm</sub>	g
MO-69050	330	de 8 à 50 Nm	790



## Electrician's scissors

Reference	mm	g
MO-72100	145	62







## Screwdrivers kit

Reference	KIT-03
Composition	
MO-65242	Pozidriv screwdriver N°1
MO-65244	Pozidriv screwdriver N°2
MO-65204	Flat blade screwdriver 3.5 x 100 mm
MO-65206	Flat blade screwdriver 5.5 x 125 mm
MO-65209	Flat blade screwdriver 8 x 175 mm



## Pliers kit

Reference	KIT-07
Composition	
MO-66002	Universal pliers overall length 180 mm
MO-66502	Water pump pliers overall length 250 mm
MO-67302	End stripping pliers 160 mm
MO-66402	Bent snipe nose pliers overall 160 mm
MO-67500	Cable cutter 170 mm



## Intervention kit

Reference	KIT-04
Composition	
MO-65242	Pozidriv screwdriver N°1
MO-65244	Pozidriv screwdriver N°2
MO-65204	Flat blade screwdriver 3.5 x 100 mm
MO-65206	Flat blade screwdriver 5.5 x 125 mm
MO-65209	Flat blade screwdriver 8 x 175 mm
MO-67302	End stripping pliers overall 160 mm
MO-66402	Bent snipe nose pliers overall 160 mm
MO-67500	Cable cutter 170 mm





## Complete intervention kit

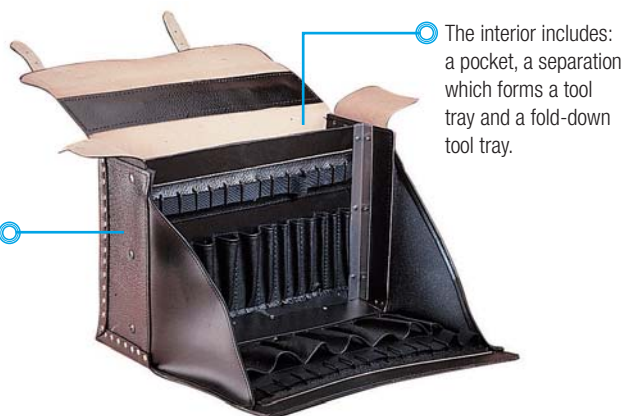
Reference	KIT-05
Composition	
MO-65242	Pozidriv screwdriver N°1
MO-65244	Pozidriv screwdriver N°2
MO-65204	Flat blade screwdriver 3.5 x 100 mm
MO-65206	Flat blade screwdriver 5.5 x 125 mm
MO-65209	Flat blade screwdriver 8 x 175 mm
MO-66002	Universal pliers overall 180 mm
MO-66502	Water pump pliers overall 250 mm
MO-67302	End stripping pliers overall 160 mm
MO-66402	Bent snipe nose pliers overall 160 mm
MO-67500	Cable cutter 170 mm





## Tool bag

Reference		
<b>M0-34</b>	410 x 280 x 150	3 200

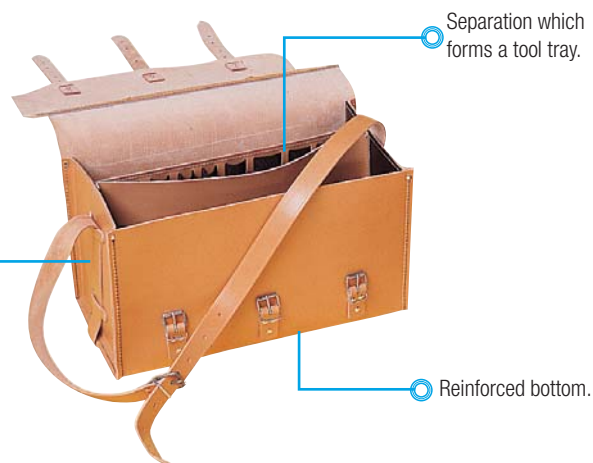
Black grained leather with handle.





## Tool bag

Reference		
<b>M0-36</b>	200 x 250 x 450	4 800

Silicon grain leather totally sewn. Strong leather handle and shoulder strap.



## Tool bag



Reference		
<b>M-87370*</b>	440 x 330 x 160	1 100

\* Delivered without tools.

Waterproof canvas strap with transportation.



## Soft case

Reference		
<b>M-87303*</b>	500 x 380 x 60	1 000

\* Delivered without tools.

Strong waterproof, canvas





Low voltage complete set.  
Complete equipment for live line (LV) interventions.



Reference	MO-510-03-EX*
Personal equipment	
MO-186	1 face shield
CG-98-C	1 working gloves size C
CG-05-B	1 rubber gloves size B
CG-36	1 carrying bag for rubber gloves
MP-42/16	1 insulating mat 3 mm
Voltage detector	
MS-917 EX	1 voltage detector
Insulating	
MP-26-A	10 insulating caps
MP-35/12	1 insulating blanket
MP-39	10 wood clamps for insulating blanket
MP-32/15	6 line protectors 1.50 m
MP-19	5 insulating adhesive tapes
Insulating tools	
MO-61001	1 stripping knife
MO-67502	1 cable cutter 230 mm
MO-68008/19	1 open end spanners set with 8 / 10 / 11 / 12 / 13 / 14 / 17 / 19 mm

\* Delivered without tool bag.

following... MO-510-03-EX *	
Insulating tools	
MO-69903	1 right angle hexagonal key wrench 3 mm
MO-69904	1 right angle hexagonal key wrench 4 mm
MO-69906	1 right angle hexagonal key wrench 6 mm
MO-751	1 insulating folding rule
MO-69003	1 adjustable spanner 250 mm
MO-66002	1 universal pliers 180 mm
MO-66202	1 round nose pliers 160 mm
MO-66502	1 water pump pliers 250 mm
MO-67102	1 side cutter 160 mm
MO-69308/23	1 sockets 3/8" wrench set with 10 sockets: 8, 10, 12, 13, 14, 17, 19, 21, 22, 23
MO-65205	1 flat blade screwdriver 4 x 100
MO-65207	1 flat blade screwdriver 6.5 x 150
MO-65209	1 flat blade screwdriver 8 x 175
MO-65232	1 Phillips screwdriver n° 1
MO-65234	1 Phillips screwdriver n° 2
MO-65236	1 Phillips screwdriver n° 3

\* Delivered without tool bag.

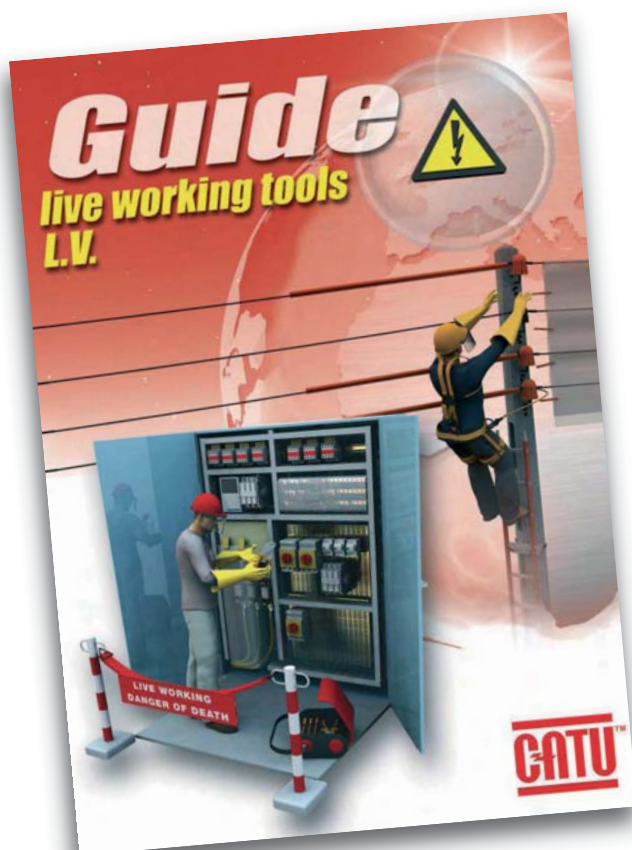
Bag tool bag to order separately

Reference	Characteristics
MO-34	Leather tool bag , see page 88
MP-01	Bags for insulating mats, see page 25

Reference	Characteristics
M-87384	Bag for face shield and helmet, see page 18
M-87386	Multi-pocket electrician bag, see page 25

## Intervention kit for electricians

Reference	MO-38510
Composition	
M-87370	1 tool bag
CG-05-C	1 pair of insulating gloves size C
MO-11001	1 safety glasses
AL-230-111	1 safety padlock
MO-65204	Flat blade screwdriver - 3.5 x 100 mm
MO-65206	Flat blade screwdriver - 5.5 x 125 mm
MO-65209	Flat blade screwdriver - 8 x 175 mm
MO-65242	Pozidriv screwdriver - N°1 4.5 x 80 mm
MO-65244	Pozidriv screwdriver - N°2 6 x 100 mm
MO-66002	Universal plier - length 180 mm
MO-66402	Bent snipe nose plier - length 160 mm
MO-67302	End stripping plier - length 160 mm
MO-67500	Cable cutter - length 170 mm
MO-66502	Water pump plier - length 250 mm



**To help you in  
LV Live working,  
your guide is  
available.**

Our guides and catalogues are available on request or downloadable from our website:

**[www.catuelec.com](http://www.catuelec.com)**





## Jumper clamps, cables and accessories

### Mini jumper clamps fully insulated for switchboard use

These clamps are specially designed for use on energized parts in LV installations (switchboards, etc.) to make temporary connections. Isolated bronze jaws designed to axially grip conductors can be used on threaded bolts or shanks and nuts. All other models in this series tighten with T-handle screw, and receive cable terminals

Reference	mm	g
MC-141	150 x 75 x 25	200
MC-142	33 x 38 x 58	130
MC-143	115 x 70 x 25	150
MC-144	23 x 75 x 150	280
MC-145	23 x 70 x 110	220
MC-146	23 x 70 x 110	230
MC-147	100 x 70 x 25	100
MC-147/1	100 x 70 x 25	100
MC-148	80 x 70 x 25	150
MC-148/1	80 x 65 x 25	100
MC-149	160 x 60 x 55	300

MC-141

Six-sided 17-19 mm.

MC-142

Axial (at cable end)  
+ transversal

Adjustable clamp  
round Ø 6-10 mm  
flat 5 mm.

MC-143

Flat bar, thickness  
2-25 mm.

MC-144

Round 8-12  
square 9-10 mm.

Axial

MC-145

Wire clamp for  
stripped cables  
Ø 3 to 10 mm.

Transversal

MC-146

Wire clamp for  
stripped cables  
Ø 10 to 24 mm.

Transversal

MC-149

Flat bar, thickness  
20-30.

MC-147

Threaded rod M8 MC-147.  
Threaded rod M10 MC-147/1.

MC-148

For shunt 200 A.

Clamp with tapped revolving rod  
end M8, 200 A shunt. To be used  
with an insulating six-sided male  
hex key 5 mm.

MC-148/1

For 10 to 50 mm  
cable.

Clamp with tapped  
revolving rod end M8.

## Jumper cables

LV live working tools.

Reference	mm	g	Sections mm <sup>2</sup>
MC-153/05	500	270	35
MC-153/10	1 000	570	35
MC-153/30	3 000	1 720	35
MC-153/60	6 000	3 460	35
MC-155/05	500	380	50
MC-155/10	1 000	760	50
MC-155/20	2 000	1 520	50
MC-155/30	3 000	2 280	50
MC-155/60	6 000	4 560	50
MC-155/80	8 000	6 080	50

Isolated copper cable  
H 07 RN-F.  
Nominal intensity  
200 A.

Delivered with socket  
screwing ISO M8

Insolated cover.

## Jumper cable with insulated jumper clamps

Reference	mm	g
MC-121	60 x 25	50
MC-122	125 x 35	100
MC-123	125 x 35	100
MC-124	125 x 35	100

Junction.

MC-121

Fuse holder for Shunt.

MC-122  
piece female-female.

MC-123  
piece male-female.

Fuse holder for 30 A for Clamps + banana plug.

MC-124  
piece male-female.

## Jumper cable with insulated jumper clamps

Reference	mm	g
MC-120/15	1 500	850
MC-120/50	5 000	1 950
MC-120/100	10 000	4 000

2 clamps MC-120.  
150 x 100 x 60 mm  
and 190 g each.  
Tightening capacity.  
12 mm (- flat).  
Spring tightening.

Cable H 07 RN-F of 25 mm<sup>2</sup>  
Continuous rating: 75 A.

Connector for  
cable 8 mm.  
Rated insulation:  
1 500 V.  
Icc = 5 kA/1 s.



## Jumper clamps, cables and accessories

### Threaded adapter

Reference	Dimensions	Diameter	Weight
MC-181	50 x 13	M10	50
MC-182	50 x 10	M8	27
MC-183	50 x 17	M12	48

Set of 4 adapters by reference.

MC-181



MC-182



MC-183



Cylindrical body diameter 10 mm to fits on panel network thread of switchboard etc...  
Total length 50 mm.

### Shunt Telescopic probe

Reference	Sections mm <sup>2</sup>	Intensity
MC-126	de 1.5 à 16	60 A
MC-126/1	de 10 à 70	100 A

Reference	Dimensions	Weight
MC-150	173 x Ø 32	185

MC-126



Connector with insulated probe.

MC-150

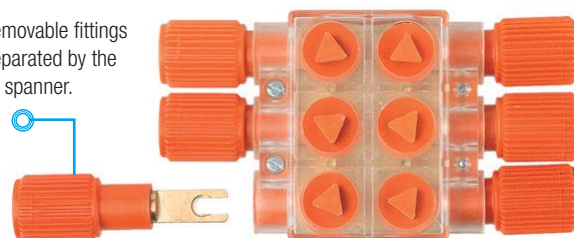


Cover retractable accessory.

### Tap off box

Reference	Characteristics
MC-156	Box 40 x 80 x 158 mm
MC-156/1	Spare part
MC-237-D	Triangular spanner witch T hande

The six removable fittings can be separated by the triangular spanner.



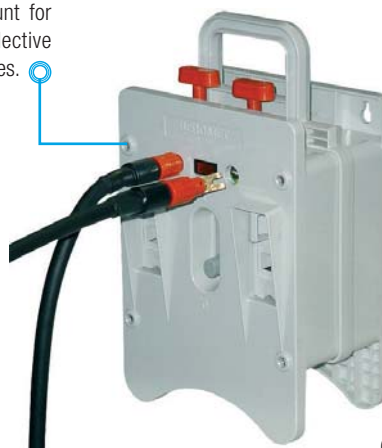
The tap off box allows on each side to connect 3 by pass jumpers.

### Jumper connecting box with fuse

Reference	Intensity
MC-116	de 30 à 200 A

The shunt for collective channeling is a box used to make sure, before proceeding to the replacement of a molten fuse situated on a channeling, that the defect which brought about the molten is eliminated. This box is used with a fuse when the (nominal) assigned intensity of the channeling is < 100 A and with 2 fuses when this intensity is included between 100 A and 200 A. It can also be used to open a circuit in load, for example to change a damaged accessory such as a pin.

Shunt for collective pipes.



Other connecting box: consult us.

## Insulator cover

For LV insulator.

Reference	Characteristics	mm	mm	g
MP-22	Line insulator	150 Height	110	475
MP-23	Dead end insulator	210 Height	180	1 145

Synthetic orange colour rubber.



Steel suspension hook.

Reinforced bottom and rope handle.

Strong waterproof.

## Bag for insulator cover

Reference	mm	g
MP-50	Ø 300 x H 400 mm	650

## Conductor insulating end - cap

Reference	mm	Out	mm	In	mm
MP-26-A	10	6,5	60		
MP-26-B	15	11	100		
MP-26-C	20	15	120		
MP-26-D	25	20	120		
MP-26-E	35	30	120		

Cylindrical cap made of flexible insulating material.



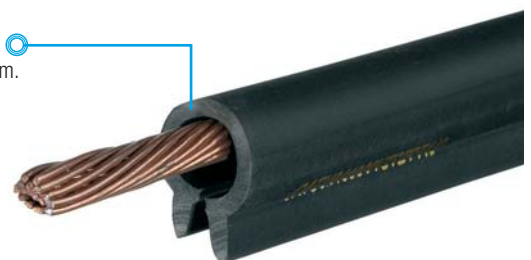
With cross-shaped opening.

## Flexible - type conductor cover

For LV conductors.

Reference	mm	g
MP-32/10	1 000	41
MP-32/15	1 500	62
MP-33	3 000	123

Shape type Ω, thickness 3.3 mm. For conductor Ø 16 mm max.



## Flexible - type conductor cover

For overhead network (< 1 000 V).

Reference	Characteristics	g
MP-31	Sipral shape type 5 m	600
MP-59	Indent tool for MP-31	180

For conductor Ø 20-22 mm.










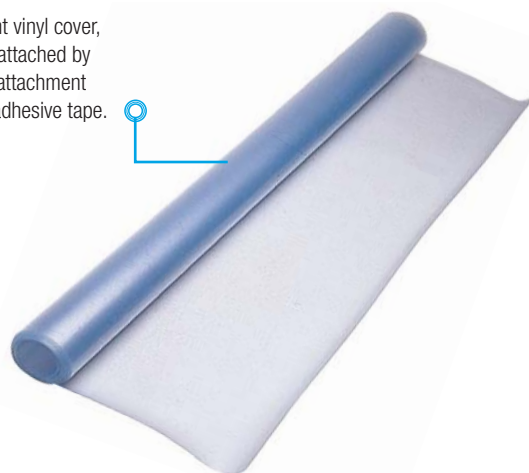
## Insulating flexible cover

For LV installation only (< 1 000 V).

Reference			
MP-35/12	1.3 x 12.5 m	0.3	6 000
MP-35	1.3 x 25 m	0.3	11 800
MP-40*	1.3 x 20 m	0.8	24 800

\* MP-40 for LV and HV.




Translucent vinyl cover, thickness attached by means of attachment clamp or adhesive tape.



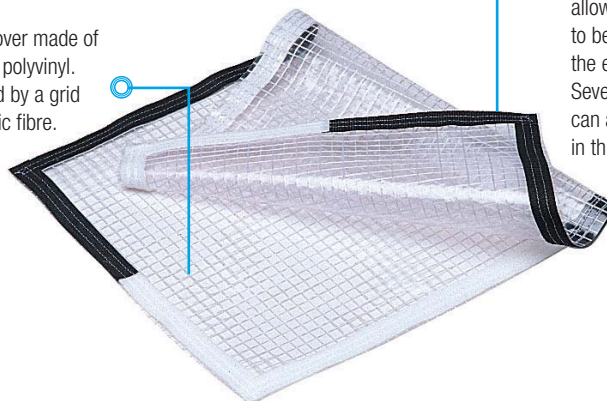
IEC 61-112

## Insulating flexible cover with Velcro™ tape

For LV installation only (< 1 000 V).

Reference			
MP-123	360 x 660	0.5	150
MP-123/1	500 x 900	0.5	290
MP-123/2	800 x 1 200	0.5	600

Flexible cover made of translucent polyvinyl. Reinforced by a grid of synthetic fibre.






The «Velcro™» type allows the flexible covers to be closed by pressing the edges together. Several flexible covers can also be connected in this manner.

IEC 61-112

## Insulating tape

For LV installation only (< 1 000 V).

Reference			
MP-37	90 x 25 000	0.3	800




Translucid insulating polyvinyl tape.



IEC 61-112

Clamp mount MP-39, duct tape.

## Blanket clamp

Reference			
MP-39	160	50	1
MP-4110	165	60	1
MP-41530	67	10	12

Bimaterial isolated clamp.



MP-41530

Wood.



MP-39

Isolated plastic clamp with spring.



MP-4110



For working from a distance.

## Wire-cutter stick

Trammel mechanism with a two-part copper and aluminium hook, with three positions:

- open, outward-facing hook,
  - closed, outward-facing hook ("universal joint" position),
  - closed, inward-facing hook ("transport" position),
- Automatic locking in "universal joint" position.

Reference	mm	mm	g
MG-116-S	2 000	26	2 100
MG-117-S	2 600	26	2 300

## Universal hand stick

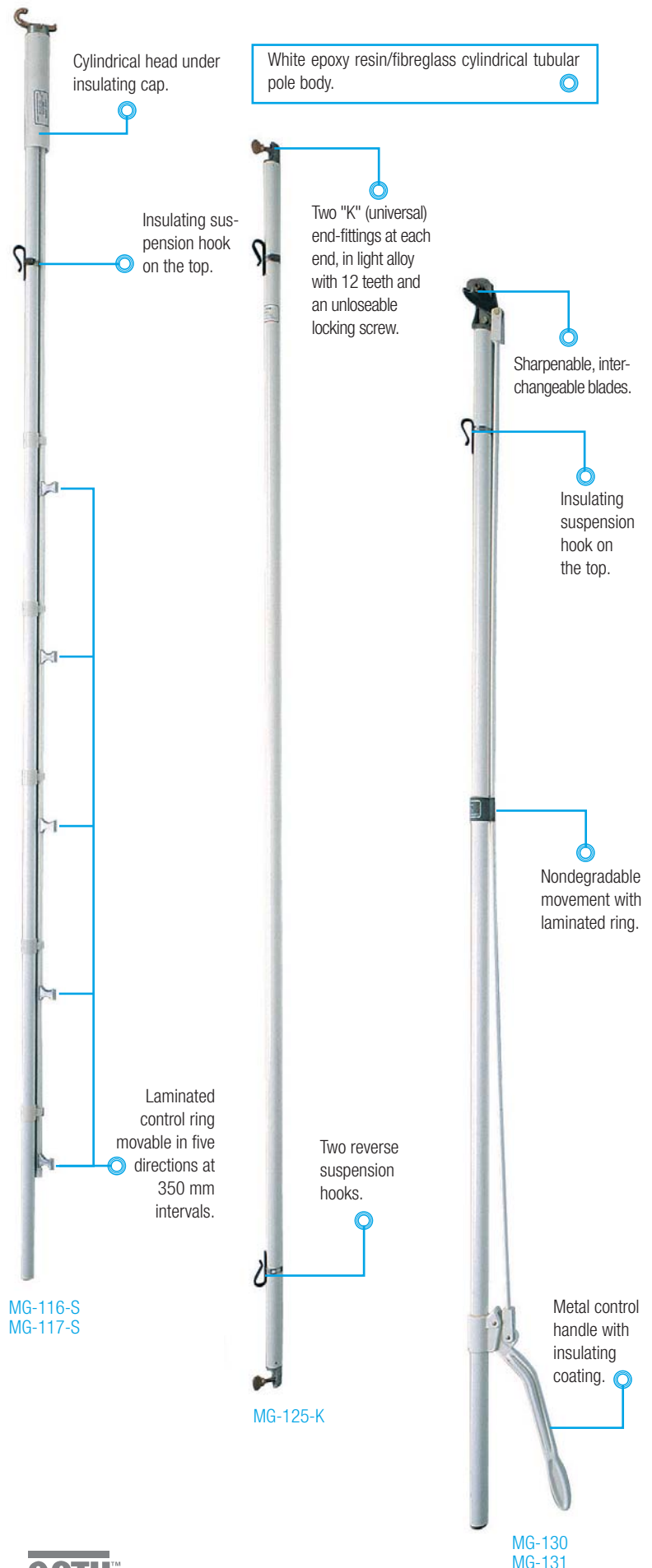
Reference	mm	mm	g
MG-125-K	2 600	32	1 300

## Hook stick (hook pole)

Cutting capacity:

- copper: 48 mm
- aluminium: 54 mm
- aluminium-steel: 37 mm
- 120 kg/mm steel: 5 mm.

Reference	mm	mm	g
MG-130	2 600	35	3 800
MG-131	1 800	35	3 300
M-52-91/92	Set of two blades (fixed and moving)		



Diameter



Total length



Weight



## Cable Identifier

The **MX-400** includes a modulator **A** and a receiver **B**.

