

ENGLISH

SAFETYCATALOGUE
2011

enia
energy networks & industrial applications

Αποστολοπούλου 59B
15231 Χαλάνδρι
Τηλ: 210 6754801, Fax: 210 6754804

info@enia.gr

www.enia.gr

sofamel



LEADING MANUFACTURER OF CONNECTION AND SAFETY ELECTRICAL MATERIAL



Sofamel S.A. is a Spanish company dedicated to the production of electrical material of connection, as well as safety and electric protection material.

Sofamel's main objective has been to reach a high degree of specialization with the aim of providing a global solution for our clients. The same backed up by strict quality standards and by important investments in machinery and design for the manufacturing of all those products that our factory produces. This has allowed us to offer one of the most extensive ranges of articles that exist on the market.



Our commitment with work of excellent quality allows our company to hold the UNE-EN-ISO 9001:2008 certificate, duly granted by AENOR the Spanish Association for Standardization and Certification. Likewise, and with the aim of being able to comply with our clients' highest demands for quality, we have a laboratory at our own installations with high technology instrumentation that is capable of executing electric testing of all our products.



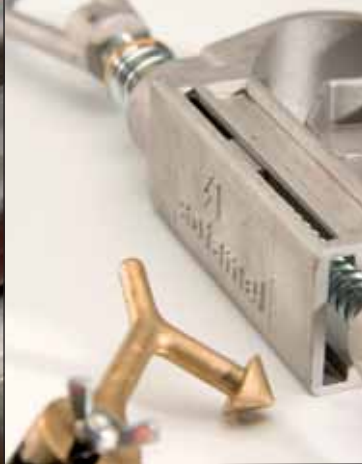


index

SAFETY 6-77

Personal protection	06
Insulation	19
Insulating poles	22
Accessories for poles and earthing equipments	35
Earthing and short-circuit equipments	38
Voltage detectors	52
Rescue and first aid	60
Lock devices	62
Signs and beacons	63
Ladders	72
Fiberglass ladders	75
Safety display	77

safety



Mod. SG

Dielectric gloves



The insulating gloves for live working complies with the specifications of the European Standard EN 60903 and International Standard IEC 60903 specifications.

Likewise, our production is subjected to a system for ensuring EC quality of production by means of monitoring to implement article 11b of the 89/686/EEC directive relating to Personal Protective Equipment which classifies insulating gloves for live working in category III (mortal risks).



SPECIFICATIONS

Code	Ref.	Class	Size	Length (mm)	Categories	Thickness (mm)
530110	SG-25 T9	00	9	360+ -15	AZC	0,5
530120	SG-25 T10		10		AZC	
530150	SG-50 T9	0	9	410+ -15	AZC	1,0
530160	SG-50 T10		10		AZC	
530190	SG-10 T9	1	9		AZC	1,5
530200	SG-10 T10		10		AZC	
530230	SG-20 T9	2	9	410+ -15	RC	2,3
530240	SG-20 T10		10		RC	
530270	SG-30 T9	3	9		RC	2,9
530280	SG-30 T10		10		RC	
530320	SG-40 T10	4	10	RC	3,6	

Meaning of letters in 'Categories': A: Acid / Z: Ozone / H: Oil / C: Low temperature / R: A+Z+H

TECHNICAL DATA

Code	Ref.	Class	Working voltage (V) max.	Proof test voltage (V)	Withstand voltage (V)
530110	SG-25 T9	00	500	2.500	2.500
530120	SG-25 T10				
530150	SG-50 T9	0	1.000	5.000	5.000
530160	SG-50 T10				
530190	SG-10 T9	1	7.500	10.000	10.000
530200	SG-10 T10				
530230	SG-20 T9	2	17.000	20.000	20.000
530240	SG-20 T10				
530270	SG-30 T9	3	26.500	30.000	30.000
530280	SG-30 T10				
530320	SG-40 T10	4	36.000	40.000	40.000

MECHANICAL AND THERMAL REQUIREMENTS

- Average tensile strength: ≥ 16 MPa
- Average elongation at break: $\leq 600\%$
- Puncture resistance: ≥ 18 N/mm
- Tension set : $\leq 15\%$
- Resistance to low temperature: conditioning of gloves for 1 hour at $-25 \pm 3^\circ\text{C}$.
- Flame retardancy test: Application of a flame for 10 seconds at a finger tip.