The MX-400 is a cable identifier that is particularly well suited for quickly identifying underground cables and insulating overhead lines. It is also designed for identifying phases. This identifier is used on any type of power distribution network with rated voltages of 230 to 400 Volts.

Operating voltage: 230/400 V +/- 10%.

Frequency: 50 Hz +/- 10%.

Operating temperature: - 10° to + 55°C.

Storage temperature: - 20° to + 70°C.

Class II modulator.

Reference		
<b>MX-400</b>	510 x 465 x 216	10 600

Comes complete with an ABS case, 2 cables, and 1 amperemetric clamp.

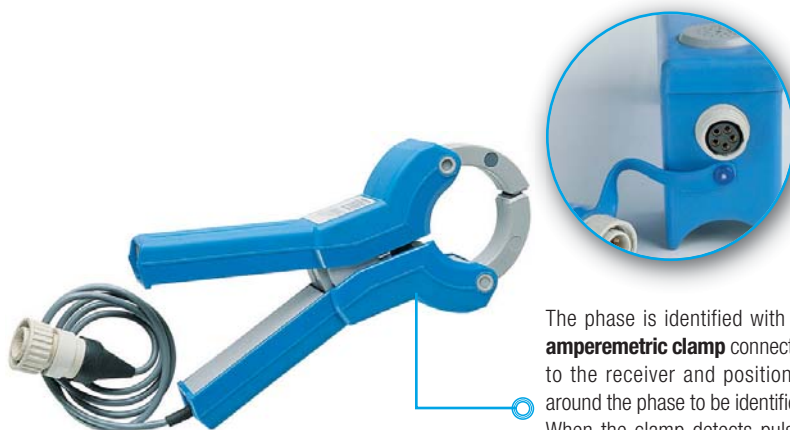
**H07RNF power cables.** (6 mm<sup>2</sup> and 3 m length).

The connection is made between phases for identifying the cable or between phase and neutral for identifying a phase. After connection, the device is immediately live, as indicated by two 230 and 400 Volts lights.

The **modulator** is an electronic power system that draws current pulses in 10-millisecond intervals at a frequency of 1 Hertz. Current limited by fuse, HPC 100 kA aM 10 A.



The **receiver** is equipped with two sensors that detect the passage of pulses drawn by the modulator. Once these pulses are received, the device emits a light signal, confirmed with a beep after three seconds. Receiver powered by 9 V lithium type 6LR61 battery. Sensor sensitivity adjustable to 15 levels. Detection can easily be adjusted, which accordingly affects identification accuracy.



The phase is identified with an **amperemetric clamp** connected to the receiver and positioned around the phase to be identified. When the clamp detects pulses drawn by the modulator, the receiver emits a light signal, confirmed by a beep after three seconds.

## Accessories

Reference	Characteristics
<b>MX-400/1</b>	Modulator + receiver
<b>MX-400/6</b>	Receiver
<b>MX-400/7</b>	Amperemetric clamp
<b>MC-1421</b>	Connection clamp





# Photovoltaic range



**MO-185-J**  
see page 18



**MS-911-BR**  
VAT voltage detector  
AC : 24 to 900 V  
DC : 24 to 1 000 V



**AT-7010**

**Insulating tools**  
see page 74

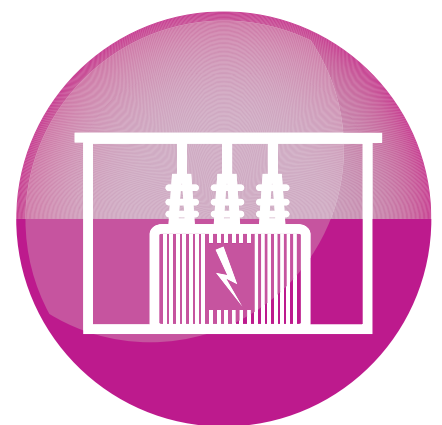


**For more information, please consult us.**



# MV Substation equipment

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Voltage detectors	103
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# Safety Equipment

Keep your substations in compliance

## Special regulatory signaling

The standard recommends the following signaling in substations:

- A substation poster,
- Two posters about what to do in the event of an indoor or outdoor electrical emergency,
- A poster displays the service rules.

All of these posters comes in kits that were specially designed by CATU to get your substations in compliance.



## Safety Equipment

The standard recommends the following service equipment:

- An insulating platform or an insulated mat,
- A rescue pole,
- A pair of insulating gloves adjusted to the sub-station's rated voltage,
- A voltage detector (see below for information)
- A grounding and short circuit device (see below for information)
- A glove box,
- A fuse holder.

CATU has assembled all of the service equipment into kits to simplify your selection and to bring your facilities into compliance right away. This equipment must include a suitable voltage detector.



## Intervention kits

Reference	Characteristics
<b>KIT-01</b>	Intervention kit with insulating platform
<b>KIT-02</b>	Intervention kit with insulating platform
<b>KIT-10</b>	Intervention kit with insulating mat delivered with a protective P.V.C. container

Reference				Characteristics		mm
KIT-01	KIT-02	KIT-10	Composition of kits			
•	–	•	<b>CG-30-C</b>	Insulating rubber gloves Classe III	26 500 V max	Size C (10)
–	•	–	<b>CG-40-C</b>	Insulating rubber gloves Classe IV	36 000 V max	Size C (10)
•	•	•	<b>CG-35/2 *</b>	Rubber gloves box	–	60 x 210 x 460
•	•	•	<b>CI-23 *</b>	Fuse holder	Ø maxi 85 mm	90 x 240 x 260
•	•	•	<b>CS-45 **</b>	Rescue stick	45 000 V max	Long. 1.65 m
•	•	•	<b>CI-06-D</b>	Wall mounted supports	Delivered with <b>CS-45</b>	–
•	•	–	<b>CT-7-25/1</b>	Insulating platform	24 000 V max	500 x 500 x 220
–	–	–	<b>CT-7-40/1</b>	Insulating platform	40 000 V max	500 x 500 x 220
–	•	•	<b>MP-42/16</b>	Insulating MAT <b>IEC-61111</b>	Class III - 26.5 kV	0.6 m x 1 m
–	–	•	<b>MP-20</b>	Mat storage box	–	Ø 10 cm x 1 m

\* Delivered with fixations.

\*\*Delivered with wall mounted supports **CI-06-D**.

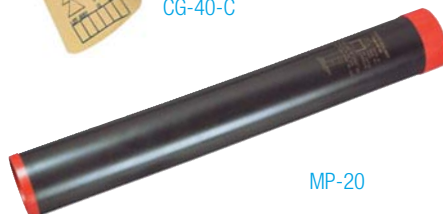
CG-35/2

CG-30-C  
CG-40-C

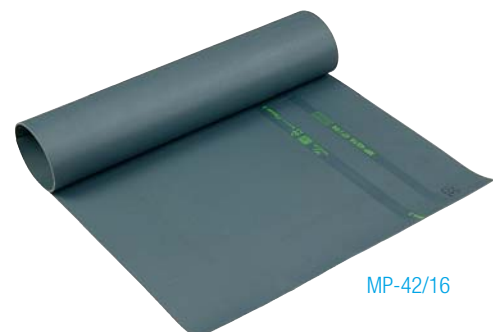
CI-23



CI-06-D

CT-7-25/1  
CT-7-40/1

MP-20



MP-42/16



The **KIT-01** is complemented by an appropriate detector:  
see pages 103, 118, and 119.

## Voltage detectors and short-circuiting systems for substations with bare conductors

IEC electronic Voltage Detectors, "Compact serie"  
for indoor and outdoor use

IEC 61243-1

CE

### Ultimate technology of voltage detector "Head Capacitive Technology"

Compact and light, it offers a wide band (10/36 kV).

#### Operating check:

By pressing the TEST button:

- a red LED flashes on
- powerful rated audible signal > 60 dB(A)/2 m
- when loosening the button, the timed green LED lights up. While remaining on, it indicates the good working order of the detector

#### Characteristics:

- Precise and stable operating threshold
- High environmental resistance (impacts, vibrations, moisture)
- Temperature conditions: class N (IEC -61243-1 standard)
- Use from 50 to 60 Hz.



## IEC Voltage detector

In compliance with IEC-61243-1.

**CC-875** high environmental resistance: impacts, vibrations, moisture.

Recommended stick **CE-4-21-C**.

Reference	Characteristic	~	mm	g
CC-875-10/36-(* )	Voltage detector in storage box	12/36 kV	390 x 90 x 90	500
CC-875-11/33-(* )	Voltage detector in storage box	11/22 kV	390 x 90 x 90	500

(\* ) Specify type of mounting when ordering: C or K  
For other voltage range: contact us.



CC-875-10/36-C

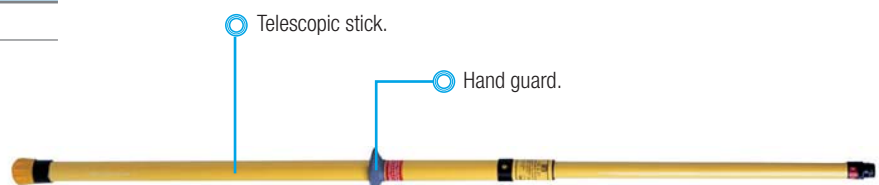
#### Voltage presence is indicated by:

red flashing LED (very bright - visible at more than 20 m in direct lighting).

## IEC Insulating stick for Voltage Detector

Stick in compliance with IEC 61235.

Reference	~	m
CE-4-21-C	90 kV	2





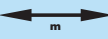

CE-4-21-C





### Voltage detector with leds for indoor use without batteries

Built-in device for checking operation of the led's indicator via a piezo-electric generator.  
High-brightness led's indicator.

Reference		 m	 m	
<b>CL-4-10/30-M *</b>	10-30 kV	—	1.35	1 000
<b>CL-4-10/30-2 **</b>	10-30 kV	0.85	1.26	950

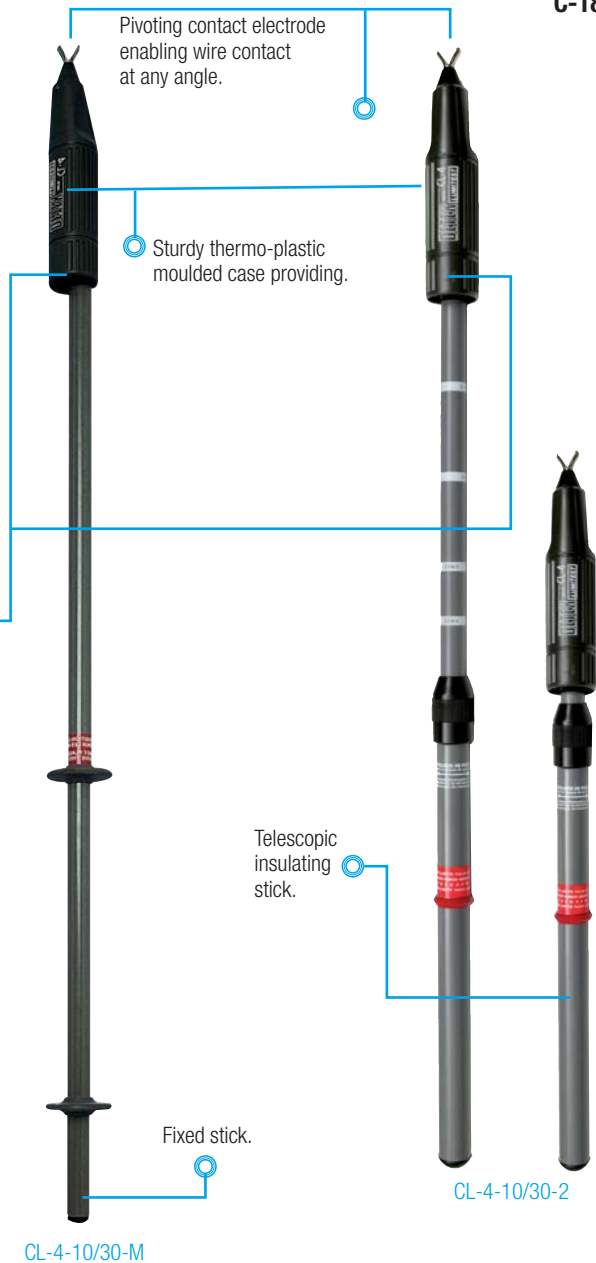
\* Delivered in vinyl sheath with wall brackets CI-06-D.

\*\* Delivered in canvas, waterproofed with ramp.




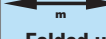


Ø 58.5 mm  
compatible  
with aperture  
housing.

C-18-311  
CE

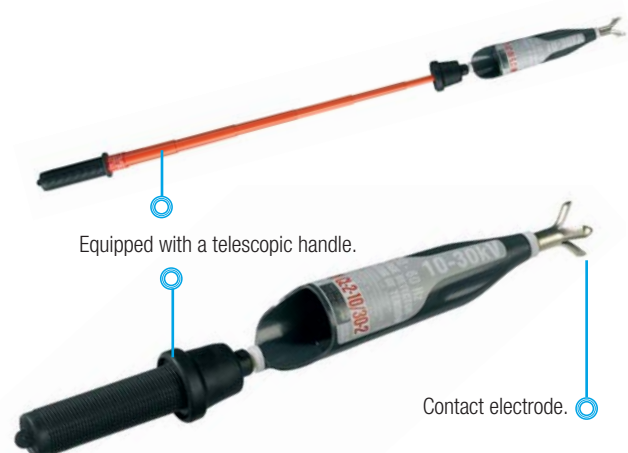


### Voltage detector with leds for indoor use (Compact serie) without batteries

For indoor use. This compact serie voltage detector is designed to be carried easily by operators. Voltage presence is indicated by a high-brightness LED's indicator. Built-in device for checking of the LED's indicator by a piezotest generator.

Reference		 m	 m	
<b>CL-2-5/36-2</b>	5-36 kV	0.33	0.9	400
<b>CL-2-10/30-2</b>	10-30 kV	0.33	0.9	400

Other models fixed or telescopic, please contact us.  
Delivered in holster.



 Total length

 Weight

**GATU**

## Two-pole phase comparators for indoor use

The **DETEX CL-8-36** detects differences in voltage between any two points of an installation indicated by LED's. It also enables assessment of the order of magnitude of the residual voltage induced by nearby live lines or circuits, and thus differentiates it from the one provided directly from a high voltage source.

Reference		aerial		
		assembled	dismantled	
<b>CL-8-36</b>	2 to 36 kV	1.25 m	0.62 m	1 100
<b>CL-8-36/1 *</b>	2 to 36 kV	1.25 m	0.62 m	1 300

\* As CL-8-36 tester with 2 probes extenders 0.550 m.  
Câble 1.5 m for CL-8-36 and 3 m for CL-8-36/1. Delivered in plastic case.

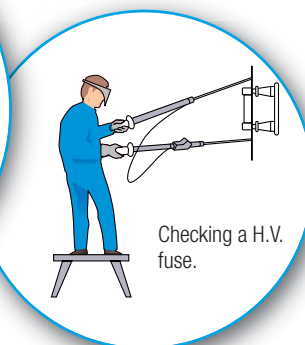
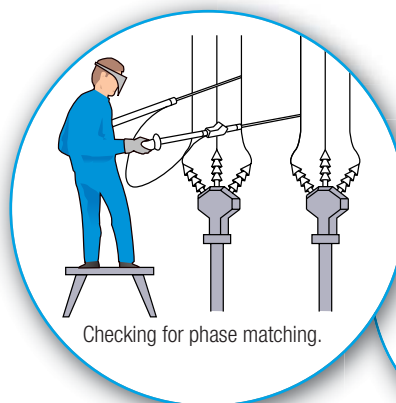
### Accessories

Reference	Characteristics
<b>C-92-20</b>	Spare probe 0.550 m
<b>CL-8-05</b>	Probe extenders 0.550 m

Two 1.25 m elements with removable probes, connected via a high-insulation lead.

High dielectric quality insulating material.

CL-8-36



## Operating Testers

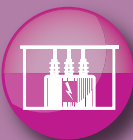
To perform mandatory testing on the controllers before and after each use

Reference	Characteristic		mm	
<b>CL-1-06</b>	Delivered in case with lead	Adjustable 10, 20, 30 kV	190 x 32 x 65	320



Unlike single-core voltage testers, dual core testers can recognize potential differences between any two points in an MV installation. Primarily reserved for conductors of the same phase (matching), they can also be used for dual core detection and for testing MV fuses.





## Two-pole phase comparator and permanent indicator

## Two-pole phase comparator for indoor and outdoor use

Complete function testing: built-in, with TEST push-button (battery supplied).




Consists of two elements connected by a high-insulation lead.

Removable handles.

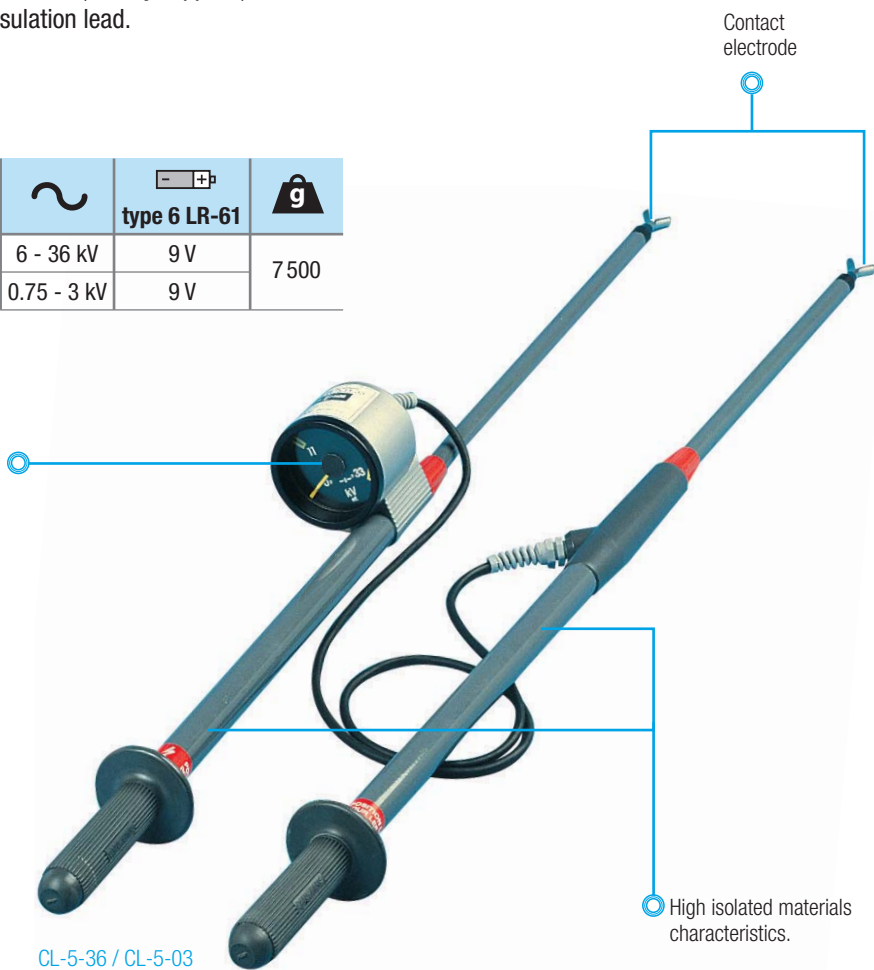
Device delivered in metal case.

140 x 250 x 850 mm - 7.5 kg.

CE

Reference	Graduation cadran (kV)		 type 6 LR-61	
CL-5-36	5 - 10 - 15 - 20 - 25 - 30 - 33 - 36	6 - 36 kV	9 V	7 500
CL-5-03	0.75 - 1 - 1.25 - 1.5 - 3	0.75 - 3 kV	9 V	

Indications provided by the galvanometer needle; dials are calibrated according to voltage.

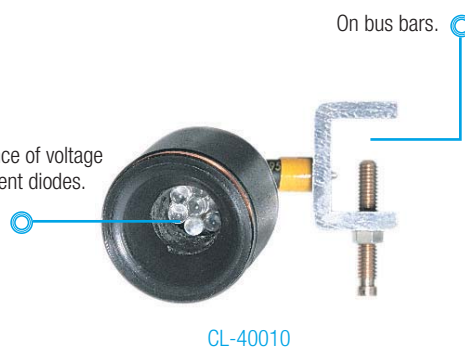


## Permanent luminous indicator for indoor use

Single-pole 5 to 75 kV indicator.

Reference	
CL-40010	Sold in box of 3 units

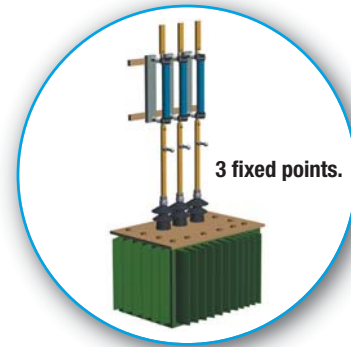
Signaling the presence of voltage by 7 electroluminescent diodes.



## IEC short-circuiting and earthing systems for MV substations

### Installation on permanent fixed points

Reference	Rating (kA/1 s)	Installation on fixed points	Composition	Connection set
MT-1910	20	Ø 20 mm MT-2951 range	3 clamps MT-1911-E 1 MT-1911	3 cables 95 mm <sup>2</sup> 1 earth cable 35 mm <sup>2</sup>
MT-1920	30	Ø 25 mm MT-3951 range	3 clamps MT-1921-E 1 MT-1921	3 cables 150 mm <sup>2</sup> 1 earth cable 50 mm <sup>2</sup>



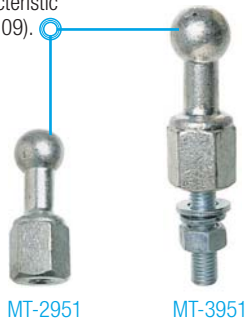
IEC-61230



### Installation on permanent fixed points

Reference	Characteristics
MT-890	Clamps 3 claws
MT-891	Earth clamp fixation
MT-893	Cable tensioner
MT-895	Cable kit support
CI-10-D	Wall mounted support
M-78665	Fixed points MT-1910 or MT-1920

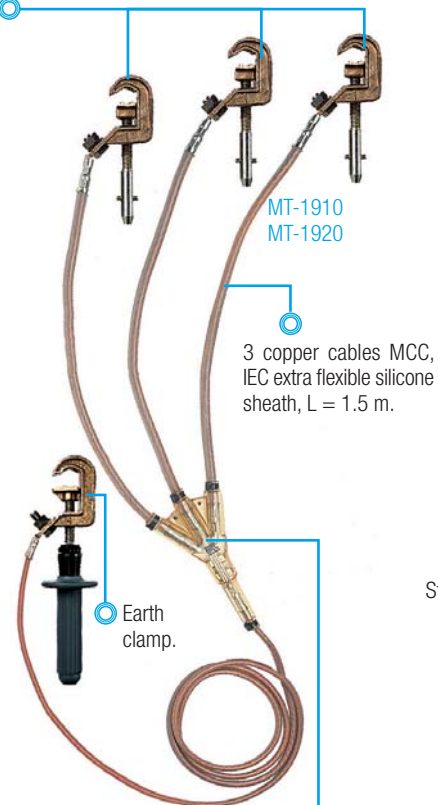
Fixed points  
(characteristic  
page 109).



Plastic case.



3 contact  
clamps.



CF-5-40-E

Stick.

1 trifurcation connector  
earthed by an extra-flexible  
copper cable with silicone  
sheath, L = 2.5 m.

### Earth clamps

Claw for "T" or round fixed points for round conductors.

Reference	Characteristic	Rating (kA/1 s)	g
MT-1911-E	Claw for "T" fixed points MT-1951... Ø 20 mm MT-2951... round fixed points Ø 8 à 18 mm	20	580
MT-1921-E	Claw for "T" fixed points MT-1951... round fixed points Ø 25 mm MT-3951... round conductors Ø 10 à 25 mm	30	690
MT-1911	Same characteristics with handle MT-1911-E	20	—
MT-1921	Same characteristics with handle MT-1921-E	30	—

Delivered with screws M 12.