Mod. SGM

Insulating composite gloves



Our new insulating composite gloves allow to work with total safety without leather over-gloves.

According to EN 60903 and IEC 60903 Standards.

The innovation of the selected raw materials confers the gloves a good suppleness despite of the thickness required to protect against the mechanical hazards. Furthermore, the chemical formula of the outer layer gives an exceptional grip, even in wet conditions.

CE  IEC 60903
EN 60903

SPECIFICATIONS

Code	Ref.	Size	Categories	Length (mm)	Thickness (mm)
531150	SGM-50 T9	9	RC	41	2,1
531160	SGM-50 T10	10	RC	41	
531190	SGM-10 T9	9	RC	41	2,6
531200	SGM-10 T10	10	RC	41	
531230	SGM-20 T9	9	RC	41	3,1
531240	SGM-20 T10	10	RC	41	
531270	SGM-30 T9	9	RC	41	3,6
531280	SGM-30 T10	10	RC	41	
531310	SGM-40 T10	9	RC	41	3,8
531320	SGM-40 T11	10	RC	41	

Meaning of letters in 'Categories': R: Acid, Ozone and Oil resistance / C: Low temperature resistance

TECHNICAL DATA

Code	Ref.	Clase	Working voltage (V) max.	Proof test voltage (V)	Withstand voltage (V)
531150	SGM-50 T9	0	1.000	5.000	10.000
531160	SGM-50 T10				
531190	SGM-10 T9	1	7.500	10.000	20.000
531200	SGM-10 T10				
531230	SGM-20 T9	2	17.000	20.000	30.000
531240	SGM-20 T10				
531270	SGM-30 T9	3	26.500	30.000	40.000
531280	SGM-30 T10				
531310	SGM-40 T10	4	36.000	40.000	50.000
531320	SGM-40 T11				

MECHANICAL AND THERMAL REQUIREMENTS

- Average tensile strength: ≥ 16 MPa
- Average elongation at break: $\leq 600\%$
- Tension set: $\leq 15\%$

Complementary test and performance levels to be achieved are as follows:

- Resistance to cutting: $> 2,5$ (equivalence level 2 according to EN 388)
- Tearing resistance: > 25 N (equivalence level 2 according to EN 388)

- Puncture resistance: > 60 N (equivalence level 2 according to EN 388)

- Resistance to low temperature: conditioning of gloves for 1 hour at -25 ± 3 C.

- Flame retardancy test: Application of a flame for 10 seconds at a finger tip.

PERSONAL PROTECTION

Mod. SG

Leather overgloves



Leather overgloves must be worn over dielectric gloves to protect against mechanical risks and, when necessary, against electric arc risks. These leather cowhide gloves with webbed thumbs have a 10 cm cuff in cow split with a tightening velcro strap on the back of the hand.

The cowhide leather is treated with silicone to increase its waterproof characteristics.

In accordance with EN 388 standard.

CE EN 388

SPECIFICATIONS

Code	Ref.	Size	Mechanical resistances	Length (mm)	UTILIZATION CROSS-REFERENCE		
					Dielectric gloves Class 00, 0 y 1	Reference to be use	Dielectric gloves Class 2, 3 y 4
540112	SG-A	8	EN-388 Abrasion 2 Blade cut 1 Tear 2 Puncture 2	300	Size 8	SG-A	-
540113	SG-B	9		310	Size 9	SG-B	Size 8
540114	SG-C	10		320	Size 10	SG-C	Size 9
540115	SG-D	11		330	Size 11	SG-D	Size 10
540116	SG-E	12		340	-	SG-E	Size 11

Mod. SG-37

Fire-resistant gloves



Gloves made of NOMEX fibre with fire-resistant properties.

To be used under dielectric gloves with the aim of protecting against a possible electric arc.

In accordance with EN 407 standard.