MT-1911-E  
MT-1921-E



MT-1911  
MT-1921





## IEC short-circuiting and earthing systems for MV substations

### Installation on bare conductors

IEC-61230

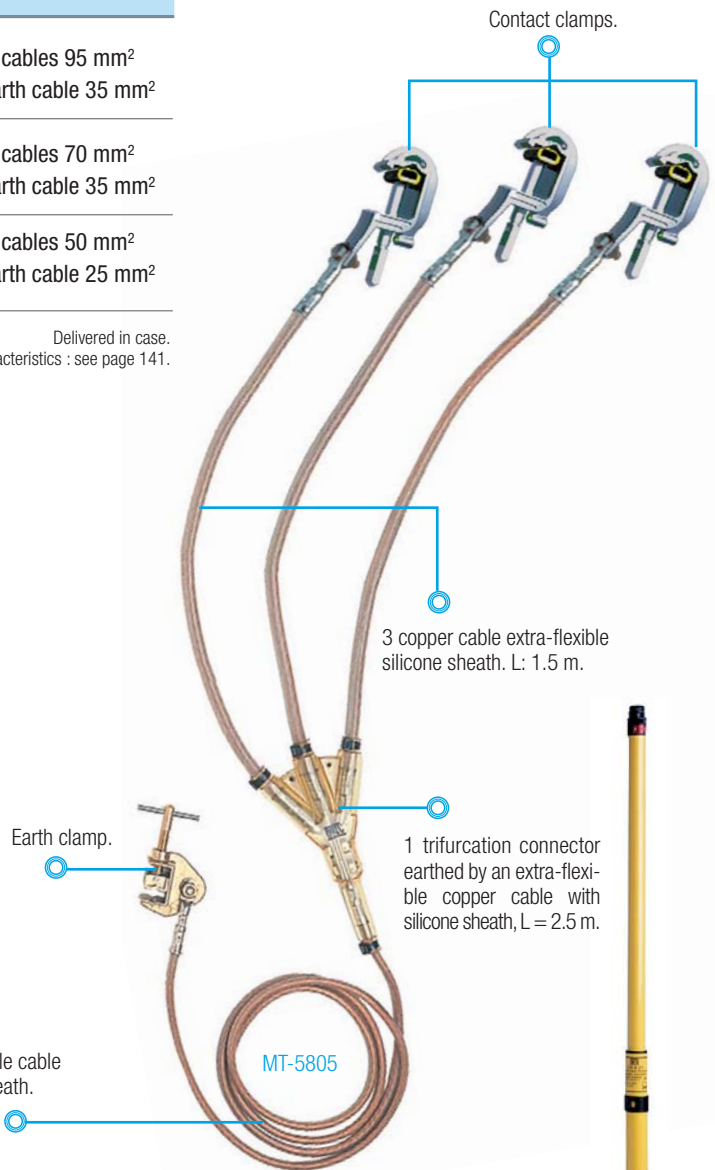
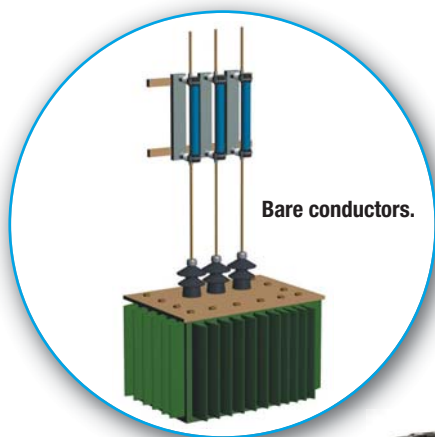


Reference	Rating (kA/1 s)	Installation on fixed points	Composition	Connection set
MT-5805	20	<ul style="list-style-type: none"> <li>• Ø 5-35</li> <li>— 16-40</li> <li>! 5-40</li> </ul>	3 clamps MT-815-C 1 MT-840/1	3 cables 95 mm <sup>2</sup> 1 earth cable 35 mm <sup>2</sup>
MT-8408	12,5	<ul style="list-style-type: none"> <li>• Ø 18-33</li> <li>— —</li> <li>! —</li> </ul>	3 clamps MT-814/3 1 MT-840/1	3 cables 70 mm <sup>2</sup> 1 earth cable 35 mm <sup>2</sup>
MT-9801	10	<ul style="list-style-type: none"> <li>• Ø 5-16</li> <li>— 0-16</li> <li>• Ø 5-28</li> </ul>	3 clamps MT-817-C 3 clamps MT-814/2 1 MT-840/1	3 cables 50 mm <sup>2</sup> 1 earth cable 25 mm <sup>2</sup>

Delivered in case.  
Clamp characteristics : see page 141.

### Installation on permanent fixed points

Reference	Characteristics
MT-890	Clamps 3 claws
MT-891	Earth clamp fixation
MT-893	Cable tensioner
MT-895	Cable kit support
CI-06-D	Wall mounted support



M-78665  
Plastic case included.

Stick to be ordered separately.



## Clamps for installation on bare conductors

### Attachment (C-Type)

Hexagonal end-fitting. A circumferential braking system prevents the clamp from turning under the weight of the cable. Separate by simple pulling.

Earth cable connection.

With a crimped lug (12 mm Ø hole).

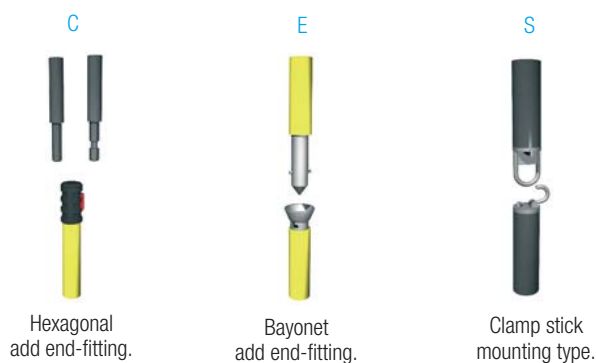
### Material

Aluminium alloy except MT-814/2 and MT-814/3: copper-aluminium bronze.



Reference	Rating (kA/1 s)	mm	mm conductor	g
MT-811-C	21	35 x 77 x 157	• Ø 5-16	330
MT-812-C	21	35 x 79 x 143	• Ø 5-16 — 0-16	320
MT-813-C	21	35 x 79 x 169	— 40 x 16	330
MT-814/2	14.5	85 x 56 x 192	• Ø 5-28	660
MT-817-C	21	30 x 90 x 140	• Ø 5-16 — 40 x 16	330
MT-814/3	14.5	85 x 56 x 195	• Ø 18-33	620
MT-815-C	30	44 x 100 x 180	• Ø 5-35	650
MT-815-E	30	44 x 100 x 180	— 16-40	650
MT-815-S	30	44 x 100 x 180	— 5-40	650
MT-815-S1	30	44 x 100 x 180		650

Recommended stick:  
CE-4-21-C / CF-5-90-E / MG-115-S.



MT-811-C



MT-812-C



MT-813-C



MT-814/2  
MT-814/3



MT-815-C



MT-817-C



MT-818-C

## Earth clamps

Copper aluminium bronze earth clamps.

Earth cable connection by connector, lug, TO- system...

Reference	Rating (kA/1 s)	mm	Connection	mm	g
MT-840	20	40 x 73 x 135	TO-08 connector 35 mm <sup>2</sup>	• Ø 6 - 25 — 0 - 25	480
MT-840/1	20	40 x 73 x 135	Thread: Ø 12.5 mm	• Ø 6 - 25 — 0 - 25	480
MT-841	20	40 x 73 x 135	Fontenay connector ≤ 50 mm <sup>2</sup>	• Ø 6 - 25 — 0 - 30	480



MT-840



MT-840/1



MT-841



## Short-circuiting and earthing systems (installations)

## NORMAFIX™ access points and clamps for placement on permanently installed fixed points

The advantages of grounding and short circuiting using permanently installed fixed points on existing conductors include:

- Using the same grounding and short circuiting equipment regardless of the conductor shape, section, or configuration
- Accessibility from variable angles
- Eliminating the risk of errors because grounding locations appear at first glance.

Reference	Rating (kA/1 s)	Sphere dimension Ø	Fixing	Conductors (mm)	g
MT-951/1	10	18 mm	Bolt: M 10 - L = 25 mm	Flat conductors	90
MT-951/2			Bolt: M 10 - L = 35 mm		100
MT-951/3			Bolt: M 10 - L = 45 mm		107
MT-952/1			Bolt: M 10 - L = 25 mm		110
MT-952/2			Bolt: M 10 - L = 35 mm		120
MT-952/3			Bolt: M 10 - L = 45 mm		130
MT-953/08			Ø 6-8	Round conductors	130
MT-953/12			Ø 10-12		185
MT-955/08			Ø 6-8		150
MT-955/12			Ø 10-12		200
MT-956			Thread: Ø 12.5 mm	Terminal fitting	75
MT-2951	20	20 mm	Bolt: M 12	-	130
MT-2951/1			Bolt: M 12 - L = 35 mm		180
MT-2951/2			Bolt: M 12 - L = 45 mm		200
MT-2950/35			Bolt: M 12 - L = 35 mm		247
MT-3951	30	25 mm	Bolt: M 12	-	240
MT-3952			Bolt: M 16		240
MT-3951/1			Bolt: M 12 - L = 45 mm		300
MT-3952/1			Bolt: M 16 - L = 45 mm		350
MT-3950/35			Bolt: M 12 - L = 35 mm		300



MT-951



MT-952



MT-953...



MT-955...



MT-956

MT-2951  
MT-3951  
MT-3952MT-2950/35  
MT-3950/35MT-2951/1  
MT-2951/2  
MT-3951/1  
MT-3952/1

## Access points

To be used with clamps type [MT-1911](#), [MT-1921](#) (see page 106).

Reference	Rating (kA/1 s)	Fixing	g
MT-1951/10	20	Bolt: M 10 - L = 35 mm	125
MT-1951/12	20	Bolt: M 12 - L = 35 mm	125

MT-1951/10  
MT-1951/12

MT-920-E




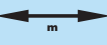

## Clamps

Reference	Rating (kA/1 s)	Fixing	g
MT-920-E	20	For fixed points Ø 20 mm	350
MT-925-E	20	For fixed points Ø 25 mm	400

## Short-circuiting and earthing systems (installations)

### Insulating sticks for substation use



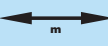

Telescopic sticks for voltage detectors and earthing systems for use in dry and wet conditions.

Reference		 mm	 m Folded	 m	 g
CE-4-21- <sup>(*)</sup>	90 kV	41/32	1.15	2	1 500
CM-7-10-A	Extension*	36	—	1	1 000
CE-75- <sup>(*)</sup>	75 kV	41/32	1.15	2	1 200

<sup>(\*)</sup> Specify type of mounting when ordering: C or K.  
Delivered with wall mounted support CI-10-D.  
\* For CE-4-21.

### Standard sticks



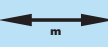

For short circuiting and earthing system.  
For use in dry conditions.

Reference		 mm	 m	 g
CE-3-72- <sup>(*)</sup>	72.5 kV	36	1.50	880
CE-3-90- <sup>(*)</sup>	90 kV	36	2	1 060

<sup>(\*)</sup> Specify type of mounting when ordering: C, K or E.  
Delivered with wall mounted support CI-10-D.

### Sticks with skirts

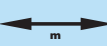

For short circuiting and earthing system.  
For use in dry conditions.

Reference		 mm	 m	 g
CF-5-40- <sup>(*)</sup>	40 kV	36	1.50	1 550
CF-5-90- <sup>(*)</sup>	90 kV	36	2	1 550

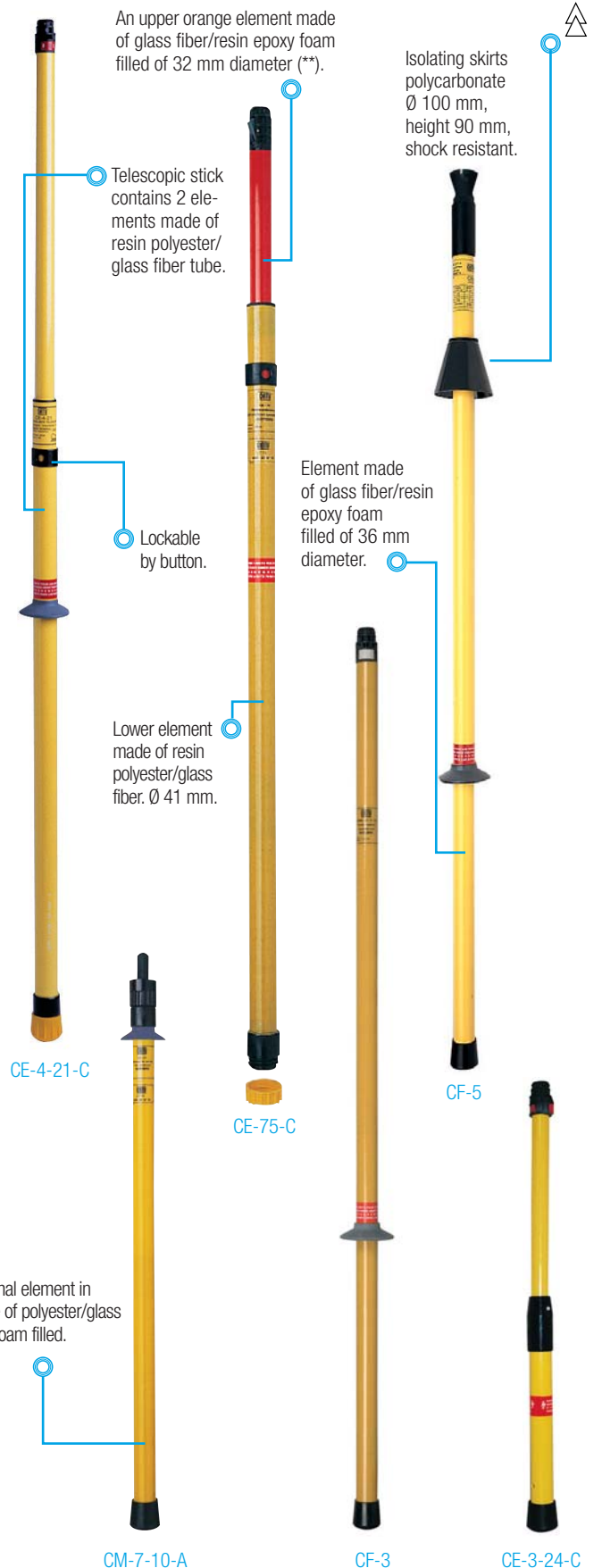
<sup>(\*)</sup> Specify type of mounting when ordering: C, K or E.

### Short length stick

For MV telescopic sticks.

Reference	 m	 g
CE-3-24-C	Insulating Length = 0.52 Overall Length = 0.80 Folded Length = 0.56	370

IEC-61235  
\*\*IEC-60855



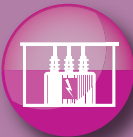
 Diameter

 Total length

 Weight

**CATU**





## VPIS and VDS systems for M.V. cubicles

We can deliver complete set with foot capacitance, head capacitance and wirings to your own specifications. Please consult us.



\* IEC 61958  
\*\* IEC-61243-5



### Integrated voltage presence indicating system (V.P.I.S)

Indicates the voltage presence on M.V. cubicles by being installed on the capacitive dividers. Voltage of use behind capacitive dividers:  $V < 1\,000\text{ V}$ . Light threshold: 90 V. Signaling: 3 neons. Attachment: male/female plugs.

Reference	Characteristics	mm	g
CL-495-3 *	Delivered complete with connector assembly	130 x 30	85



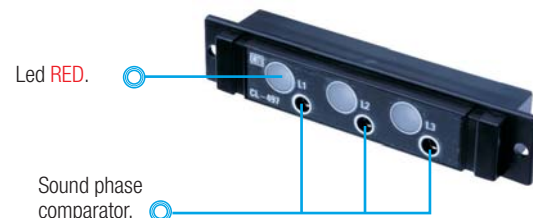
Diode.

Sound phase comparator. MX-404.

### Integrated voltage detecting system (V.D.S)

Indicates the voltage presence on M.V. cubicles by being installed on the capacitive dividers. Voltage of use behind capacitive dividers:  $1\,000\text{ V}$  (between phase and earth). Light threshold: 70/90 V. Input impedance:  $36\text{ M}\Omega$ . Signalling by 3 red diodes.

Reference	Characteristics	mm	g
CL-497-00 **	Delivered complete with connector assembly	146 x 30	90



Led RED.

Sound phase comparator.

### Sound phase comparator

The MX-404 sound phase comparator checks the concordance between 2 phases.

The comparator's operation is indicated by:

Emission of an audible signal when there is discrepancy between the two phases. Absence of an audible signal when there is no discrepancy between the two phases. Power supply: 9V type 6LR battery.

Reference	Characteristics	mm	type 6 LR-61
MX-404 **	Delivered with case	145 x 80	9 V

Discrepancy indication led GREEN.



## Interface for integrated voltage detecting system (V.D.S)

IEC-61243-5



Indicates the voltage presence on M.V cubicles by being installed on the capacitive dividers. For High impedance detecting systems Input impedance: 36/43 MΩ. Voltage indication by 4 mm standard sockets on the front of the indicator.

Reference	Characteristics	mm	g
CL-498-00	Delivered with connection set	146 x 30	90



Voltage indicator by 4 mm standard socket.

## Separable voltage detecting system (V.D.S)

This device enables to check the absence or presence of voltage on three phases (L1, L2, L3). HR high impedance. Voltage max: 1 080 V rms. 50/60 Hz. Voltage presence: red flashing LED > 1 Hz. Fits in CL-498 devices.

Reference	Characteristics	mm	type 6 LR-61
CL-499/101	Delivered in plastic bag	145 x 80	9 V



CL-499/101

Voltage detector.

## Voltage tester for M.V. separable connectors

### Voltage detectors and indicators

CE

### Voltage tester for M.V. separable connectors

Checks the absence of voltage on the capacitive terminals of plug-in M.V. bushings.

Sensor in the form of a bent finger enabling removal and reinstallation of the terminal insulating cover.

Signal via beeping and bright red flashing of electro-luminescent diodes.

Built-in function test via the "TEST" button which covers the entire device.

Permanent stand-by state.

Power supply: four 1.5 V, R-6 batteries.

Mounting on insulating stick via a universal end.

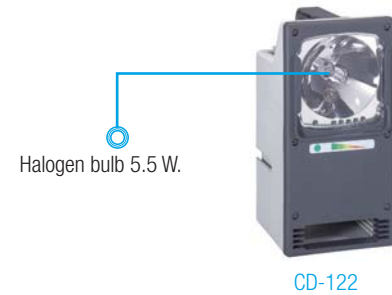
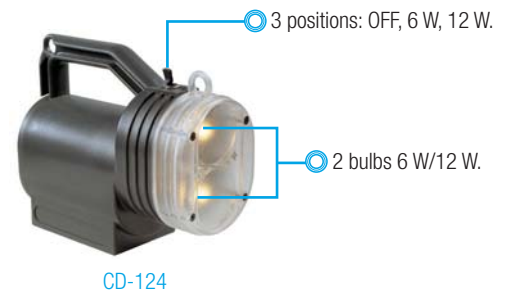
Reference	Characteristics	type LR-6	g
CC-151-K	Tester in rigid case with batteries 70 x 100 x 165 mm	4 x type LR-6	700
CC-45-K	Special 45 kV insulating stick 70 x 100 x 165 mm		600





## Safety lamps

Reference	Characteristics	mm	g
<b>CD-122</b>	Automatic switch on in case of power break Adjustable flood beam - power beam: 5.5 W Operates: 3 hours - IP40 Classe II	240 x 120 x 128	1 800
<b>CD-124</b>	Delivered with a wall mounted support. Operates: 1 hour (12 W), 2 hours (6 W) Rechargeable on 230 V 50/60 Hz	100 x 190 x 220	1 900



## Aperture Housing

Compatible with **NF C 13-100**.

Moulded plastic. Installed outside by tightening three screws on a steel clamp.

Reference	g
<b>CI-70</b>	140

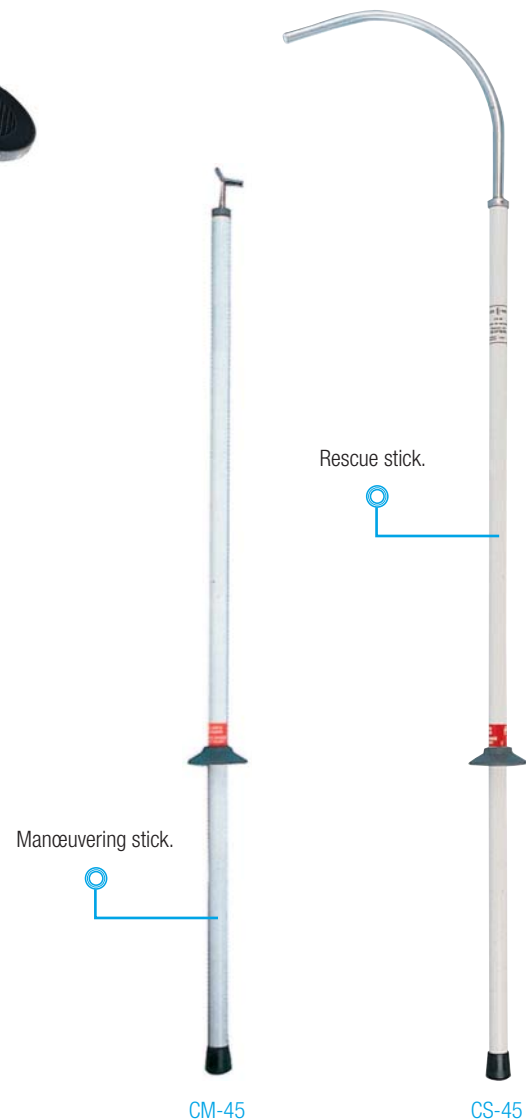


## Manœuvring and rescue sticks

White resin polyester/glass fiber foam filled tube.

Reference	~	m	g
<b>CM-45</b>	45 kV	1,50	7 500
<b>CS-45 *</b>	45 kV	2	1 000
<b>CM-90</b>	90 kV	1.85	800
<b>CS-90 *</b>	90 kV	2.05	1 100
<b>CM-225</b>	225 kV	2.25	850
<b>CS-225 *</b>	225 kV	2.45	1 350

\* Delivered with wall mounted supports.

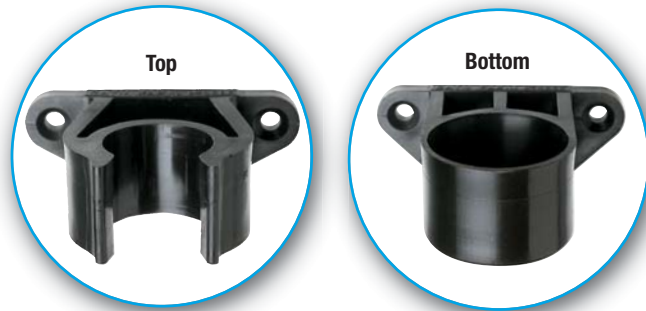


### Wall mounted supports

For sticks and voltage detectors. Plastic.

Reference	Ø Top	Ø Bottom
CI-06-D	28-30	36 max.
CI-08	16-20	36 max.
CI-10-D	32-36	58 max.

Delivered with wood screws.

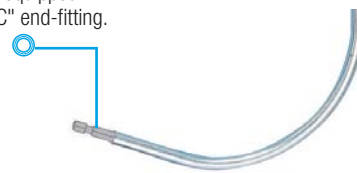


### Rescue hook

Reference	Characteristics	mm	g
CS-01-C	Adaptor C	345 x 335	350

\* Delivered with small mounted supports and 4 screws.