Code

535100

CE EN 407

Mod. SG38/39

Mechanical protection gloves



SG-39

SG-38

CE EN 388-2122
EN 420

Working gloves to protect hands from mechanical risks.
Suitable for any kind of job, where hands must be protected.

Gloves made of grey or yellow skiver leather.
According to EN 388-2122 and EN 420.

Ref.	Code
SG-38	540100
SG-39	540110

Mod. SH

Mechanical protection gloves



CE EN 388-3131
EN 420

Gloves made of Nylon, palm covered of blue nitrile.
According to EN 388-3131 and EN 420.

Ref.	Code
SH-265 T8	540120
SH-265 T9	540130

Gloves made of Nylon, palm covered of grey nitrile.
According to EN 388-3131 and EN 420.

Ref.	Code
SH-370 T8	540140
SH-370 T9	540150

Gloves made of Cotton, palm covered of green nitrile.
According to EN 388-3131 and EN 420.

Ref.	Code
SH-350R T9	540160
SH-350R T10	540170

Gloves made of Kevlar, palm covered of green natural rubber.
According to EN 388-3131 and EN 420.

Ref.	Code
SH-GPKV T9	540180
SH-GPKV T10	540190

Gloves accesories

Mod. SG-36
Gloves bag

Waterproof nylon bag to carry dielectric gloves.
A fix strap on the back side makes easy to hold the bag on the belt.

Outside size (cm): 42,5 x 22

Code

545100


Mod. SG-35
Metallic gloves case

Metallic case with a methacrylate window. Ideal for carrying, storing and preserving dielectric gloves.
It can be fixed on the wall thanks to a ring placed on the back side.

Outside size (cm): 45,3 x 19,1 x 7,2

Code

545110


Mod. SGP
Plastic gloves case

Plastic case to store and carry dielectric gloves.

Outside size (cm): 47,5 x 17 x 5

Code

545111


Mod. SG-117
Pneumatic gauge

Pneumatic tester to check the absence of pores in dielectric gloves.
They are checked by inflating them and immersing them in water.

Code

545120

Harnesses and belts



CE EN 358

Mod. SO-06

Support belt with cord

Support belt in accordance with EN 358 standard with padded support. It has one ring on each end to connect a fall-arrest system. It is supplied with an adjustable cord and one snap hook.

Code

550100



CE EN 358

Mod. SO-46

Support belt with band

Support belt in accordance with EN 358 standard with padded support. It has one ring on each end to connect a fall-arrest system, as well as hooks that enable a tool-holder bag to be attached. It is supplied with an adjustable band and two fixed snap hooks.

Code

550101



CE EN 358

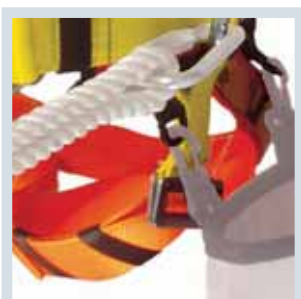
Mod. SO-50


Support belt with band

Support belt in accordance with EN 358 standard with padded support which acts as a seat. It has one 45° flat ring on each end to connect a fall-arrest system. It is supplied with an adjustable band and two fixed snap hooks.

Code

550102

Harnesses and belts



 EN 361
 EN 358

Mod. SO-71
Safety harness with belt

Fall prevention harness according to EN 361 standard. It has two link points: one on the back area and the other on the ascent and descent abdominal area. It has adjustable shoulder and leg straps, and a holding belt according to EN 358 standard with two side links on each end to connect a fall-arrest system. It is supplied with a 1m cord and two snap hooks on the back and an adjustable cord and two snap hooks on the belt.

Code

550110



CE UNE-EN 354

Mod. SO-07

Adjustable cord

Fall-arrest element adjustable from 1,10 m to 1,80 m long in accordance with UNE-EN 354 standard. Made with polyamide cord with a diameter of 14 mm. It is supplied with two snap hooks.

Code 550170



CE EN 358

Mod. SO-41

Adjustable band

Fall-arrest element adjustable from 1,20 m to 1,80 m long in accordance with EN 358 standard. Made with 47 mm wide polyester band. It is supplied with two snap hooks.

Code 550171



CE EN 358

Mod. SO-44

Adjustable band

Fall-arrest element adjustable from 1,20 m to 1,80 m long in accordance with EN 358 standard. Made with 47 mm wide polyester band. It is supplied with two snap hooks.

Code 550172



CE

Mod. SO-45

Anti-lumbago belt

The anti-lumbago and anti-vibratory belts have been studied and designed to protect the back-lumbar area against all kind of efforts.

It is made with red canvas support material and lined with 100% cotton. It is fastened with 100 cm long Velcro.

Code 550120



Individual protection equipment


CE EN 397

Mod. SP-181-B
Safety helmet

Safety helmet with chin strap made of polyethylene in accordance with EN 397 standard and CE labelling.

It is used to protect the head against mechanical risks. Harness adjustable to sizes 53 to 61 cm.

It is supplied in white. Please, enquire for other colours.

Code

565100



CE EN 397

Mod. SPE
Safety helmet

Safety helmet with wheel for a quick adjustment sizing. Made of polyethylene in accordance with EN 397 standard and CE labelling.

It is used to protect the head against mechanical risks. Harness adjustable to sizes from 53 to 61 cm.

It is supplied in white. Please, enquire for other colours.

Code

565102



CE EN 166

Mod. SP-182
Face visor

Face visor in accordance with EN 166 standard. It can be adjusted to all kind of safety helmets without needing to modify its characteristics.

It is composed of a nylon adapter and a reclining visor. It repels molten metal, impacts at their highest level, liquid splashes and the risk of electric arc. It filters I.R. solar radiation.

Code

570120



CE EN 166
EN 169
EN 170

Mod. SP-183

Protective glasses

Glasses in accordance with EN 166, EN 169 and 170 standards.
The front part is made of propionate and the arms are made of polycarbonate.

Protection from the side and the top.
Lenses made of IR/UV5 anti-abrasion green polycarbonate.

Code 570100



Mod. SP-183F

Glasses case

Code 570110



CE

Mod. SO-118

Watertight frontal torch

Torch that can be fixed to either the head or helmet. With adjustable light beam from a wide-to-narrow angle with great reach.

Code 560100



CE EN 352

Mod. MP-4

Auditive protector

Auditive protector in accordance with EN 352 standard.
It isolates the worker of the external noises.

Code 575100



CE EN 149

Mod. MP-1

Self-filtering mask

Self-filtering mask in accordance with EN 149 standard.
With nose brace for better adaptation.

Code 570130

Life line set

Mod. BLVC-30E
Small life line set

Life line set composed of hook rope drive, 16 m rope with 14 mm² section, snap hook, anti-fall dispositive and connectable pole of 2 parts and 3 m total length.

Code

550300

Mod. BLVC-40E
Medium life line set

Life line set composed of hook rope drive, 16 m rope with 14 mm² section, snap hook, anti-fall dispositive and connectable pole of 2 parts and 4 m total length.

Code

550310

Mod. BLVC-60E
Large life line set

Life line set composed of hook rope drive, 16 m rope with 14 mm² section, snap hook, anti-fall dispositive and connectable pole of 3 parts and 6 m total length.

Code

550320





Mod. GLV

Life-line hook

Device composed of a snap hook to fix the rope which will be connected to the worker when climbs to the workplace.

Code 630135



CE EN 358

Mod. SO-28

Lifeline anti-fall device

This device is a mobile fall arrester on flexible anchorage line. A rapid downward movement causes it to lock on the rope. In accordance with EN 358 standard.

Code 550140



CE EN 358

Mod. SO-75

Lifeline rope

Rope roll of 16 meters and 14 mm diameter with thimbles at the ends. In accordance with EN 358 standard.

Code 550150



Mod. SO-74

Self-blocking snap hook

Snap hook to connect the rope to the lifeline hook.

Code 550160

Work accessories

Mod. SO-26 Climbing irons

Set of climbing irons used by operators to climb wooden posts. They are circular and have eight nails welded on, and a special curved shape to enable them to climb up and down.

They are fixed on with 1,15 m straps made of 30 mm wide polyester and zinc steel buckles.