On stick equipped with a "C" end-fitting.



### Compact carrying KIT

This compact kit is designed especially to be carried in a vehicle for safety electrical intervention.  
Made in two part (of moulded material: PEHD), the case is also on its red part, an insulating platform.

Reference	Characteristics with instructions in English	~	mm	g
CZ-53-R	With instructions in English	25 kV	710 x 570 x 240	21 000
CZ-53-MR	With instructions in English/Arabic	25 kV	710 x 570 x 240	21 000
CZ-53-R/2	With instructions in English	36 kV	710 x 570 x 240	21 000
CZ-53-MR/2	With instructions in English/Arabic	36 kV	710 x 570 x 240	21 000







## Life saving kits for M.V. substations

Wall mounted kit.

Reference	Characteristics	~	mm	g
CZ-54-R	With instructions in English	24 kV	840 x 754 x 270	21 000
CZ-54-RM	With instructions in English/Arabic	24 kV	840 x 754 x 270	21 000
CZ-55-R	With instructions in English	36 kV	840 x 754 x 270	21 000
CZ-55-RM	With instructions in English/Arabic	36 kV	840 x 754 x 270	21 000

Voltage detector with flexible antenna contact (with autotest).

Close

Safety instructions on the plastic board.

High voltage Insulating gloves, insulating boots and talcum powder can.

Cable cutter with insulated handles. Forged steel blades. Maximum opening 30 mm.

Insulating boots.

Open

Wall mounted cabinet.

Insulating platform 24 or 36 kV.

Rescue telescopic stick.

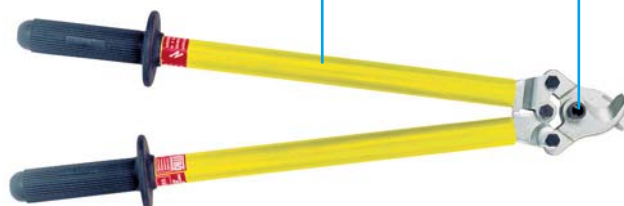


In case of an electrical accident, quick response is essential: seconds gained or lost can decide the life or death of a victim. Our life saving equipment is designed to make all necessary materials immediately available to rescue personnel.

## Insulated cable cutter

Reference	m	g
CZ-60	0.630	2200

Insulated handles 25 kV.

Maxi cable : 26 mm.  
Section  $\approx 150 \text{ mm}^2$ .



# Services



Certificate no. 1-0897  
Available at  
[www.cofrac.fr](http://www.cofrac.fr)



ISO 9001 - ILO-OSH 2001  
OHSAS 18001 - ISO 14001

*Technical assistance*



*Training*

*After sales services*



*Testing laboratory*



*Flexible workshop*



## After Sales Services

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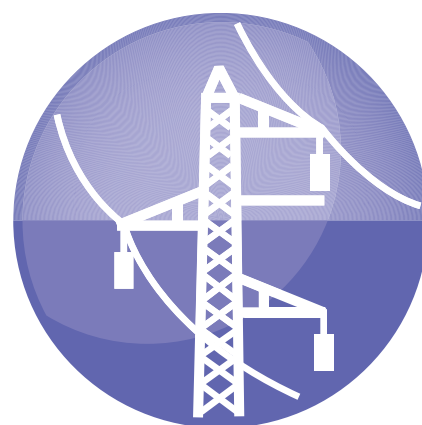
## Technical Assistance

[philippe.monteillet@catuelec.com](mailto:philippe.monteillet@catuelec.com)

phone : +33 1 42 31 46 24 - fax : +33 1 42 31 46 34

# Medium voltage equipment

IEC voltage detectors	118
Single phase comparators	120
Phase comparators	121
IEC equipment	122
Insulating sticks	123
Clamps	125
Overhead line systems	126
Cables	127
Underground systems	129
Sticks accessories	130



## IEC electronic Voltage Detectors, "Compact serie" for indoor and outdoor use

IEC-61243-1

CE

### Ultimate technology of voltage detector "Head Capacitive Technology"

Compact and light, it offers a wide band (10/36 kV).





#### Operating check:

By pressing the TEST button:

- A red LED flashes on.
- Powerful rated audible signal > 60 dB(A)/2 m.
- When loosening the button. The timed green LED lights up. While remaining on, it indicates the good working order of the detector.

#### Characteristics:

- Precise and stable operating threshold.
- High environmental resistance (impacts, vibrations, moisture).
- Temperature conditions: class N (IEC -61243-1 standard).
- Use from 50 to 60 Hz.

Reference				
		Operating voltage (KV)	type 6 LR 61	
CC-875-5,5/20-(*)	50/60 Hz	5.5 - 20 kV	9 V	450
CC-875-10/30-(*)	50/60 Hz	10 - 30 kV	9 V	450
CC-875-10/36-(*)	50/60 Hz	10 - 36 kV	9 V	450
CC-875-11/33	50/60 Hz	11 - 33 kV	9 V	450

(\*) Specify type of mounting when ordering: C or K.

Packaging: unit supplied complete in a case with batteries and contact electrodes (straight and V-shaped).  
Total weight: 1100 g. Total size: 340 x 275 x 83 mm. For other voltages, please consult us.

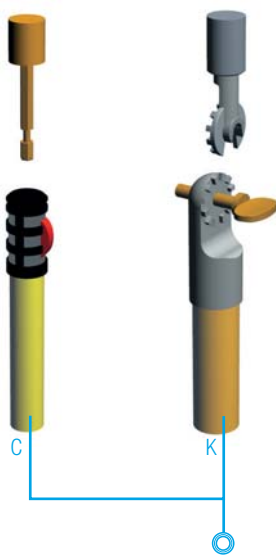


CC-875-C



CC-875-K

Robust housing.  
Weight of the detector: 450 gr.  
Size of the detector: Ø 59 x 270 mm.



#### End fittings:

C: hexagonal 12 mm, for hexagonal end-fitting sticks,

K: universal, for universal end-fitting sticks.

Recommended stick: CE-4-21, CE-75.

See page 123.



Contact electrodes fitted to the housing by screwing and are easily interchangeable.

#### Voltage presence is indicated by:

- red flashing LED (very bright - visible at more than 20 m in direct lighting),
- powerful rated audible signal > 60 dB(A)/2 m.





CE

### Standard electronic voltage detector for indoor and outdoor use

#### Checking

By pressing the test button:

- extremely bright **RED** flashing LED's (visible at more than 50 meters even in unfavourable light),
- powerful rated audible signal > 60 dB/2 m

The test button is released:

- a timed **GREEN** LED lights.

Indicating both the detector is operational and the self testing of the unit continues.

#### Characteristics:

- Precise and stable operating threshold.
- High environmental resistance (impacts, vibrations, moisture).

Reference		(operating voltage)	type 6 LR 61	9
CC-365-3/10-(*)	50 Hz	3-10 kV	1.5 V	500
CC-365-10/30-(*)	50 Hz	10-30 kV	1.5 V	500

(\*) Specify type of mounting when ordering: C or K.

Packaging: unit supplied complete in a case with batteries and contact electrodes (straight and V-shaped).  
Total weight: 1100 g. Total size: 340 x 275 x 83 mm. For other voltages, please consult us.

#### Accessories

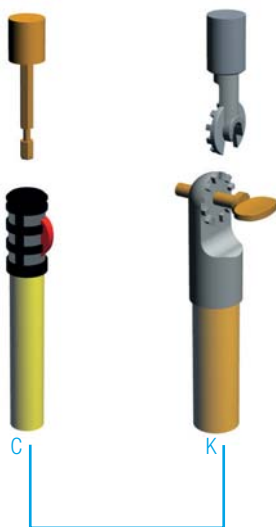
Reference	Characteristics
CC-365-101	Flag/Vee contact electrode
CC-92-492	Contact electrode for installations L = 310 mm, insulating on 300 mm



CC-363-K

CC-363-C

Housing made of polycarbonate.  
Size of detector  
Ø 59 x 390 mm.



#### End fittings:

**C:** hexagonal 12 mm, for hexagonal end-fitting sticks,  
**K:** universal, for universal end-fitting sticks.  
Recommended stick: **CE-4-21**, **CE-75**.  
See page 123.



Diode **GREEN**.

#### Double signaling:

Voltage presence is indicated by both:

- extremely bright red flashing LED's (visible at more than 50 meters even in unfavourable light),
- powerful rated audible signal > 60 dB/2 m.





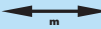

## Single pole phase comparator for indoor and outdoor use

IEC-61481

CE

Unipolar device for phase information on distribution networks.

Used on 50 and 60 Hz networks.

Reference		 type LF 22	 aerial	
CL-7-06/18- <sup>(*)</sup>	6-18 kV	9 V	0.55	850
CL-7-10/30- <sup>(*)</sup>	10-30 kV	9 V	0.90	900
CL-7-10/30-1- <sup>(*)</sup>	10-30 kV	9 V	1.15	950
CL-7-12/36- <sup>(*)</sup>	12-36 kV	9 V	0.90	900

<sup>(\*)</sup> Please specify type C or K when ordering.  
Delivered in carrying case.

Fixation C or K.

GREEN LED = phasing indication.

ORANGE LED = memorized phase status voltage are in memory.

RED LED = non-phasing indication.

Press the button to test the device and to reset its memory.

 Total length

 Weight

**CATU**<sup>TM</sup>



### Wireless phase comparator

IEC-61481

CE

The wireless phase comparator allows to check if the 2 active conductors' voltage are in phase or not.

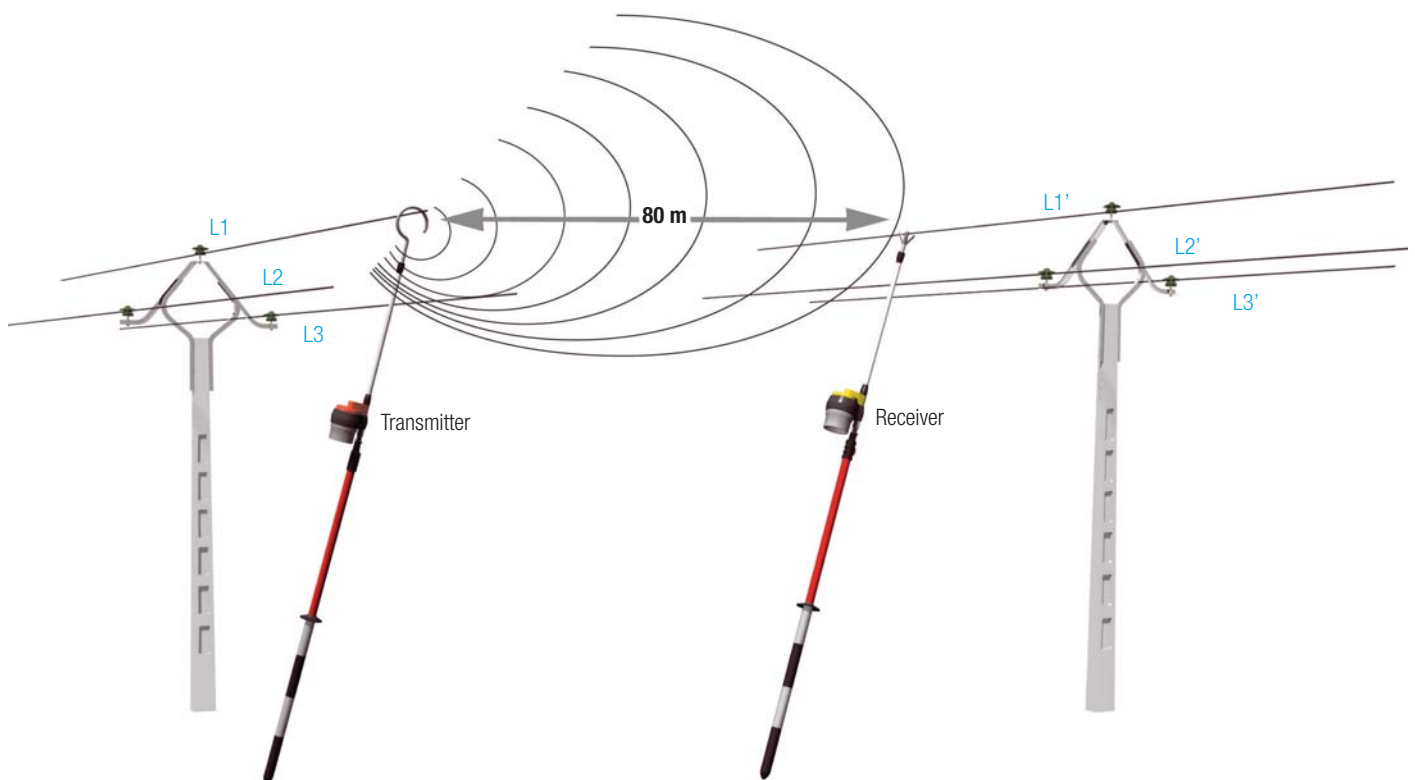
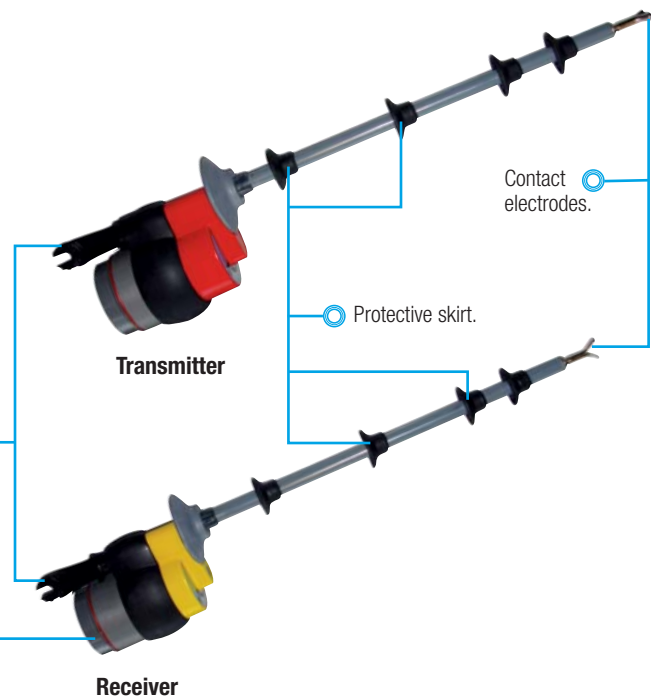
- Distances between both points of measurement until 80m in open field.
- Wireless and without maximum time measurement.
- Autotest of the receiver, the transmitter and good radio link between both device.
- IEC 61481 (phase comparator).
- Sound and luminous indication.
- Communication frequency 433 MHz. Battery 9V.

Reference					
CL-12-4/12 *	50/60 Hz	4-12 kV	0.6	2x 9 V	1 750
CL-12-12/36 *	50/60 Hz	12-36 kV	0.6	2x 9 V	1 750

\* To be use with insulating sticks: CM-4400 and CM-4600 series (see page 124 and 135) and K end-fittings adaptors (see page 129).

K end-fitting.

GREEN diodes: synchronization  
(angular difference lower  $\pm 10\%$ ).  
RED diodes: no synchronization  
(angular difference superior  $\pm 30\%$ ).



Total length

Weight

**CATU**

## IEC short-circuiting and earthing systems (three-phase crossarm networks)

**MT-613** clamps are automatic contact clamps. They are put into position from above the conductor, using the clamp dispenser head MT-635/1-C.

IEC-61230



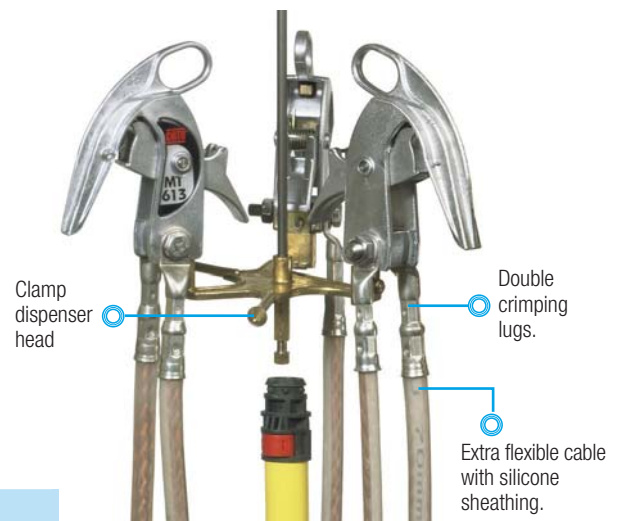
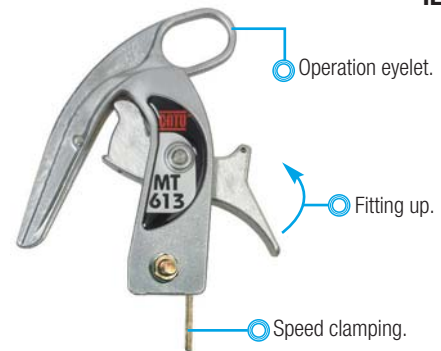
Reference	Equipment composition
<b>MT-6613</b>	3 automatic contact clamps <b>MT-613</b> Connection cables 35 mm <sup>2</sup> , max. gap between clamps: 2.75 m 1 clamp dispenser head <b>MT-635/1-C</b> 1 spool with earthing cable connection <b>MT-640-S</b> 1 carrying bag <b>M-87295</b>
<b>MT-6613/1</b>	3 automatic contact clamps <b>MT-613</b> Connection cables 95 mm <sup>2</sup> , max. gap between clamps: 2.75 m 1 clamp dispenser head <b>MT-635/1-C</b> 1 earthing cable connection 15 m x 35 mm <sup>2</sup> 1 earthing clamp <b>MT-840/1</b> 1 carrying bag <b>M-87295</b>

### Characteristics

Reference	Rating (kA/1 s)	Connection copper cable between clamps (mm <sup>2</sup> )	Earth connection copper cable (mm <sup>2</sup> )	Ø mm conductor
<b>MT-6613 *</b>	8	35 mm <sup>2</sup>	16 mm <sup>2</sup>	5 to 30
<b>MT-6613/1 **</b>	17.5	95 mm <sup>2</sup>	35 mm <sup>2</sup>	5 to 30

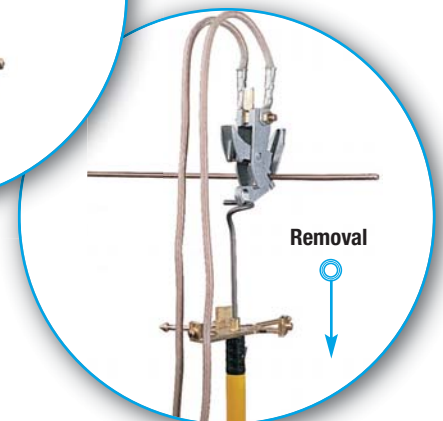
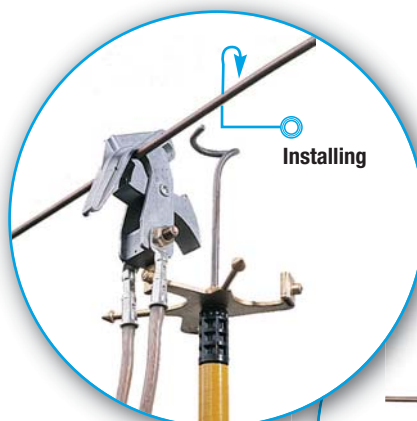
\* Recommended sticks: CE-4-21-C.

\*\* Recommended sticks: CM-4, CF-5, CM-7 et CM-4000.



### SPECIAL FEATURES

- Remarkable rapidity and ease of handling.
- Removal is carried out by pulling down the clamp, which revolves around the conductor by means of the pig tail fixed in the centre of the clamp dispenser head.







IEC-61235



### Telescopic sticks for voltage detector

Use in wet conditions.

Reference		$\varnothing$ mm	 m Folded up	 m	 g
CE-4-21-(* )	90 kV	41/32	1.15	2	1 500
CM-7-10-A	Extension*	36	—	1	1 000
CE-75-(* )	75 kV	41/32	1.5	2	1 200

(\* ) Please specify type C or K when ordering.  
Delivered with wall mounted supports CI-10-D.  
\* For CE-4-21.

Lockable button.

An upper orange element made of glass fiber/resin epoxy foam filled of 32 mm diameter (\*\*).

Telescopic stick contains 2 elements made of resin polyester/glass fiber foam filled tube.

Isolated skirts polycarbonate  $\varnothing$  100 mm, height 90 mm, resistant shocks.

### Fixed length sticks

Use in wet conditions.

Reference		 m	Skirt nbr	 g
CF-5-40-(* )	40 kV	1.50	1	1 150
CF-5-90-(* )	90 kV	2.00	1	1 550
CF-5-110-(* )	110 kV	2.50	2	2 000
CF-5-170-(* )	170 kV	3.00	3	2 400

(\* ) Please specify type C or K when ordering.

Element made of resin polyester/glass fiber.

Element made of glass fiber/resin epoxy foam filled of 36 mm diameter (\*\*).

CM-7-10-A

CE-4-21-C

CE-75-C

Yellow lower element made of resin polyester/glass fiber 41 mm diameter base tube.

CF-5

### Wall mounted supports

For sticks and voltage detectors. Plastic.

Reference	$\varnothing$ mm Top	$\varnothing$ mm Bottom
CI-06-D	28-30	36 max
CI-10-D	32-36	58 max
CI-12-D	28-30	56 max
CI-08	16-20	36 max

Delivered with wood screws.





Top

Bottom



## Insulating sticks for short-circuiting and earthing systems

This range allows a stick-length limitation in case of space requirements and carrying capabilities.

For common applications a serie of complete sets including 2 or 3 elements are made to give simple solutions for working distance from 2 to 6 meters.

Reference		 m smallest end fitting	 m biggest end fitting	 m isolation	 g
Basic	CM-4410	1.13	—	0.7	1 250
	CM-4415	1.63	—	1	1 700
	CM-4420	2.13	—	1.2	2 700
	CM-4425	2.63	—	1.5	3 200
Intermediate	CM-4410-I	1.165	—	0.9	1 200
	CM-4415-I	1.665	—	1.4	1 600
	CM-4420-I	2.165	—	1.9	2 500
	CM-4425-I	2.665	—	2.4	3 000
Terminal	CM-4410-(*)	1.115	1.21	0.9-1	900
	CM-4415-(*)	1.615	1.71	1.4-1.5	1 300
	CM-4420-(*)	2.115	2.21	1.9-2	2 100
	CM-4425-(*)	2.615	2.71	2.4-2.5	2 600



(\*) Add end-fitting: B-C-E-H-K-T-D.

Reference	 m smallest end fitting	 g
CM-4400-J	0.362	950



## Sticks with rain skirts, C, K or E end-fittings

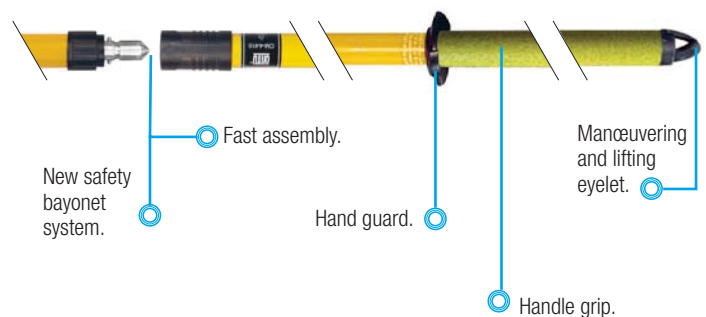
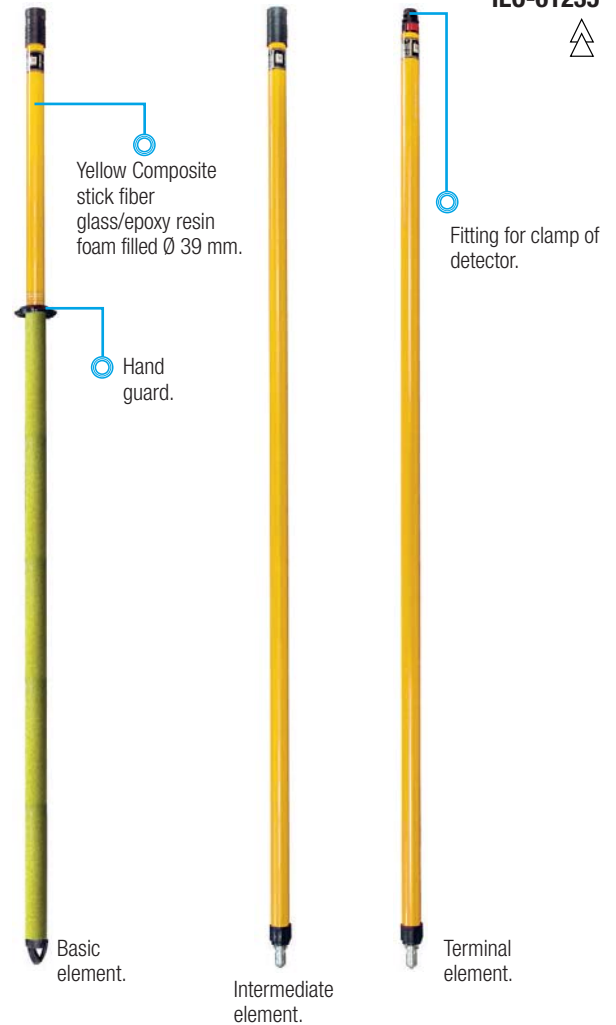
Epoxy reinforced fiber-glass insulating Ø 36 mm. Shock resisting polycarbonate rain skirts Ø 100 mm, height 90 mm.

Reference	 m	Skirts nbr	 g
CF-5-40-(*)	1.50	1	1 150
CF-5-90-(*)	2.00	1	1 550

(\*) Reference to be completed by fitting: C, K or E.



IEC-61235





## Clamp dispenser heads and accessories

### Clamp dispenser heads

Copper aluminium alloy.

For MT-613/1 and 613/2 clamps

Reference	Head for 3 clamps	Head for 4 clamps	With pigtail hook
MT-630-C	■		
MT-630-K	■		
MT-630-S	■		
MT-635/1-C/K/S	■		■
MT-634-C/K		■	

For MT-613/1 and 613/2 clamps

Reference	Head for 3 clamps	Head for 4 clamps	With pigtail hook
MT-633-C	■		■
MT-633-K	■		■
MT-633-S	■		■
MT-634/1-C/K		■	■

### Earth rod

Reference	Characteristics	Length (m)
MT-650	Hexagonal section rod	1

### Earth clamp

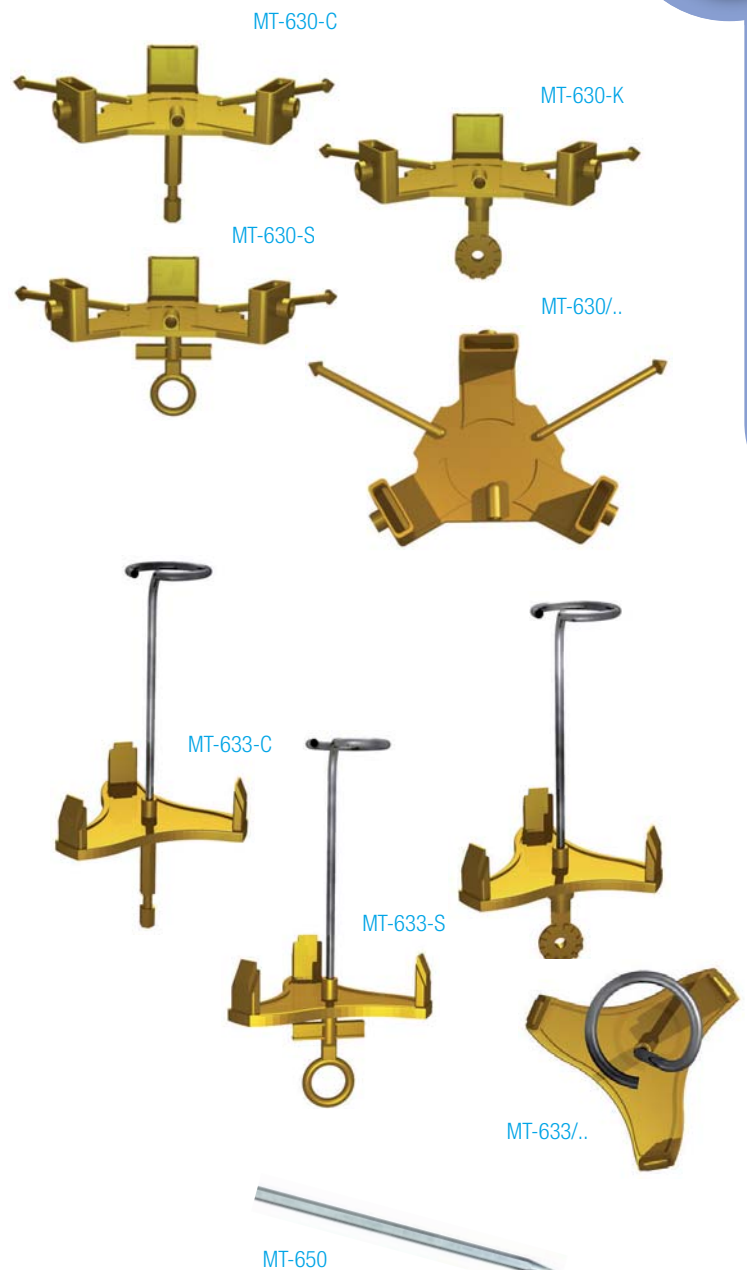
Copper aluminium bronze earth clamps.

Reference	Weight (kg)	Conductors (mm)
MT-840/1	0.48	Ø 6-25 0-25
MT-843	0.95	Ø 6-35 0-35

### Spool with earthing connection


Spool with cable and earth clamp.

Reference	Silicone cable (mm <sup>2</sup> )	Length (m)
MT-640-S	16	16
MT-641-S	16	25



## Short-circuiting and earthing systems

Installed from the ground on conductors up to 10.50 m.

Reference	Rating (kA/1 s)	 conductor
MT-508/36	8	3-22
MT-508/46	8	3-22

Reference	Composition
MT-508/36	3 telescopic metallic sticks 3 elements L = 6.00/2.37 m - 2.4 kg - MT-512/36
	1 insulating stick 2 elements 1.65 m - MT-531
	Reel for 3 cables 10 m x 35 mm <sup>2</sup> with earth connect. for attachment to stick - MT-543/35
	1 earth rod 1 m - MT-650
MT-508/46	1 bag, 2.50 x 0.30 x 0.15 - 10.5 kg - M-87-127
	3 telescopic metallic sticks 4 elements L = 5.10/1.62 m - 2.1 kg - MT-512/46
	1 insulating stick 2 elements 1.65 m - MT-531
	1 insulating intermediate stick element 1.65 m - CM-4-165-B
	1 stick lifter - MT-546
	Reel for 3 cables 10 m x 35 mm <sup>2</sup> with earth connect. for attachment to stick - MT-543/35
	1 earth rod 1 m - MT-650
	1 bag M-87-208

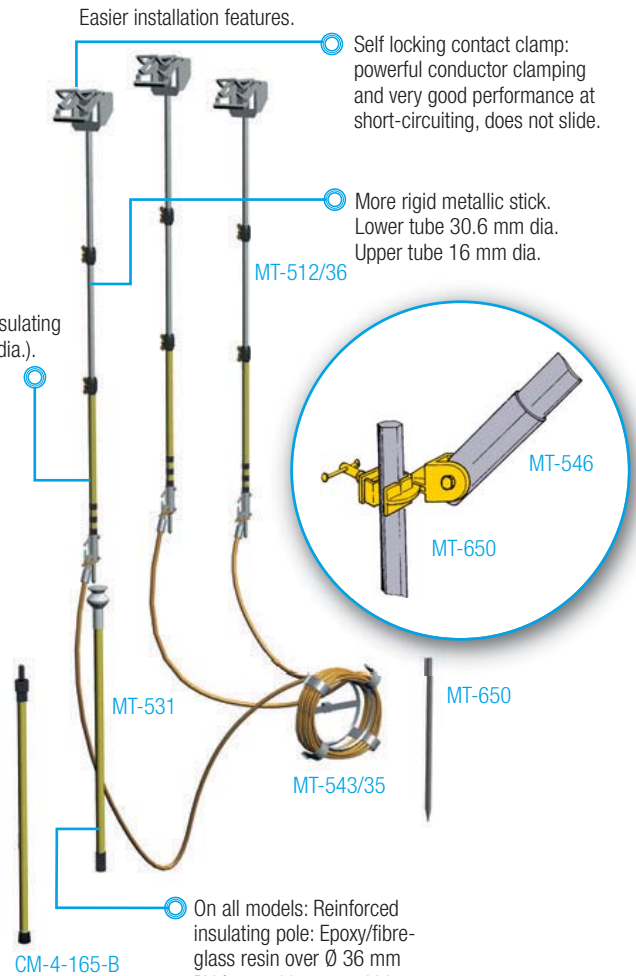
Easier installation features.

Self locking contact clamp:  
powerful conductor clamping  
and very good performance at  
short-circuiting, does not slide.

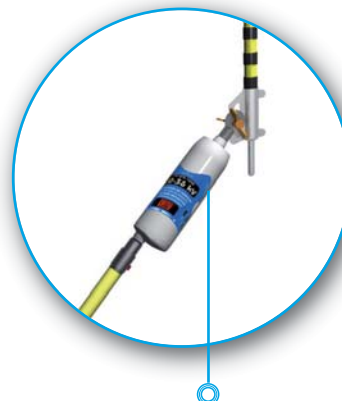
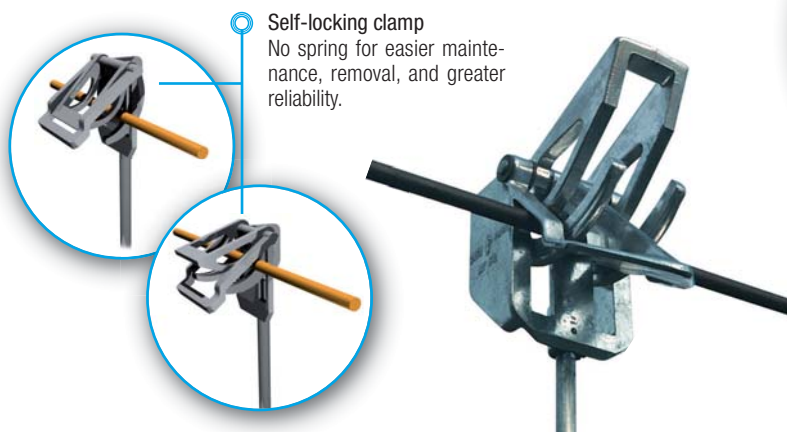
More rigid metallic stick.  
Lower tube 30.6 mm dia.  
Upper tube 16 mm dia.

MT-512/36

Re-inforced insulating  
stick (36 mm dia.).



On all models: Reinforced  
insulating pole: Epoxy/fibre-  
glass resin over Ø 36 mm  
PV foam with a non-skid  
area. This equipment can be  
used for rigid deployed poles  
for easy installation.



On-the-spot voltage testing  
with a CC-875 detector  
attached to a metal pole  
with a combination Ve/flag  
antenna.







### Copper cables

\* IEC-61230

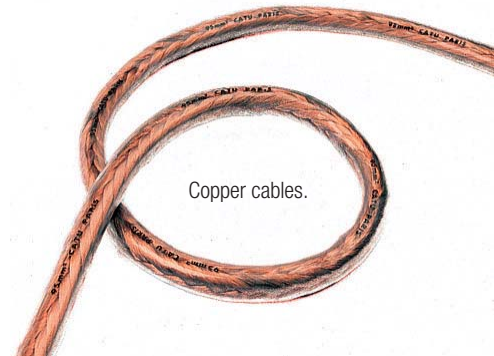


Extra flexible braided multi-strand cables. Transparent PVC sheath, with cable section identification. Transparent silicon sheath according to IEC-61230. Resistant to temperature variations (-40 °C to +70 °C) with double IEC triangle marked on cable section.

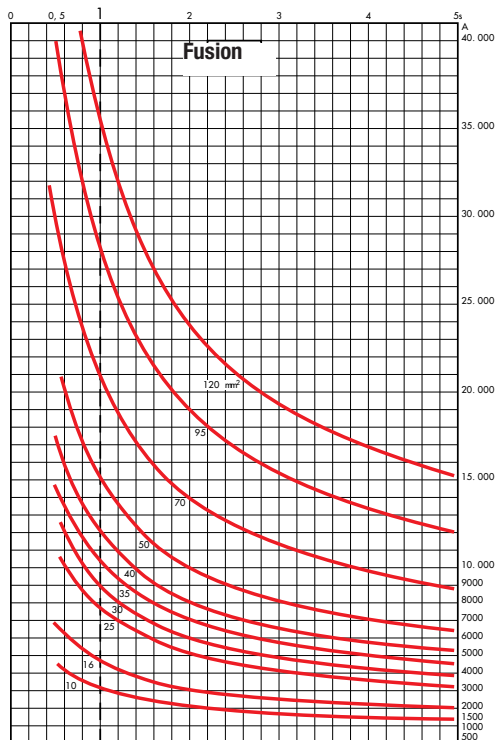
Reference		Rating (kA/1 s)	Cable		Section (mm <sup>2</sup> )
A	B*		Weight (kg/m)	Ø (mm)	
M-24-10	—	2	0.105	4.5	10
M-24-16	M-24-16-S	3.5	0.156	5.6	16
M-24-25	M-24-25-S	6	0.5	7.5	25
M-24-30	—	7	0.330	8	30
M-24-35	M-24-35-S	8	0.86	9	35
M-24-40	M-24-40-S	10	0.440	9.5	40
M-24-50	M-24-50-S	12	0.545	10	50
M-24-70	M-24-70-S	16	0.768	12	70
M-24-75	—	20	0.800	12	75
M-24-95	M-24-95-S	20	1.000	14	95
M-24-120	M-24-120-S	30	1.280	17	120
M-24-150	M-24-150-S	40	1.630	19	150

A: Transparent PVC sheath, with cable section identification.

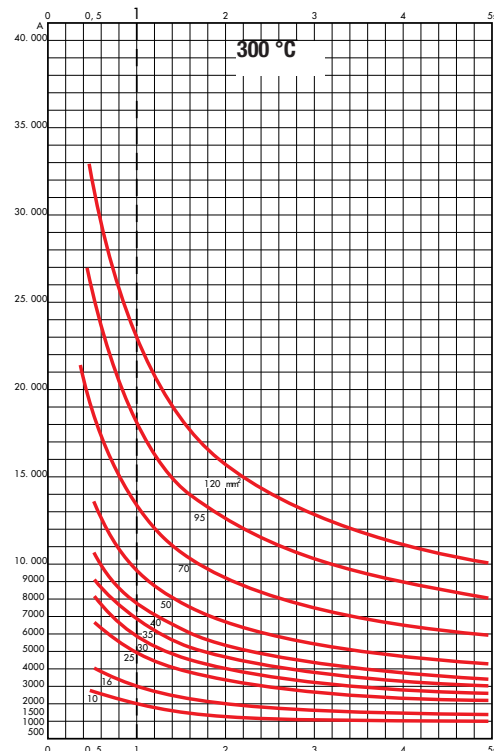
B: Transparent silicon sheath according to IEC-61230. Resistant to temperature variations (-40 °C to +70 °C) with double IEC triangle marked on cable section.



Copper cables only: Heating curves  
(Gut & Grundberg method).



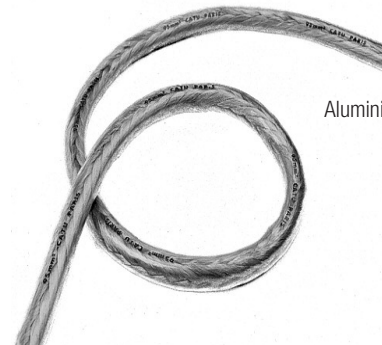
Copper cables only:  
Heating curves - 300 °C.



## Aluminium cables

Extra flexible braided multi-strand cables.  
Transparent PVC sheath, with cable section identification.


Reference	Rating (kA/1 s)	Cable		Section (mm <sup>2</sup> )
		Weight (kg/m)	Ø (mm)	
<b>M-28-50</b>	7.0	0.170	11.5	50
<b>M-28-70</b>	10.0	0.240	13.4	70
<b>M-28-120</b>	17.5	0.430	19.00	120
<b>M-28-150</b>	20.0	0.510	21.00	150



Aluminium cable.

## Jumper cables realisation specially manufactured items

Assembly consisting of three copper cables or braids for short circuiting, connected to a copper ground wire through a trifurcating box.

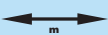


Reference	Characteristics	Rating (kA/1 s)	
<b>MT-40</b>	3 cables 40 mm <sup>2</sup> - L = 0.75 m 1 earth cable 40 mm <sup>2</sup> - L = 2 m	10	2 300
<b>MT-70/1</b>	3 cables 70 mm <sup>2</sup> with equipped lugs - L = 1.20 m 1 earth cable 35 mm <sup>2</sup> - L = 2 m	14	4 400



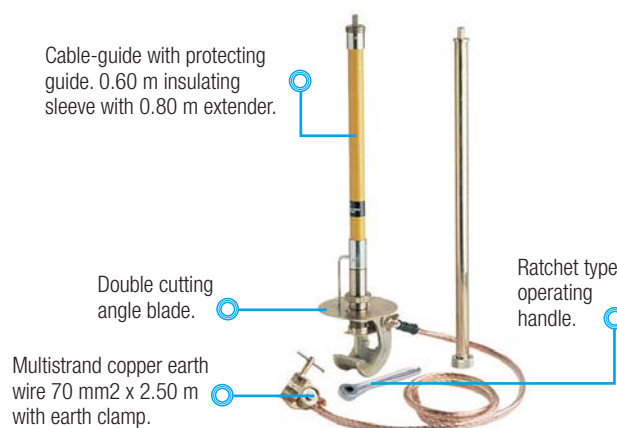


## Cable testing stick

Enables piercing of cable insulation and shielding, earthing up to 50 kV.  
Capacity: 70 mm dia.




Reference	 m	 mm	 g
MP-211	1.60	Ø 60 maxi	8 750

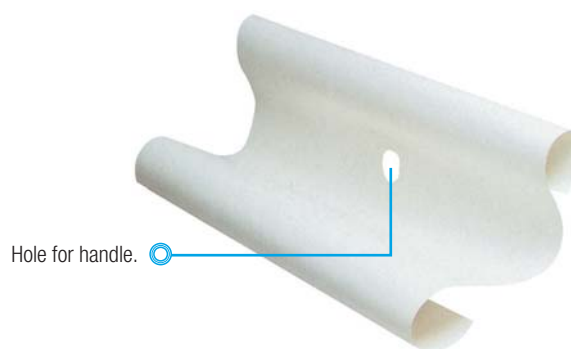
Carrying Case available separately (MP-02).



## Insulating blanket


Must be placed over the piercing point

Reference	 mm	 mm	 g
MP-212	900 X 900	Ø 50	960



## Cable spike equipment





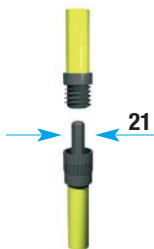



























Device to test the voltage on underground cables (1<sup>st</sup> and 2<sup>nd</sup> categories) and their earthing, using a system with cartridges and throwing in the cable a steel treated blade.

Reference	Characteristics	 g
MP-213 *	Cable spike	20 000
MP-213/LAM	Spare blade for spade-cable MP-213	20
MP-213/EXT	Blade extractor for spade-cable MP-213	200

\* Delivered complete in suitcase.



Connection adaptors for insulating sticks


	 C hexagonal		 K universal		 E bayonet		 S clamp-stick		 A ou B "MAJOR" Serie CM-4 / CM-6.			
Accessories	 C				 K				 E			
Connection adaptors	 CI-7-C	 CI-3-C	 CI-6-C	 CI-5-C	 CI-3-K	 CI-4-K	 CI-6-K	 CI-7-K	 CI-5-K	 CI-3-E	 CI-7-E	 CI-4-E
Sticks	 E	 AB	 K	 S	 AB	 C	 K	 E	 S	 AB	 K	 C

With this range any accessory can be attached to any stick by using connection adaptors. Other models, please consult us.





## Manœuvring hook

Reference	Characteristics	
CM-02- <sup>(*)</sup>	Bronze-copper nickel aluminium	120
CM-03-K	Bronze-copper nickel aluminium	120

(\*) Add end-fitting: C, E or K.



CM-02-K





CM-02-C



CM-03-K

## Cleaning brushes

Reference	Characteristics		
MD-10-C	Concave brush with two rows of perpendicular bristle	100 x 125 x 170	500
MD-12-C	Round head brush	175 x 228	500
MD-14-C	Adjustable hinged round head brush	175 x 328	500



MD-12-C





MD-10-C



MD-14-C

## Trimmer and pruning saw

Reference	Characteristics		
MD-40-B	Trimmer, maximum capacity Ø 45 mm (for branches up to 28 mm depending on tree species)	375 x 240 x 60	1 200
MD-42-B	Pruning saw on rigid frame, 34 cm blade	125 x 610 x 60	1 100
M-92-28	Replacement blade MD-42-B	—	—





MD-40-B



MD-42-B

## Fuse puller


All parts in metal protected against corrosion.

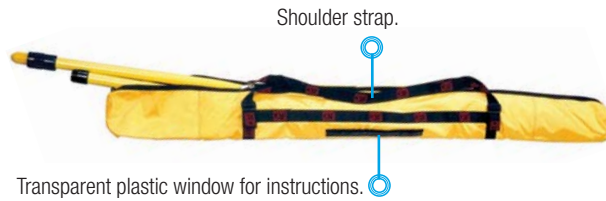
Reference		
CM-04-K	230 x 80	up to 70



## Insulating Stick bags

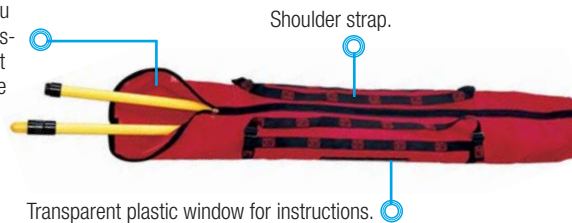
Strong waterproof canvas cases with a heavy duty zipper closure.

Reference	 m
CM-1-10	1.30 m Lg
CM-1-15	1.80 m Lg
CM-1-20	2.40 m Lg
CM-3-03	0.575 x 1.950 (elmt 1.75 m Lg)
CM-3-04	0.575 x 2.450 (elmt 2 m Lg)
CM-3-05	0.575 x 2.850 (elmt 2.50 m Lg)
CM-3-06	0.575 x 3.400 (elmt 3 m Lg)



MC-1-...  
For 1 to 3 poles.

The flared shape lets you position accessories without having to take them out.



CM-3-...  
For elements series CM-6.  
For 5 simple elements or 4 double elements.

# Railways Electrical safety equipment



# CATU™

# HV lines and switchgear equipment

Voltage detectors	134
Insulating sticks	135
Clamps	136
Earthing system “APE”	137
Insulating sticks and earth clamps	138
Copper and aluminium cables	139
Accessories	140



## Ac voltage detector for outdoor/indoor use

Precise and stable operating threshold. Insensitivity to induced voltages by limiting the operating voltage range. Remarkably resistant to impacts, vibrations, extreme temperatures, humidity. Double signaling.

Voltage presence indicated at the same time by:

- 4 bright red flashing electro-luminescent diodes (visible at more than 50 meters even in direct lighting),
- a powerful rated acoustic signal (60 dB/2 m).