Code **555100**

Mod. SO-27 Small climbing devices


With only one spike welded on. They are made of carbon steel curved platen. They have four 65 mm long support straps and padded leather pads. Polyester straps with metallic buckles and eyelets.

Code **555110**

Mod. SO-31 Flat tool-holder bag

260x290 mm flat tool-holder bag. Made of canvas with leather reinforcement on the bottom. It has leather straps with buckles to attach it to a belt.

Code **600120**

Mod. SO-32 Circular tool-holder bag

200x280 mm circular tool-holder bag. Made of canvas with leather reinforcement on the bottom. It has a handle for carrying and lifting.

Code **600130**



SO-32

SO-31

Insulating devices
Mod. ST
Insulating stool


CE  UNE 204001



Made of high impact copolymer polypropylene in accordance with UNE 204001 standard.

The platform surface is rough non-slip. Rubber tips are placed under the legs to give it greater adherence to the floor and protection from wear.

Platform: 525x525 mm

Surface: 575x575 mm

RANGE / DIMENSIONS OF PRODUCT

Code	Ref.	Height (mm)	Working voltage
580100	ST-36	200	36 kV
580110	ST-45	305	45 kV
580115	ST-66	305	66 kV

Mod. SP
Insulating mat


CE  IEC 60243-1

Made of high quality rubber which has a non-slip surface. Element used to achieve the necessary insulation with respect to earth for people who carry out tasks or manoeuvres in installations. In accordance with IEC 60243-1 standard.

RANGE / DIMENSIONS OF PRODUCT

Code	Ref.	Dimensions (m)	Thickness (mm)	Breaking voltage
585120	SP-0606/3	0,6 x 0,6	3	30 kV
585110	SP-0610/3	0,6 x 1	3	30 kV
585131	SP-0650/3	0,6 x 5	3	30 kV
585132	SP-06100/3	0,6 x 10	3	30 kV
585100	SP-1010/3	1 x 1	3	30 kV
585130	SP-1050/3	1 x 5	3	30 kV
585133	SP-10100/3	1 x 10	3	30 kV
585160	SP-0606/4	0,6 x 0,6	4,5	50 kV
585150	SP-0610/4	0,6 x 1	4,5	50 kV
585171	SP-0650/4	0,6 x 5	4,5	50 kV
585172	SP-06100/4	0,6 x 10	4,5	50 kV
585140	SP-1010/4	1 x 1	4,5	50 kV
585170	SP-1050/4	1 x 5	4,5	50 kV
585173	SP-10100/4	1 x 10	4,5	50 kV

Insulating devices and accessories
Mod. ST-79
Insulating slab


Made of high impact polyethylene. 500x500 mm modules that can be joined together enabling any surface to be covered. This material can be easily cut to be adapted to any space.

Code **580130**

Mod. SP-321
Profil


SP-50

SP-321

It is made of rubber and is used as provisional insulation for bare conductors in low voltage or with insufficient protection in small spaces.

Diameter 19 mm. Length 1000 mm.

Code **595101**

Mod. SP-50
Profil bag

Nylon bag with reinforcements to transport the insulating profil.

Code **600110**

Mod. SP-22
Cowl


SP-22

It is made of rubber and it is used for the provisional insulation of bare conductors as they pass through low voltage insulators. It is bell-shaped with grooves for the conductors to pass through.

Code **595100**

Mod. SP-52
Cowl bag


SP-52

Nylon bag with reinforcements to transport the insulating cowl or any other accessory.

Code **600100**



Mod. SZ-57 Wire cutter

Insulated wire cutter indicated for cutting cables up to Ø 25 mm. It has metallic blades and two handles made of polyester reinforced with fibreglass, which are 500 mm long and have a diameter of 32 mm. Insulating working voltage: 25 kV.

Code 715120



Mod. ME-60 Fuse-extracting lever

It is used to place and remove fuses in L.V. It has an insulating handle and a hand protector that acts as a glove to protect the operator from possible accidents.


Code 545130



Mod. SP-35 Vinyl cloth

In accordance with UNE 81-018-085 standard. Made of 0,3 mm thick vinyl. It is used to insulate an element in the low voltage facilities. Rolls of 50 m x 1,40 m.