The CC-245 detectors are available according to the models with end fittings:

**W:** Hexagonal 20 mm,

**C:** Hexagonal 12 mm,

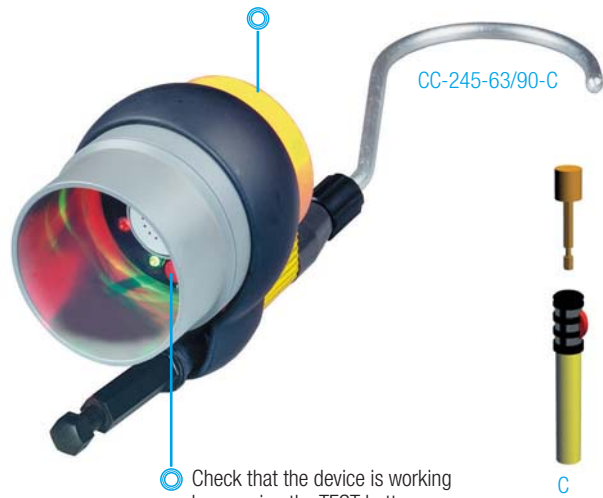
**K:** Universal.

Put on "silent block".

IEC 61243-1 edition 2

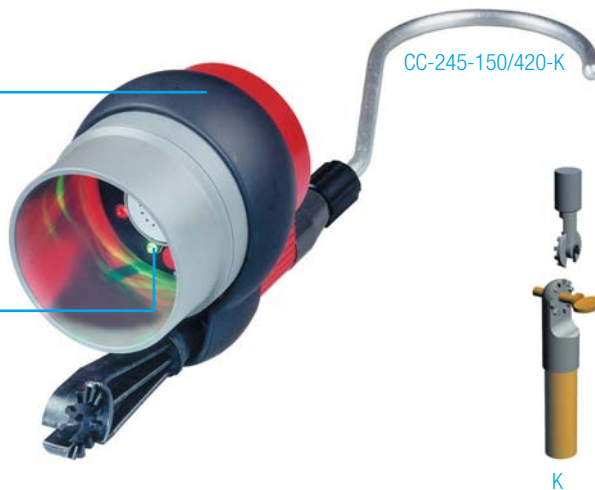






Robust housing made from polycarbonate with high mechanical properties and dielectric strength.



Surrounded by a rubber impact-resistant padding.

Two **GREEN** illuminated lights, indicating that the device is on. These lights turn off, and four **RED** lights illuminate when a voltage is detected.



Reference	IEC 61243-1 edition 2	 (Operating voltage)	Contact electrode	Body colour	 type 6 LR 61		
CC-245-63/90- <b>(*)</b>	•	63 - 90 kV	Ø 120 mm	Yellow	9 V	-25/+55 C°	650
CC-245-150- <b>(*)</b>	•	150 kV	Ø 120 mm	Red	9 V	-25/+55 C°	650
CC-245-225/420- <b>(*)</b>	•	225 - 420 kV	Ø 200 mm	Red	9 V	-25/+55 C°	650
CC-245-60/150- <b>(*)</b>	•	60 - 150 kV	Ø 120 mm	Red	9 V	-25/+55 C°	650
CC-245-63/150- <b>(*)</b>	•	63 - 150 kV	Ø 120 mm	Red	9 V	-25/+55 C°	650
CC-245-90/225- <b>(*)</b>	•	90 - 225 kV	Ø 120 mm	Red	9 V	-25/+55 C°	650
CC-245-150/420- <b>(*)</b>	•	150 - 420 kV	Ø 120 mm	Red	9 V	-25/+55 C°	650
CC-245-225/550- <b>(*)</b>	–	225 - 550 kV	Ø 200 mm	Red	9 V	-25/+55 C°	650
CC-245-315/765-1- <b>(*)</b>	–	315 - 765 kV	Ø 200 mm	Red	9 V	-25/+55 C°	650

Delivered in synthetic case with handle, battery and electrodes 370 x 165 x 145 mm.

**(\*)** Please specify type of mounting when ordering: C or K.











## Insulating sticks for manoeuvring detectors & short-circuiting and earthing systems

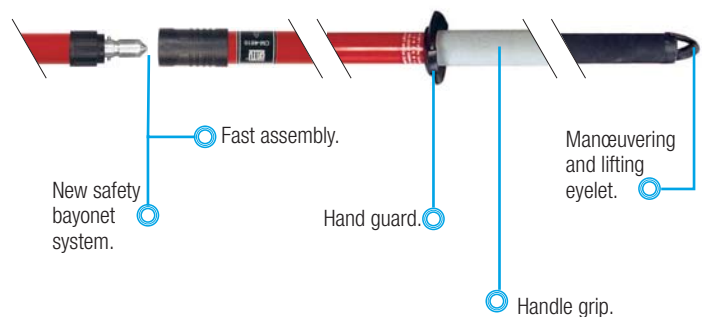
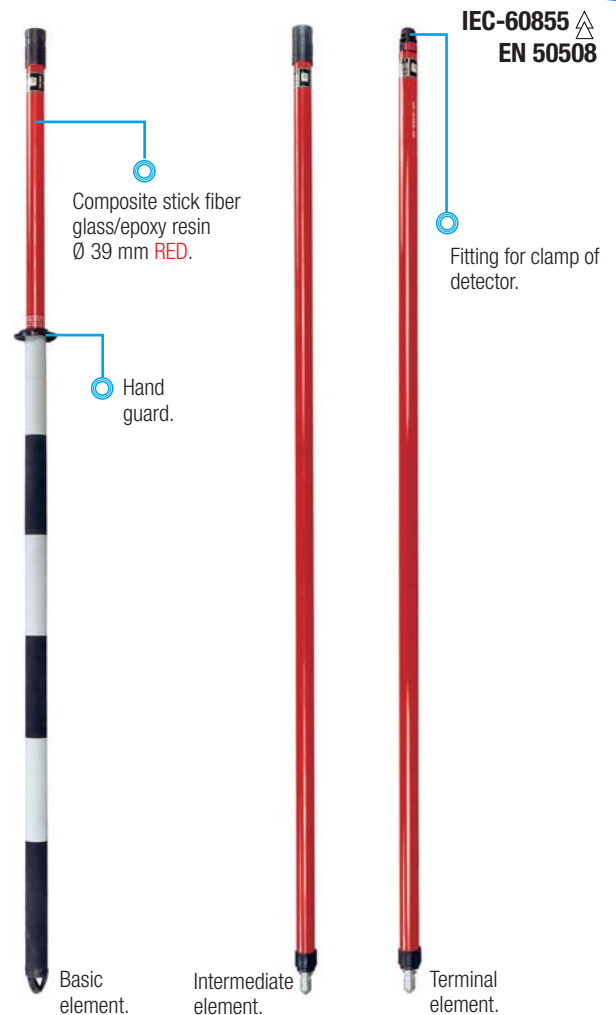
This range thus allows a stick-length limitation in case of space requirements and carrying capabilities.

For common applications a series of complete sets including 2 or 3 elements are made to give simple solutions for working distance from 2 to 6 meters.

	Reference				
		smallest end fitting	biggest end fitting	Insulating	
Basic	CM-4610	1.13	—	0.08	1 350
	CM-4615	1.63	—	0.33	1 800
	CM-4620	2.13	—	0.33	2 800
	CM-4625	2.63	—	0.83	3 300
Intermediate	CM-4610-I	1.165	—	0.8	1 300
	CM-4615-I	1.665	—	1.3	1 700
	CM-4620-I	2.165	—	1.8	2 600
	CM-4625-I	2.665	—	2.3	3 100
Terminal	CM-4610-(* )	1.115	1.21	0.78	1 000
	CM-4615-(* )	1.615	1.71	1.28	1 400
	CM-4620-(* )	2.115	2.21	1.78	2 200
	CM-4625-(* )	2.615	2.71	2.28	2 700
Fixed sticks	CM-4115-(* )	1.575	1.675	0.82	1 350
	CM-4120-(* )	2.075	2.175	1.07	1 800
	CM-4125-(* )	2.575	2.675	1.32	2 800
	CM-4130-(* )	3.075	3.175	1.82	3 300


(\*) Reference to be completed by fitting: C-E-H-K-T-D.

Reference		
CM-3900-J	0.36	950



## Set of sticks

Complete sets of sticks for common applications.

Reference	Composition	
CM-4220-(* )	2 elements: CM-4610+CM-4610-(* )	2
CM-4230-(* )	2 elements: CM-4615+CM-4615-(* )	3
CM-4240-(* )	2 elements: CM-4620+CM-4620-(* )	4
CM-4345-(* )	3 elements: CM-4615+CM-4615-I+CM-4615-(* )	4.5
CM-4360-(* )	3 elements: CM-4620+CM-4620-I+CM-4620-(* )	6


(\*) Reference to be completed by fitting: C-E-H-K-T-D.

 Total length

 Weight

**CATU**

## HV and EHV clamps manoeuvrable by insulating stick

\* IEC 61230 

Body in aluminium alloy with trapezoidal threaded screw. Interposed elastic washers in the clamping system improve efficiency and ensure a higher withstand in case of electrodynamic shock. Manoeuvring by CM-6 insulated stick of appropriate length and characteristics.



MT-731-E



MT-732-E












MT-734 \*






MT-735-H \*



MT-737-H \*

Manoeuvrable clamps	        								
	MT-732-A MT-731-A	MT-732-B MT-731-B	MT-732-E MT-731-E	MT-732-H MT-731-H	MT-734 MT-735	MT-734-A MT-735-A	MT-734-B MT-735-B	MT-734-E MT-735-E	MT-734-H MT-735-H

Reference	Rating (kA/1 s)		Copper connection				
			Copper cables **	Contact range width	Stud		
MT-731-(*)	40	200 x 200 x 50	150 mm <sup>2</sup> max.	45 mm	M 12	Ø 5-60	1 450
MT-732-(*)	40	200 x 200 x 50	150 mm <sup>2</sup> max.	45 mm	M 12	Ø 40-120	1 450
MT-734-(**)	40	145 x 125 x 52	150 mm <sup>2</sup> max.	40 mm	M 12	Ø 5-40	800
MT-735-(*)	40	178 x 175 x 60	150 mm <sup>2</sup> max.	40 mm	M 12	Ø 15-60	1 450
MT-737-H	40	340 x 200 x 55	150 mm <sup>2</sup> max.	40 mm	M 12	Ø 20-120	1 350

(\*) Add type of connection A - B - E - H.

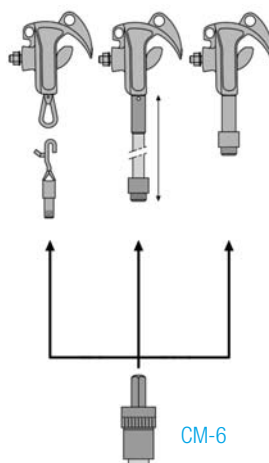
(\*\*) Add type of connection B - E - H.

\*\* Other cable sections: see page 139 or 140.

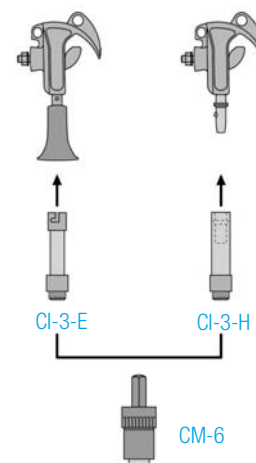
Attachment of MT-735 or MT-734 clamps with MT-717-3-B hook.



Direct connection.



Connection adaptor.





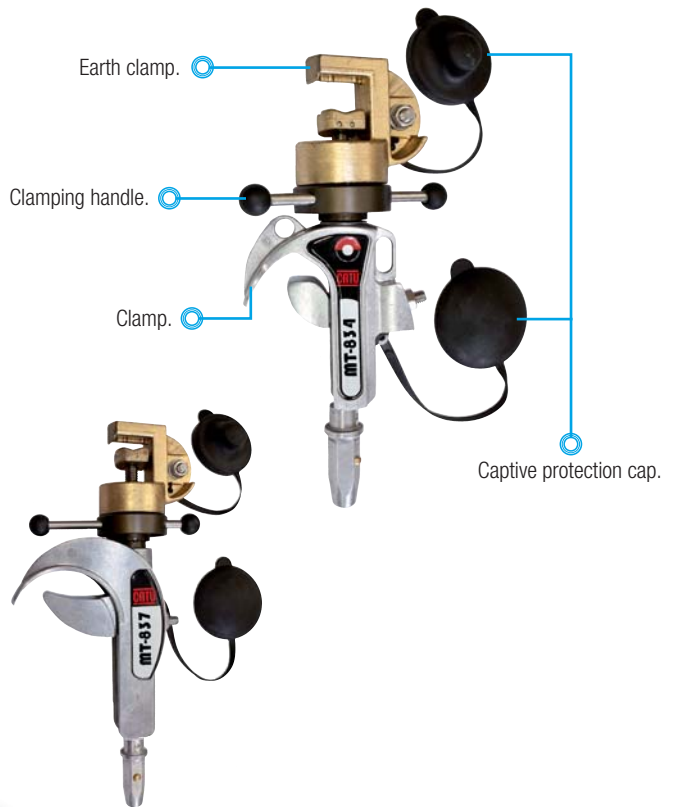
## Earthing system with clamp interlocking




The APE is a grounding system with an interlocking system between earthing clamp and line clamps. It is used for safe and accurate installation (earthing clamp and then line clamp) and removal (line clamp and then earthing clamp).



### SPECIAL FEATURES

- Locking system using a patented system with more than 30,000 possible combinations.
- Easy installation and removal without additional accessories.
- Automatic trip at the recommended torque on support withstand the short circuit current.
- System security (unable to be unlocked without the associated clamp).






Reference	Rating	Use	Fitting	Connection				
				Range	Stud			
MT-834-H*	31.5 kA/1 s	Substation	H hexagonal	width 38 mm	M 12	360 x 200 x 85	5 - 40	9 600
MT-834-E*	31.5 kA/1 s	Substation	E bayonet	width 38 mm	M 12	360 x 200 x 85	5 - 40	9 600
MT-834-T*	31.5 kA/1 s	Substation	T bayonet	width 38 mm	M 12	360 x 200 x 85	5 - 40	9 600
MT-835-H*	31.5 kA/1 s	Substation	H hexagonal	width 38 mm	M 12	390 x 200 x 85	15 - 60	10 440
MT-835-E*	31.5 kA/1 s	Substation	E bayonet	width 38 mm	M 12	390 x 200 x 85	15 - 60	10 440
MT-835-T*	31.5 kA/1 s	Substation	T bayonet	width 38 mm	M 12	390 x 200 x 85	15 - 60	10 440
MT-837-H*	31.5 kA/1 s	Substation	H hexagonal	width 38 mm	M 12	470 x 220 x 85	20 - 120	11 640
MT-837-E*	31.5 kA/1 s	Substation	E hexagonal	width 38 mm	M 12	470 x 220 x 85	20 - 120	11 640
MT-837-T*	31.5 kA/1 s	Substation	T hexagonal	width 38 mm	M 12	470 x 220 x 85	20 - 120	11 640
MT-934*	31.5 kA/1 s	Line	ring	width 38 mm	M 12	360 x 200 x 85	5 - 40	9 600
MT-935*	31.5 kA/1 s	Line	ring	width 38 mm	M 12	390 x 200 x 85	15 - 60	10 440

\*One reference including 3 phases, so 3 clamps equipped.

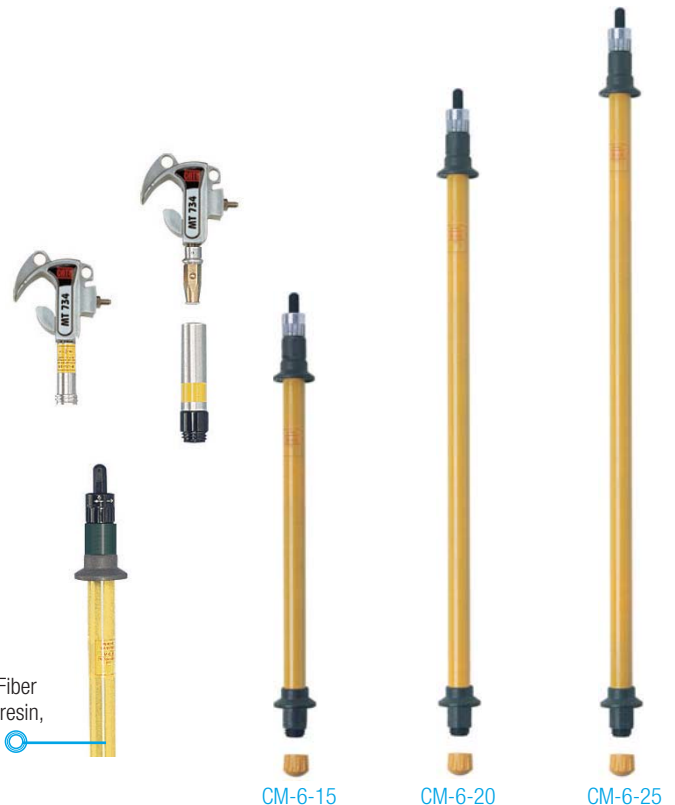
## Insulating sticks for short circuiting and earthing systems

For cables  $\geq 95 \text{ mm}^2$  CM-6 series is recommended.  
Yellow colour elements, with superior characteristics, they are connected between them without any prior order of assembly. These elements allow "long length" assemblies which can support short-circuit systems with large cross-section cables Shockproof guard and pole end cap.

Reference	 mm	 mm	 g
CM-6-15	1.5	47	2 400
CM-6-20	2.0	47	3 200
CM-6-25	2.5	47	4 000
CM-6-30	3.0	47	4 800




Composite tube Fiber glass and epoxy resin, yellow colour.

IEC-61235



## Earth clamps

Copper aluminium bronze earth clamps.

Reference	Rating	Use	Connection $\emptyset$ (mm)	 mm	 mm	 g
MT-843	40 kA/1 s	Substation/ Overhead line	Hole: $\emptyset$ 12.5	45 x 106 x 165	• $\emptyset$ 6 -25 — 0 - 35	950
MT-843-P	40 kA/1 s	Substation	3 Holes: $\emptyset$ 12.5	45 x 106 x 165	• $\emptyset$ 6 -35 — 0 - 35	950
MT-847	30 kA/0.5 s	Overhead line	Hole: $\emptyset$ 13	45 x 106 x 170	— 0 - 30	1 000
MT-852	63 kA/0.5 s	Substation	Hole: $\emptyset$ 13	70 x 125 x 155	Fixed points	1 400
MT-853	40 kA/0.5 s	Substation	Hole: $\emptyset$ 13	65 x 130 x 135	Fixed points	1 000



MT-843

MT-843-P

MT-847

MT-852

MT-853





## Equipotential Lines

### USE

Conductive line connecting two pieces of metallic pieces in order to give them the same potential.

IEC-61230



### Cable composition and features:

35 mm<sup>2</sup> copper cable insulated in a green silicone sheathing.  
Double crimped lugs at the cable ends.

Reference	Characteristics
ZCESSV3502C1240	Cable 35 mm <sup>2</sup> L = 2 m crimped lug Ø 12
ZCESSV3503C1240	Cable 35 mm <sup>2</sup> L = 3 m crimped lug Ø 12
ZCESSV3504C1240	Cable 35 mm <sup>2</sup> L = 4 m crimped lug Ø 12
ZCESSV3505C1240	Cable 35 mm <sup>2</sup> L = 5 m crimped lug Ø 12
ZCESSV3506C1240	Cable 35 mm <sup>2</sup> L = 6 m crimped lug Ø 12
ZCESSV3507C1240	Cable 35 mm <sup>2</sup> L = 7 m crimped lug Ø 12
ZCESSV3510C1240	Cable 35 mm <sup>2</sup> L = 10 m crimped lug Ø 12
ZCESSV3512C1240	Cable 35 mm <sup>2</sup> L = 12 m crimped lug Ø 12
ZCESSV3515C1240	Cable 35 mm <sup>2</sup> L = 15 m crimped lug Ø 12
ZCESSV3550C1240	Cable 35 mm <sup>2</sup> L = 50 m crimped lug Ø 12



### Equipotential line composition and characteristics:

400 mm insulating stick.

Light alloy **EMCC-3735** clamp attached to the stick with a tightening capacity of Ø 15 to 60 mm. Copper cable see above. Earthing clamp **MT-847** made from copper and aluminum.

Reference	Characteristics
ZLEQ3735L04	Clamp <b>MT735</b> short stick + Cable <b>GREEN</b> 35 mm <sup>2</sup> L = 4 m crimped lug Ø 12
ZLEQ3735L06	Clamp <b>MT735</b> short stick + Cable <b>GREEN</b> 35 mm <sup>2</sup> L = 6 m crimped lug Ø 12
ZLEQ3735L010	Clamp <b>MT735</b> short stick + Cable <b>GREEN</b> 35 mm <sup>2</sup> L = 10 m crimped lug Ø 12
ZLEQ3735L15	Clamp <b>MT735</b> short stick + Cable <b>GREEN</b> 35 mm <sup>2</sup> L = 15 m crimped lug Ø 12

## Copper cables

\*\*\* IEC-61230



Extra flexible braided multi-strand cables. Available on transparent PVC sheath **A** or transparent silicone sheath **B\*\*\***.

Reference		Rating (kA/1 s)	Cable		Section (mm <sup>2</sup> )
A*	B**		Weight (kg/m)	Ø (mm)	
M-24-70	M-24-70-S	16	0.768	12	70
M-24-75	—	20	0.800	12	75
M-24-95	M-24-95-S	20	1.000	14	95
M-24-120	M-24-120-S	30	1.280	17	120
M-24-150	M-24-150-S	40	1.630	19	150

\* Transparent PVC sheath, with cable section identification.

\*\* Transparent silicone sheath according to IEC-61230. Resistant to temperature variations (-40 °C to +70 °C) with double IEC triangle marked on cable section.



## Aluminium cables



Extra flexible braided multi-strand cables.  
Transparent PVC sheath, with cable section identification.

Reference	Rating (kA/1 s)	Cable		Section (mm <sup>2</sup> )
		Weight (kg/m)	Ø (mm)	
<b>M-28-70</b>	10.0	0.240	13.4	70
<b>M-28-120</b>	17.5	0.430	19.00	120
<b>M-28-150</b>	20.0	0.510	21.00	150



## Adjustable access points



For large vertical or oblique heavy duty conductors.

Reference	Characteristics	Rating (kA/1 s)		Conductor		
				Type	Ø mm	
<b>MT-790</b>	Copper/Alu alloy Ø 18 mm	30	255 x 105 x 50	Copper	Ø 12 - 60	1 400
<b>MT-792</b>	Light alloy Ø 20 mm	30	270 x 105 x 60	Aluminium	Ø 12 - 60	855
<b>MT-797</b>	Light alloy Ø 20 mm	30	240 x 170 x 60	Aluminium	Ø 60 - 120	1 200



## Earthing kit support

Welded steel assembly with galvanization surface treatment.  
Writing zone available.