Code 595102

 UNE 81-018-085



Mod. SP-39 Fixing peg

160 mm long wooden peg. It is used to fix the sheets of vinyl cloth on the conductors.

Code 595112

Manoeuvring poles


Poles with only one section, made of polyester and fibreglass tube Ø 32 mm. With humidity-proof seals on each end, hand protector, grip, tip, Universal head and manoeuvring hook.


Mod. BM-45

- Total length of 1,60 meters
- Working voltage: 45 kV
- For INDOOR and OUTDOOR use in dry environment

Code 605100

Mod. BM-66

- Total length of 2,10 meters
- Working voltage: 66 kV
- For INDOOR and OUTDOOR use in dry environment

Code 605110

Mod. BM-132

- Total length of 3,10 meters
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use in dry environment

Code 605120



Poles with only one section, made of polyester and fibreglass tube \varnothing 32 mm. With humidity-proof seals on each end, 3 deflecting hoods, hand protector, grip, tip, Universal head and manoeuvring hook.



Mod. BME-45

- Total length of 1,60 meters
- Working voltage: 45 kV
- No. of hoods: 3
- For INDOOR and OUTDOOR use

Code

605130

Mod. BME-66

- Total length of 2,10 meters
- Working voltage: 66 kV
- No. of hoods: 3
- For INDOOR and OUTDOOR use

Code

605140

Mod. BME-132

- Total length of 3,10 meters
- Working voltage: 132 kV
- No. of hoods: 3
- For INDOOR and OUTDOOR use

Code

605150

Rescue poles

Poles with only one section, made of polyester and fibreglass tube Ø 32 mm. With humidity-proof seals on each end, hand protector, grip, tip, M-10 metric head and rescue hook.



Mod. BS-45

- Total length of 1,75 meters
- Working voltage: 45 kV

Code

610100

Mod. BS-66

- Total length of 2,25 meters
- Working voltage: 66 kV

Code

610110



Telescopic poles



Poles with two telescopic sections, made of polyester and fibreglass tube Ø 40 and Ø 32 mm. With humidity-proof seals on each end, hand protector, grip, tip and head: M (Metric-10), U (Universal), B (Bayonet), P (Polyvalent).

Mod. BMTS-15/45

- Length closed: 0,85 meters
- Length extended: 1,5 meters
- Working voltage: 45 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
615300	BMTS-15/45M
615301	BMTS-15/45U
615302	BMTS-15/45B
615303	BMTS-15/45P

Mod. BMTS-20/66

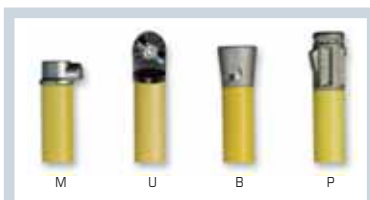
- Length closed: 1,15 meters
- Length extended: 2 meters
- Working voltage: 66 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
615310	BMTS-20/66M
615311	BMTS-20/66U
615312	BMTS-20/66B
615313	BMTS-20/66P

Mod. BMTS-30/132

- Length closed: 1,65 meters
- Length extended: 3 meters
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
615320	BMTS-30/132M
615321	BMTS-30/132U
615322	BMTS-30/132B
615323	BMTS-30/132P



Connectable poles


Poles with two connectable sections, made of polyester and fibreglass tube Ø 32 mm. With humidity-proof seals on each end, hand protector, grip, tip and head: M (Metric-10), U (Universal), B (Bayonet), P (Polyvalent).

Mod. BMAI-2

Extended length 2 meters

Composed of 2 sections of 1 m each

Working voltage: 66 kV

For INDOOR and OUTDOOR use in dry environment

Code	Ref.
616100	BMAI-2/66M
616101	BMAI-2/66U
616102	BMAI-2/66B
616103	BMAI-2/66P

Mod. BMAI-2,5

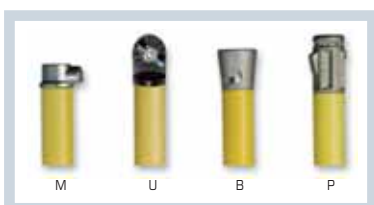
- Extended length 2,5 meters
- Composed of 1 section of 1 m + 1 section of 1,5 m
- Working voltage: 110 kV
- For INDOOR and OUTDOOR use in dry environment

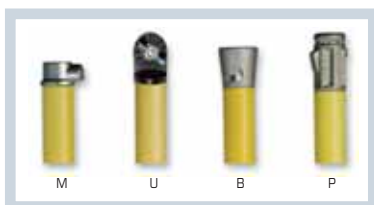
Code	Ref.
616110	BMAI-2.5/110M
616111	BMAI-2.5/110U
616112	BMAI-2.5/110B
616113	BMAI-2.5/110P

Mod. BMAI-3

- Extended length 3 meters
- Composed of 2 sections of 1,5 m each
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
616120	BMAI-3/132M
616121	BMAI-3/132U
616122	BMAI-3/132B
616123	BMAI-3/132P





Poles with two connectable sections, made of polyester and fibreglass tube Ø 32 mm. With humidity-proof seals on each end, hand protector, grip, tip, 3 deflecting hoods and head: M (Metric-10), U (Universal), B (Bayonet), P (Polyvalent).

Mod. BMAE-2

- Extended length 2 meters
- Composed of 2 sections of 1 m each
- Working voltage: 30 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616200	BMAE-2/30M
616201	BMAE-2/30U
616202	BMAE-2/30B
616203	BMAE-2/30P

Mod. BMAE-2,5

- Extended length 2,5 meters
- Composed of 1 section of 1 m + 1 section of 1,5 m
- Working voltage: 66 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616210	BMAE-2,5/66M
616211	BMAE-2,5/66U
616212	BMAE-2,5/66B
616213	BMAE-2,5/66P

Mod. BMAE-3

- Extended length 3 meters
- Composed of 2 sections of 1,5 m each
- Working voltage: 110 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616220	BMAE-3/110M
616221	BMAE-3/110U
616222	BMAE-3/110B
616223	BMAE-3/110P

Connectables poles


Poles with two and three connectable sections, made of polyester and fibreglass tube Ø 40 mm, with hand protector, grip, tip and head: M (Metric-10), U (Universal), B (Bayonet), P (Polyvalent).

Mod. BMAI-3V

- Extended length 3 meters
- Composed of 2 sections of 1,5 m each
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
616500	BMAI-3V/132M
616501	BMAI-3V/132U
616502	BMAI-3V/132B
616503	BMAI-3V/132P

Mod. BMAI-4V

- Extended length 4 meters
- Composed of 2 sections of 2 m each
- Working voltage: 220 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
616510	BMAI-4V/220M
616511	BMAI-4V/220U
616512	BMAI-4V/220B
616513	BMAI-4V/220P

Mod. BMAI-5V

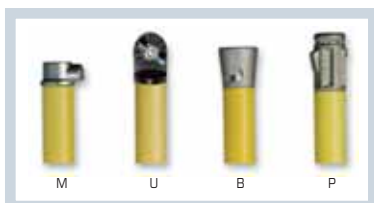
- Extended length 5 meters
- Composed of 2 sections of 2 m + 1 section of 1 m
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use in dry environment

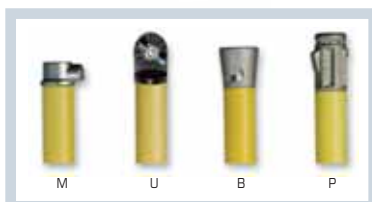
Code	Ref.
616520	BMAI-5V/380M
616521	BMAI-5V/380U
616522	BMAI-5V/380B
616523	BMAI-5V/380P

Mod. BMAI-6V

- Extended length 6 meters
- Composed of 3 sections of 2 m each
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use in dry environment

Code	Ref.
616530	BMAI-6V/380M
616531	BMAI-6V/380U
616532	BMAI-6V/380B
616533	BMAI-6V/380P





Poles with two and three connectable sections, made with polyester and fibreglass tube \varnothing 40 mm, with hand protector, grip, tip, 3 deflecting hoods and head: M (Metric-10), U (Universal), B (Bayonet), P (Polyvalent).