Reference		
<b>MT-895</b>	230 x 230 x 150	900

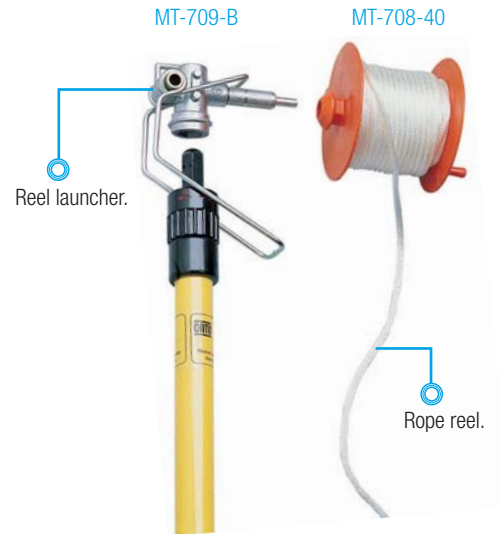




## Rope operated clamp

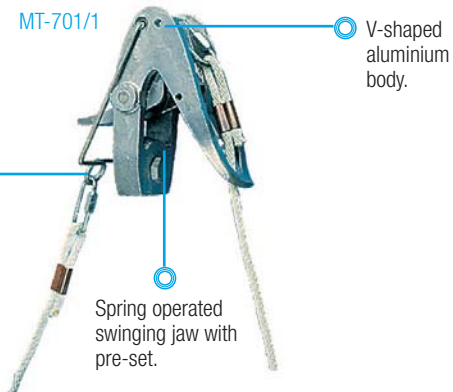
Attachment and removal is carried out from the ground or from the cross-arm, using a rope passed previously over the conductor to be earthed. Up to 10 m: by using **MT-709-B** reel launcher placed on a **CM-6** SERIE Stick (see page 94) that passes the rope over the conductor; - up to 20 m: by using a **MF-60** wire projector. This projector fires an arrow carrying a braided nylon wire which sets the rope. The clamp is then fixed to the rope and attached onto the conductor.

Reference		lcc (kA/1 s)	I asym. (A)	 mm	 g
<b>MT-701/1</b>	Ø 12 - 48	30	72	195 x 120 x 175	2 000
Earthing cable: cable 120 mm <sup>2</sup> with crimped lugs on <b>M12</b> screw (x3)					



**Attachment:** the clamp is pulled up by the rope. Pulling on the rope triggers the spring and closes the jaw

**Removal:** pulling on the rope attached to the hinged saddles causes the clamp to pivot and free the jaw.



## Wire Gun Tester

An extremely simple way to test the voltage in an overhead line without leaving the ground. Just shoot a weighted arrow over the line - up to 18 m high - forming contact between the conductors through a very lightweight braided steel cable.



If they are both live, this produces a sparkover and alerts the user. The **MF-60** gun can also be used to shoot an insulating cord for handling **MT-701** contact clamps.

Reference	Characteristics
<b>MF-60</b>	Complete cable-launcher projector delivered in a waterproof bag with 2 spare arrow and 2 spool of 30 m fuse wire. 3.500 kg.
<b>MF-61</b>	Spare arrow.
<b>MF-62</b>	Spool of 30 m of fuse wire.
<b>MF-63</b>	Spool of 100 m of fuse wire.
<b>MF-66</b>	Spool of 30 m of nylon lead isolated hoisting cord.



## Short-circuiting and earthing system carrying bags

Can receive earthing system equipment (clamps and cables).

Reference	 mm	 g
<b>M-87-53</b>	380 x 250 x 400	2 000
<b>M-87-153</b>	380 x 250 x 600	2 500
<b>M-87-295</b>	550 x 300 x 300	1 500



M-87-295



M-87-53

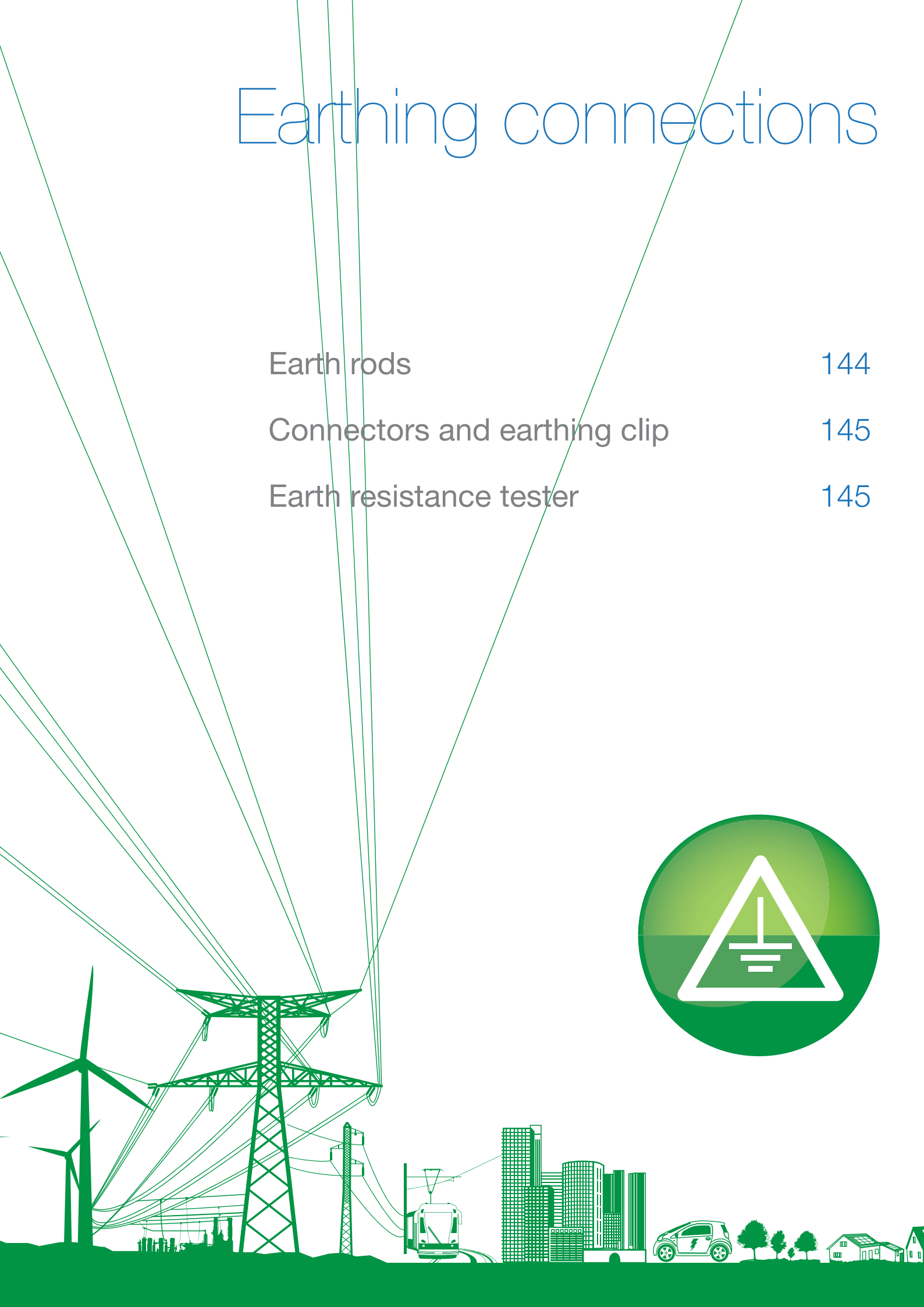


# Earthing connections

Earth rods 144

Connectors and earthing clip 145

Earth resistance tester 145



## Generality

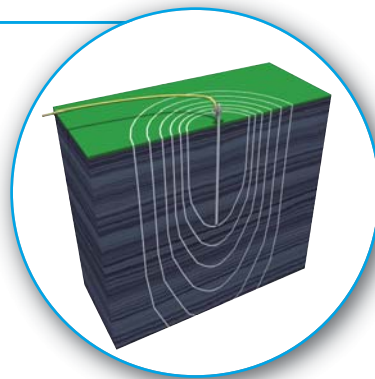


The rod is, in most cases, the most practical, effective and reliable earth connection means.

**Highly effective:** for a given contact surface area, the linear type electrode provides, both theoretically and practically, the least earth resistance. Furthermore, it enables the most moist and conductive layers to be reached.

**Easy and quick to install,** it requires no earth work. Even inside industrial buildings, it is often possible to install an earth rod exactly where required by breaking through a small area of the floor.

**Accessible and testable connection:** the use of an inspection box makes it possible to leave the head of the rod and its connection unburied and to periodically test it and measure its resistance.



**Self connectable rods:** The lower end of each rod is equipped with a point used both for driving into the earth and for connection; the upper pierced end receives (without the sleeve) the point of the previous rod. Use a rivetting head so as not to damage the upper end when driving in.

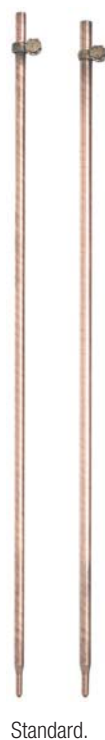
**Connectable rods:** Conical slide-in provides perfect assembly stability. For deep earth connections.

Copper/steel (350  $\mu$  coating) earth rods

Reference	Type	$\varnothing$ mm	$\longleftrightarrow$ mm	$\mathbf{g}$	Connection
TP-1610-R	standard (1)	14.2 Unit 16	1.0	1.200	
TP-1615-R	standard (1)	14.2 Unit 16	1.5	1.800	
TP-1620-R	standard (1)	14.2 Unit 16	2.0	2.400	
TP-1910-R	standard	17.3 Unit 19	1.0	2.000	
TP-1915-R	standard	17.3 Unit 19	1.5	2.800	
TP-1920-R	standard	17.3 Unit 19	2.0	3.600	
TR-116-10	self connectable	14.2 Unit 16	1.0	1.100	T0-3-16/19 T0-2-16 TS-1601
TR-116-15	self connectable	14.2 Unit 16	1.5	2.000	
TR-119-10	self connectable	17.3 Unit 19	1.0	1.800	T0-3-16/19 T0-2-19 TS-1901
TR-119-15	self connectable	17.3 Unit 19	1.5	2.750	
TR-119-20	self connectable	17.3 Unit 19	2.0	3.500	
TR-1610	connectable (2)	14.2 Unit 16	1.0	1.250	T0-3-16/19 T0-2-16 TS-1601 TS-1602 TS-1603
TR-1615	connectable (2)	14.2 Unit 16	1.5	1.900	
TR-1620	connectable (2)	14.2 Unit 16	2.0	2.500	
TR-1910	connectable (2)	17.3 Unit 19	1.0	1.950	T0-3-16/19 T0-2-19 TS-1901 TS-1902 TS-1903
TR-1915	connectable (2)	17.3 Unit 19	1.5	1.850	
TR-1920	connectable (2)	17.3 Unit 19	2.0	3.750	

(1) Delivered completed with connection.

(2) Sleeves and spikes have to be ordered separately.



Standard.



Self connectable.



Connectable  
TZ-16...



TRI



TS-1903  
TS-1603



TS-1902  
TS-1602

## Stainless steel earth rods

Reference	Type	$\varnothing$ mm	$\longleftrightarrow$ mm	$\mathbf{g}$	Connection
TRI-1610	connectable	16	1.0	1 450	TZI-2001
TRI-1615			1.5	2 200	



## Connectors and earth tester

### Connectors

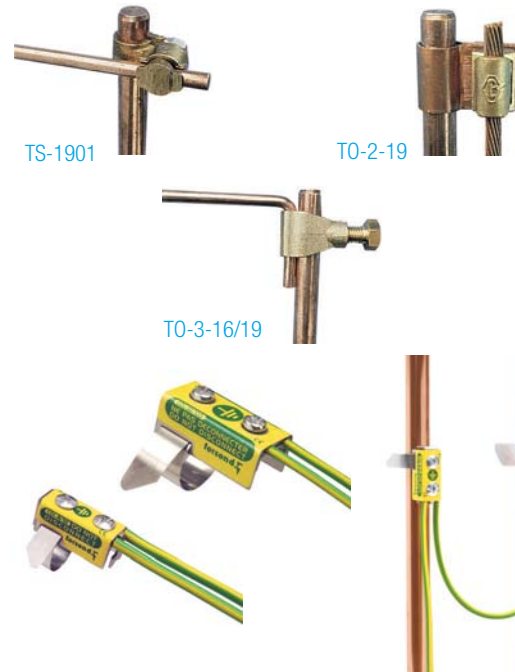
Reference	Ø Rod	Conductors Ø max. (mm)	Type section max. (mm²)
TO-2-16	16	40	Copper
TO-2-19	19	40	Copper
TO-3-16/19	19	40	Copper aluminium alloy
TS-1601	14	95	Copper aluminium alloy
TS-1901	19	95	Copper aluminium alloy

### Earthing clip

Interconnects to earth every metallic part of installations.

Reference	Conductors section (mm²)	Capacité de serrage (Ø mm)
TO-8/32	1 x 2.5 to 2 x 6	8-32
TO-32/100	1 x 2.5 to 2 x 16	32-100

Reference	mm	g
TF-1	180 mm	0.110



### Earth resistance tester

The **MX-430-M** allows the measurement of earth resistance and earth specific resistivity and also the parasite voltages caused by grounding parasitic voltage presence.

This equipment is suitable for fast and easy measurement of the grounding resistance in home, industrial buildings, substations,...

#### Technical features

- **Application:** measurement of grounding resistances (with 3 earth rods), earth resistivity (with 4 earth rods) and parasite voltage presence
- **Range of measurement:** 0 - 20 Ω ; 0-200 Ω ; 0-2000 Ω and 20 KΩ.
- **Voltmeter:** voltmeter function in AC range as a conventional voltmeter 0-200 V AC.
- **Operation frequency:** 1470 Hz.
- **Current in and out put power:** less than 0,5 W and the out put current is limited to less than 15 mA (peak to peak).
- **Operation temperature:** -10°C / +50°C.
- **Storage temperature:** -25°C / +65°C.
- **Humidity:** 95% RH (without condemnation).

Reference	mm	g
MX-430-M	221 x 189 x 99	2 000

### Accessories (measurement kit) MX-433-T

1 storage bag, 4 earth rod copper plated steel, 1 x 5 meter black cable, 1 x 40 meter red cable, 2 x 20 meter cable (1 blue and 1 green), 1 x 5 meter green cable to connect to the grounding system, 1 hammer, 1 reel tape measure 50 m.

Reference	Conductors section (mm²)	g
MX-433-T	570 x 220 x 160	7 700

High visibility 3 1/2 digit display with direct readings, even under sunlight.

A smart charger is microprocessor-controlled and can be powered from the mains by a power plug provided source or from a 12 V car battery.



Connexion wire including a 12 V car battery.

Accessories included:





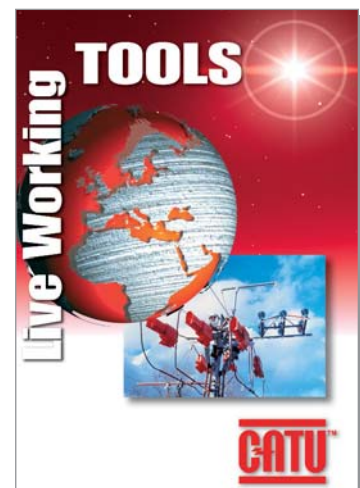
# LIVE WORKING TOOLS



Since the second world war, CATU has worked in close co-operation with EDF to research and develop safety equipment and practices for use on low and high voltage networks, initially in France and now worldwide.

Utilities would be better off efficiency of their networks by avoiding outages, whatever the costs. With the increasing recognition of EDF-Serect worldwide, CATU is fast becoming a major supplier in liveline working equipment. All the tools meet the specifications of the International Electrotechnical Committee (IEC).

CATU tools have a liveline life of around 20 years.

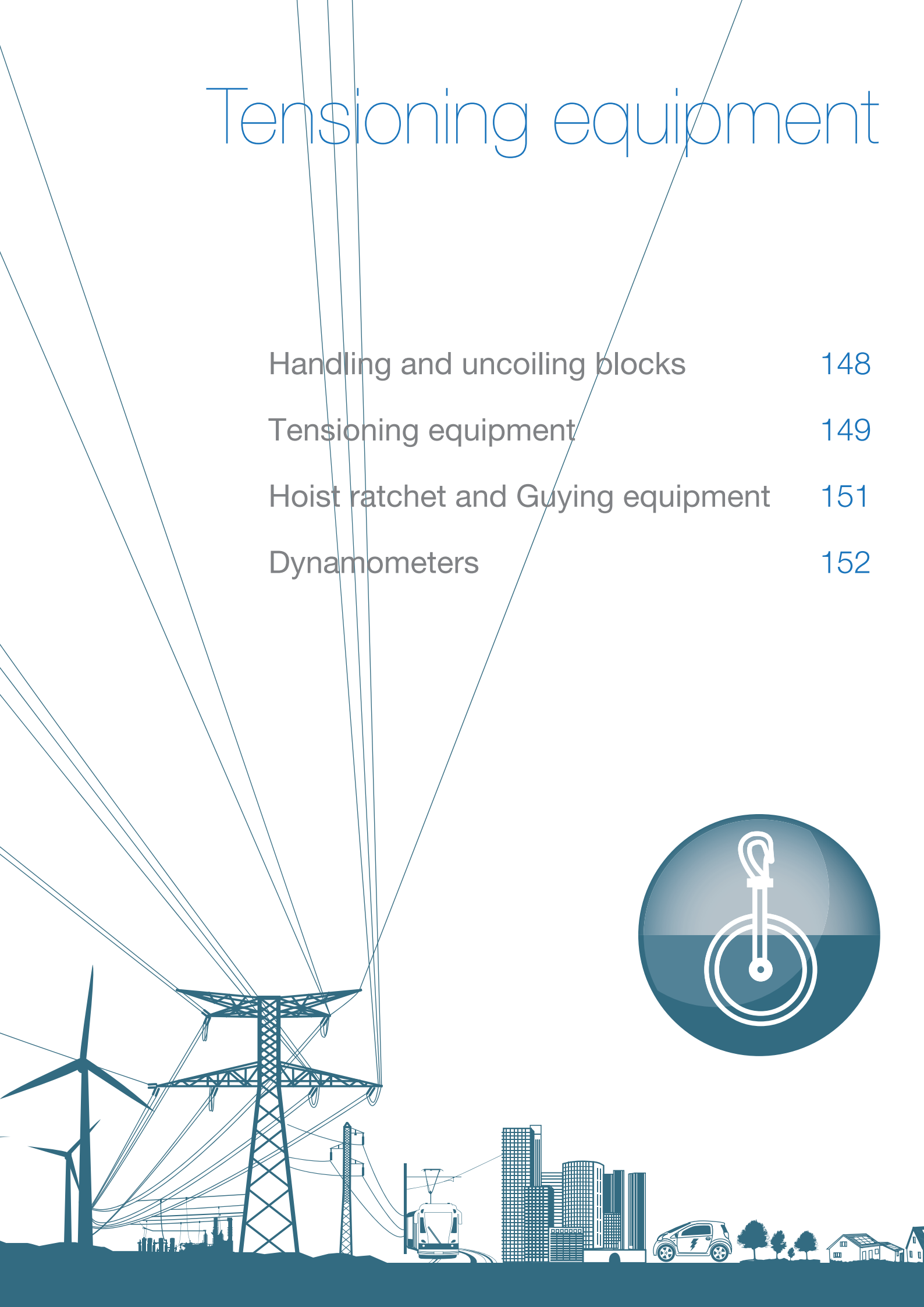
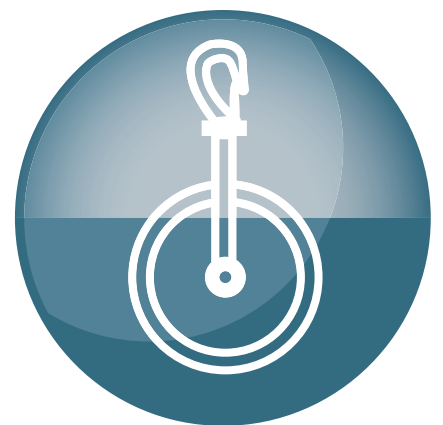


Catalogue available upon request.



# Tensioning equipment

Handling and uncoiling blocks	148
Tensioning equipment	149
Hoist ratchet and Guying equipment	151
Dynamometers	152



### Uncoiling block

Reference	Groove bottom	Cable	Working load (daN)	Hook	g
<b>MO-375/150 *</b>	160	22	1 000 max.	25	1 550
<b>MO-375/250 *</b>	250	38	1 000 max.	25	2 100
<b>MO-375/300 *</b>	300	36	1 500 max.	25	2 850
<b>MO-375/400 *</b>	400	80	2 000 max.	—	5 000
<b>MO-371/01 **</b>	140	80	800 max.	24	1 500

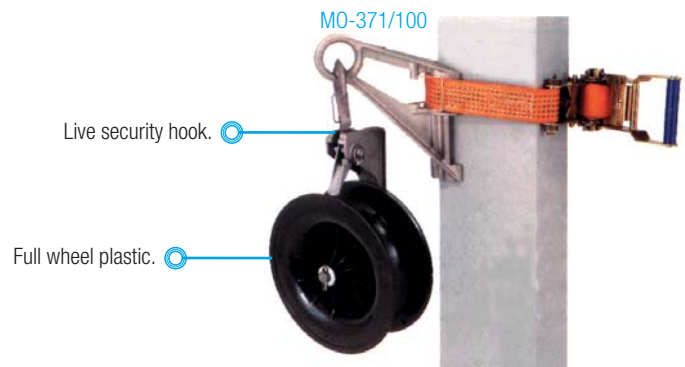
\* For insulating cables.  
\*\* For bare cables.



MO-375/...

Reference	Use	Working load (daN)	g
<b>MO-371/100</b>	Bracket with strap for MO-371/01*	800 max.	2 200

\* For insulated conductors.

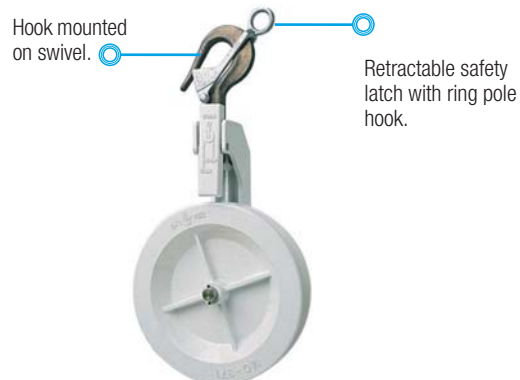


MO-371/01

### Insulating running-block

Is used in order to pull or adjust a bare on insulated conductor or a twister cable of insulated conductors.

Reference	Groove bottom	Rope	Working load (daN)	Hook	g
<b>MO-371</b>	130	24.5 max.	100	30	1 550



### Opening block

For elevation handling, single block and tackle and return block.

Référence	Groove bottom	Rope	Working load (daN)	Hook	g
<b>MO-308</b>	114	16 max.	250 max.	33 mm	3 000








## Pulling cable clip

**For bare conductors:** Almelec, Almelec-steel, aluminium-steel. Specially designed for handling and maneuvering from a distance, using a hooked pole.

Advanced mechanical characteristics due to the use of spheroidal graphite iron that is protected against corrosion.

Reference		Force (daN)	Length Jaw		
<b>MO-339/02</b>	Ø 5 à 15	2000 max.	127 mm	400	1 600
<b>MO-339/03</b>	Ø 8 à 20	3000 max.	140 mm	450	2 900


Locked to prevent the cable from escaping.




Can be locked while open using the attached shackle. Cable guided through a self-lubricated tube.

## Automatic come-along

For alu, alu alloy or ACSR.

Reference	Cable Ø	Working load (daN)	
<b>MO-332/09-D</b>	Ø 2.6 to 9.4 mm	800 max.	1 000
<b>MO-332/14-D</b>	Ø 6.4 to 14.3 mm	1 500 max.	1 300
<b>MO-332/13-E</b>	Ø 5 to 13.2 mm	2 500 max.	1 550
<b>MO-332/18-E</b>	Ø 12.7 to 18.8 mm	3 500 max.	4 100

Insulated cables.

Reference	Cable Ø	Working load (daN)	
<b>MO-331/13-P</b>	Ø 6 to 13.5 mm	600 max.	1 000
<b>MO-331/22-P</b>	Ø 17 to 22 mm	400 max.	1 000
<b>MO-331/38-P</b>	Ø 33 to 38 mm	800 max.	3 775





## Come-along

Reference		
<b>MO-337/06</b>	Ø 1-8 mm	300

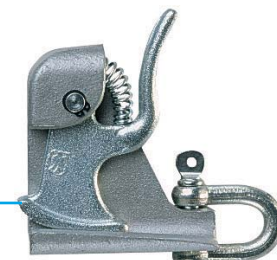


## Adjustment "Come-along"

**Tightening by cam jaw. For copper and aluminium conductors.**

Reference		Working load (daN)	
<b>MK-08</b>	Ø 2 to 8 mm	400 max.	300
<b>MK-15</b>	Ø 7 to 15 mm	600 max.	550
<b>MK-20</b>	Ø 14 to 18 mm	800 max.	600

Tightening by cam jaw.



## Parallel jaws "Come-along"

For bare cables.

(Material: forged steel).

Reference	Section	Working load (daN)	Weight (kg)
MO-331/06-A *	Ø 5.4 to 8,5 x 25 to 35 mm <sup>2</sup>	1 000 max.	800
MO-331/09-A *	Ø 5 to 12 x 50 to 70 mm <sup>2</sup>	1 700 max.	1 100
MO-331/12-A *	Ø 8 to 18 x 95 to 120 mm <sup>2</sup>	3 000 max.	1 800
MO-331/04-B	Ø 1 to 5 x 1 to 16 mm <sup>2</sup>	500 max.	250
MO-331/08-B	Ø 3 to 9 x 6 to 35 mm <sup>2</sup>	1 000 max.	850
MO-331/10-B	Ø 4 to 12 x 16 to 70 mm <sup>2</sup>	1 700 max.	1 200
MO-331/16-B	Ø 6 to 18 x 50 to 150 mm <sup>2</sup>	3 000 max.	1 850
MO-331/26-B	Ø 10 to 28 x 90 to 400 mm <sup>2</sup>	3 500 max.	3 800

\* For aluminium cables ETACSR.

Automatic lock spring easily harling.



## Tensioning block

Cadmium plated-steel.

Reference	Wheel	Rope	Useful hook	Force (daN)	Weight (kg)
MO-343	40	10	19	300	1 600
MO-344	50	12	23	500	2 500

A pair of blocks by reference.

Hook with safety catch.

3 wheels.



## "TIRVIT" mechanical adjusters

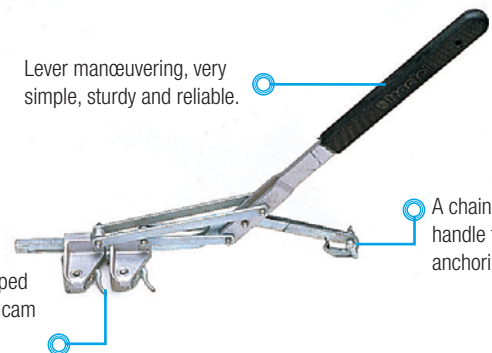
Ideal apparatus for tightening up small and medium section lines.

Reference	Force (daN)	Section	Total lenght lever	Weight (kg)
MK-40	400	Ø 2-8	65 mm	4 000
MK-60	600	Ø 7-15	70 mm	5 200
MK-100	800	Ø 14-18	90 mm	6 200

Lever manoeuvring, very simple, sturdy and reliable.

Directly clamped between two cam jaws.

A chain and handle for fixed anchoring.



## "TIRFOR" and "JOCKEY" winches

System possible to enter an unlimited cable length.

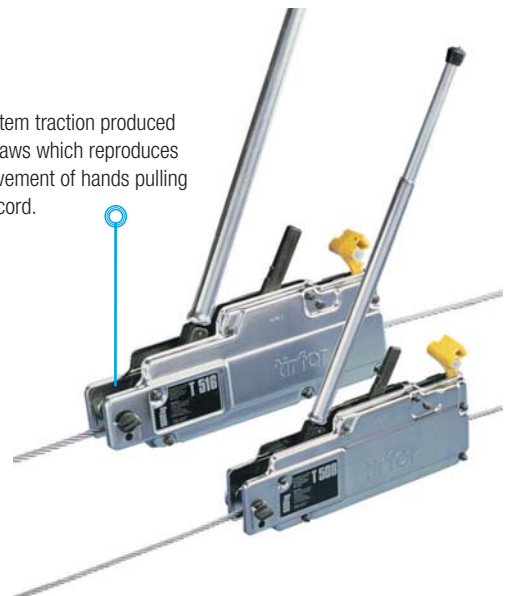
Reference	Type	Force <sup>(1)</sup> (daN)	Requirements	Weight without cable (kg)	Weight Cable (kg)
ML-05/10 **	Jockey J-5	500 max.	370 x 215 x 55	4 000	2 500
ML-08/20 *	T-508	800 max.	420 x 250 x 99	6 600	7 000
ML-16/20 *	T-516	1 600 max.	530 x 315 x 127	13 500	12 500
ML-32/20 *	T-32	3 200 max.	631 x 357 x 148	24 000	26 000

\* Equipment delivered with 20 m cable equipped with hook.

\*\* For type "Jockey" length 10 m + 2 slings 2 m.

<sup>(1)</sup> The first number indicates the maximum authorized lifting load.

System traction produced by jaws which reproduces movement of hands pulling on cord.








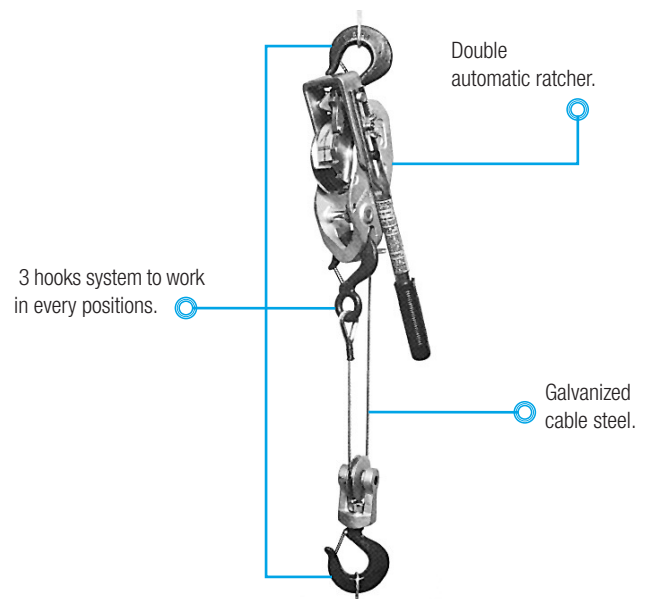
## Hoist ratchet and guying equipment

### Hoist ratchet

Hoist winch-type "Aviation type", very flexible, light and very strong.


Reference	Lifting height	Working load*	
MO-43200	1.550 m	1 000 daN	4 000
MO-43201	2.000 m	1 000 daN	4 000
MO-43202	4.600 m	1 000 daN	6 000
MO-43203	3.300 m	1 600 daN	6 200

\* On 2 cables.



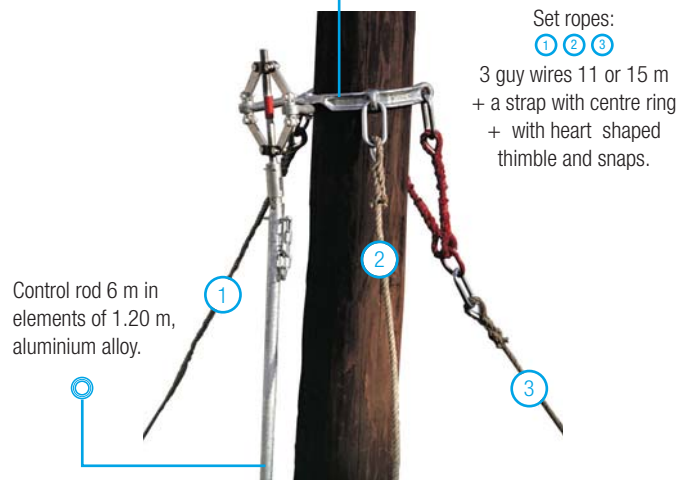
### Guying equipment

Used whenever pole stability is doubtful. Hinged jaw device installed, from the ground, at a 6 to 8 m height using connectable rods.

Reference	Shrouds	Anchoring rods	
MP-315	15 m	3 x 1 m	26 500
MP-311	11 m	3 x 1 m	22 000

Delivered in metal case 480 x 340 x 200 mm.


Forged hot galvanized steel jaws, test load: 1 000 daN.



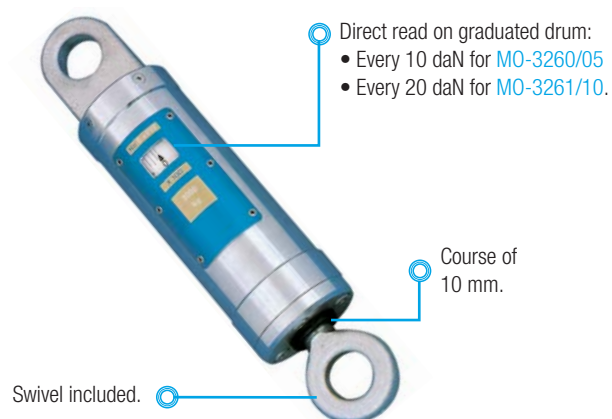
## Dynamometer for Insulated conductor

Specially designed for adjusting the mechanical voltage of **insulated overhead lines**.

Safety coefficient at the breaking point > 5

Reference	Field of use	Repeatability +/-	
<b>MO-3260/05</b>	0 - 500 daN	3 %	1 900
<b>MO-3261/10</b>	0 - 1000 daN	3 %	1 900

Comes complete with case, dimensions: 80 x 305 x 385 mm



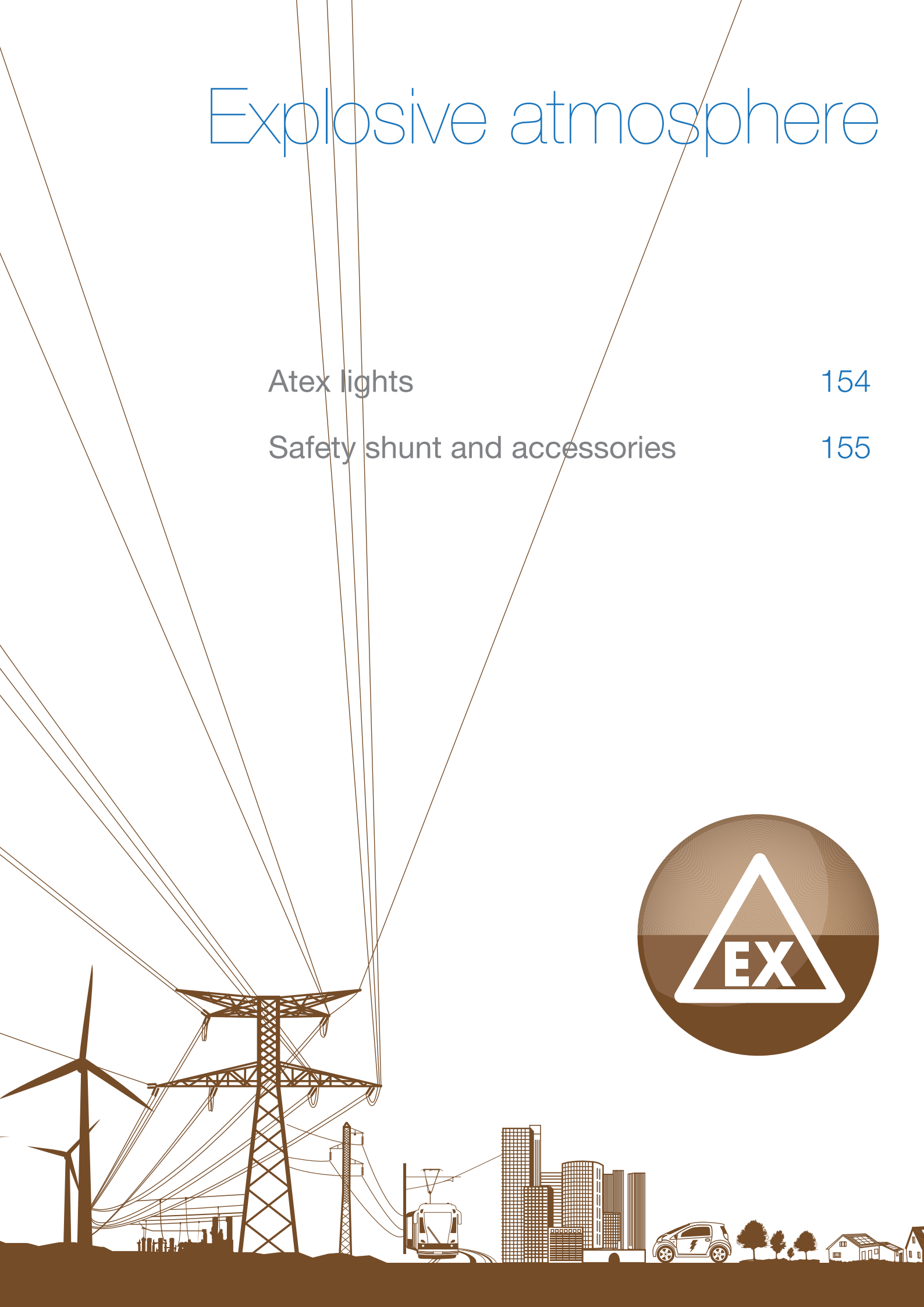
# Explosive atmosphere

Atex lights

154

Safety shunt and accessories

155



## Intrinsically safe ATEX LED's Headlamp

### Agreement **ATEX**

European certificate category 2 (zone 1)

N° **ITS09ATEX26185X**




 II 2 G Ex ia IIB T4.

Can be carried either on the head on any kind of helmet.

Autonomy: 150 hours.

Very light, ABS body.

Range: 10 to 15 meters.

Reference	 type LRO3 (AAA)	 mm	 g
<b>MS-126</b>	3 x 1.5 V	76 x 68 x 44	125

Delivered with batteries and 2 Straps.




## Torches for explosive atmosphere (ATEX)

### MS-129

Mini-pocket yellow torch, Zone 0.

For maintenance and control operations.

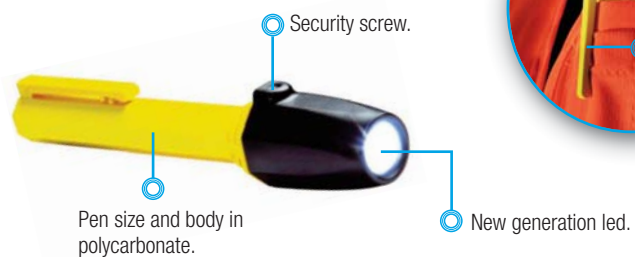
 II 1 G Ex ia IIC T4

Ga Ex ia D 20

IP 65.


Maxi temperature 90°C.

4 hours autonomy.



### MS-130

Yellow torch, Zone 0 with polycarbonate body.

 II 1 G Ga Ex ia IIC T4

II 1 D Da Ex ia D 20

IP 66.

Maxi temperature 83°C.


7.25 hours autonomy.






### MS-130/1

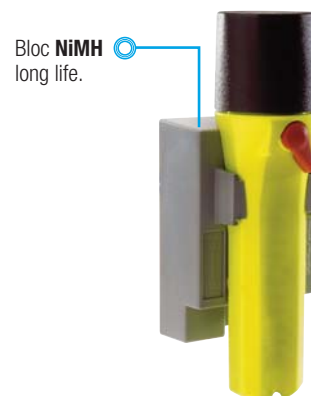
Yellow torch Zone 1 **rechargeable version** of MS-130.

Transformer operating on 220 V or 12 V.

 II 2 G Ex ib IIC T4.

32 hours autonomy.


Reference	 m	Lumens		 g
<b>MS-129</b>	0.139	21	2 AAA included	50
<b>MS-130</b>	0.178	72	4 AA not included	210
<b>MS-130/1</b>	0.178	40	4 AA NiMH included	220

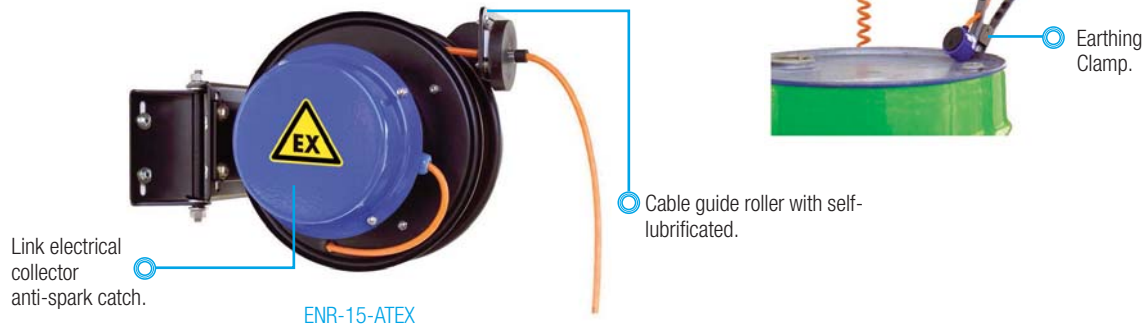




## Earthing coil

Earthing coil for explosive atmospheres **Zones 0, 1, 2**.  
Guarantees bonding loads.

Reference	Description	
ENR-15-ATEX	With 15 m cable	13 000



# Golden safety rules

SEPARATE THE WORK AREA FROM ALL POSSIBLE SOURCES OF POWER-SUPPLY by opening circuit-breakers, switches...

1



2

LOCK THE LINK IN THE OPEN POSITION with a safety lock system (safety padlock)

CHECK THE ABSENCE OF VOLTAGE at source and on site, on each conductor and apparatus involved.

3



4

APPLY APPROPRIATE SHORT-CIRCUIT AND EARTHING SYSTEMS in sufficient numbers on the conductors of your network where operation is taking place.

SHOWN, WARN OTHERS AND LIMIT THE WORK AREA even during the most simple temporary maintenance operation

5



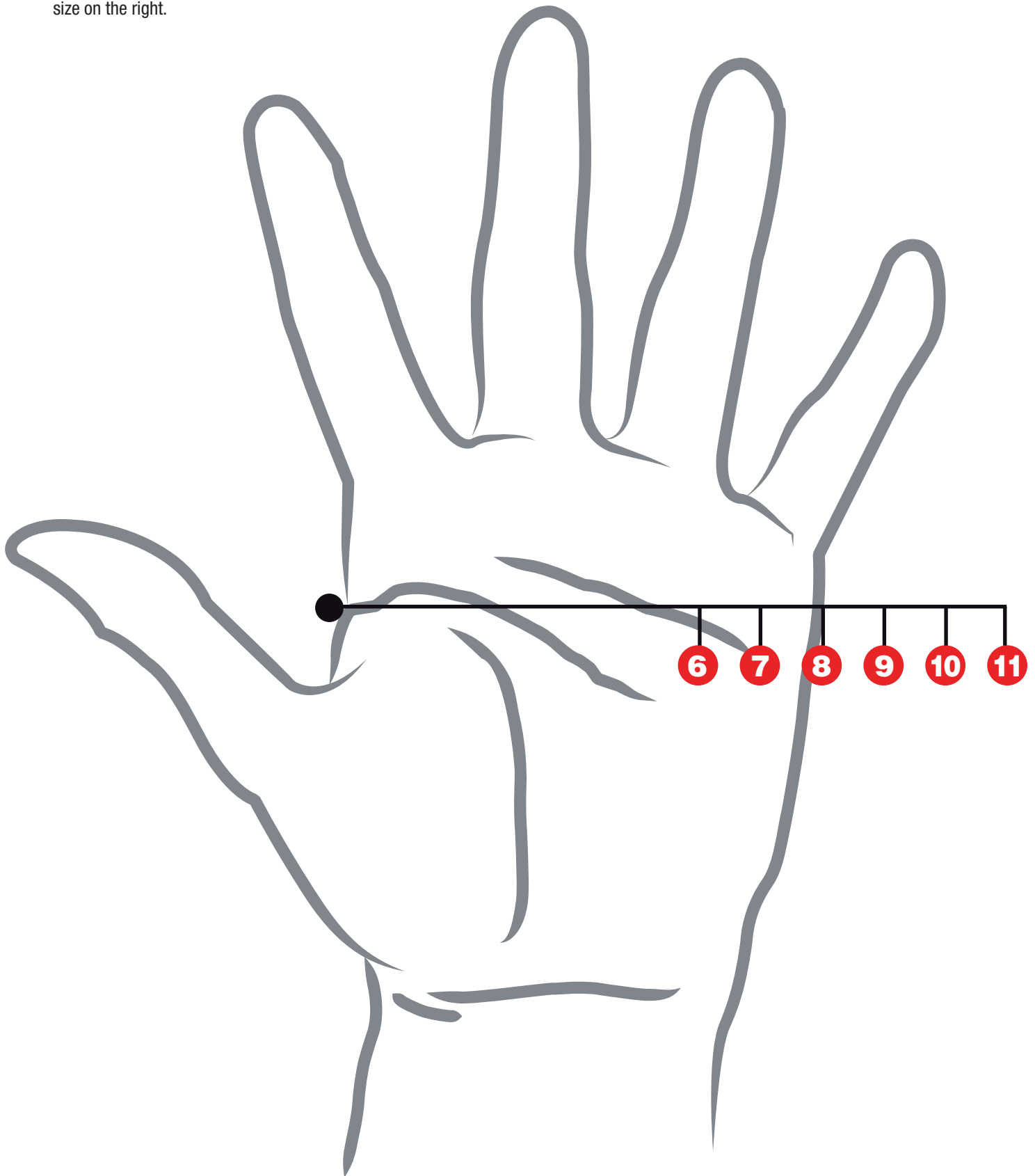
Network voltage: \_\_\_\_\_ kV  
 Nature of the conductive materials: Basis Al ☐ Basis Cu ☐ Max. short-circuiting current (1s): \_\_\_\_\_ kA

- Fitting on edge face ☐ Fitting on side face ☐

**Choose**  
your gloves size!

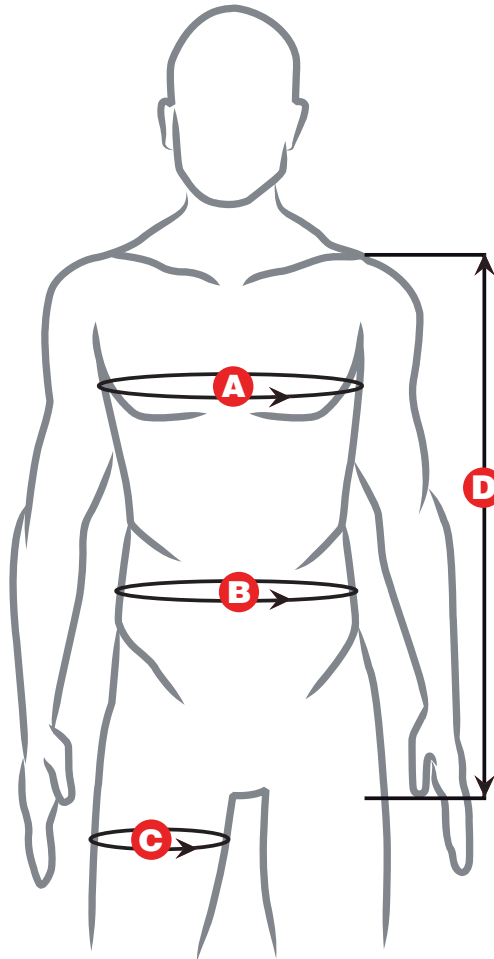
**Check**

Put your hand on the drawing and look your size on the right.



Harness size board (in mm)

Reference	Chest (A)	Size (B)	Thigh (C)	Height (D)
<b>S</b>	700 - 1 000	750 - 1 000	500 - 700	600 - 750
<b>M</b>	800 - 1 200	900 - 1 200	550 - 750	750 - 850
<b>XL</b>	1 000 - 1 500	1 000 - 1 350	550 - 900	700 - 950



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Our company is entitled to modify at any time the characteristics of its equipment.

In case of modification of these characteristics, our company would not be obliged to supply materials conform to those previously in force.

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