Mod. BMAE-3V

- Extended length 3 meters
- Composed of 2 sections of 1,5 m each
- Working voltage: 110 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616600	BMAE-3V/110M
616601	BMAE-3V/110U
616602	BMAE-3V/110B
616603	BMAE-3V/110P

Mod. BMAE-4V

- Extended length 4 meters
- Composed of 2 sections of 2 m each
- Working voltage: 220 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616610	BMAE-4V/220M
616611	BMAE-4V/220U
616612	BMAE-4V/220B
616613	BMAE-4V/220P

Mod. BMAE-5V

- Extended length 5 meters
- Composed of 2 sections of 2 m + 1 section of 1 m
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616620	BMAE-5V/380M
616621	BMAE-5V/380U
616622	BMAE-5V/380B
616623	BMAE-5V/380P

Mod. BMAE-6V

- Extended length 6 meters
- Composed of 3 sections of 2 m each
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use

Code	Ref.
616630	BMAE-6V/380M
616631	BMAE-6V/380U
616632	BMAE-6V/380B
616633	BMAE-6V/380P

Multiuse poles


Poles according to IEC 60855 and UNE 204003 standards with only one section, made of polyester and fibreglass tube Ø 32 mm and polyurethane foam-filled.

Head: U (Universal), B (Bayonet), H (Polyvalent).

Mod. BSC-M3

- Length 1,5 meters
- Working voltage: 30 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616700	BSC-M3U
616701	BSC-M3B
616702	BSC-M3H

Mod. BSC-M4

- Length 2 meters
- Working voltage: 45 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616703	BSC-M4U
616704	BSC-M4B
616705	BSC-M4H

Mod. BSC-M5

- Length 2,5 meters
- Working voltage: 66 kV
- For INDOOR and OUTDOOR use (Humid environment)

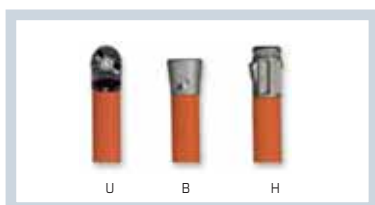
Code	Ref.
616706	BSC-M5U
616707	BSC-M5B
616708	BSC-M5H

Mod. BSC-M6

- Length 3 meters
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616709	BSC-M6U
616710	BSC-M6B
616711	BSC-M6H

IEC 60855
UNE 204003



Connectable multiuse poles



Poles according to IEC 60855 and UNE 204003 standards with two or three connectable sections, made of polyester and fibreglass tube \varnothing 32 mm and polyurethane foam-filled.
Head: U (Universal), B (Bayonet), H (Polyvalent).

Mod. BSC-M22

- Extended length 2 meters
- Composed of 2 sections of 1 m each
- Working voltage: 45 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616712	BSC-M22U
616713	BSC-M22B
616714	BSC-M22H

Mod. BSC-M32

- Extended length 2,5 meters
- Composed of 1 section of 1 m + 1 section of 1,5 m
- Working voltage: 66 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616715	BSC-M32U
616716	BSC-M32B
616717	BSC-M32H

Mod. BSC-M33

- Extended length 3 meters
- Composed of 2 sections of 1,5 m each
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use (Humid environment)

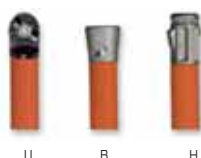
Code	Ref.
616718	BSC-M33U
616719	BSC-M33B
616720	BSC-M33H

Mod. BSC-M222

- Extended length 3 meters
- Composed of 3 sections of 1 m each
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616721	BSC-M222U
616722	BSC-M222B
616723	BSC-M222H

IEC 60855
UNE 204003



U

B

H

Connectable multiuse poles

Poles according to IEC 60855 and UNE 204003 standards with two or three connectable sections, made of polyester and fibreglass tube Ø 39 mm and polyurethane foam-filled. Head: U (Universal), B (Bayonet).



IEC 60855
UNE 204003



U

B

Mod. BSC-A43

- Extended length 3,5 meters
- Composed of 1 section of 2 m and 1 section of 1,5 m
- Working voltage: 132 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616724	BSC-A43U
616725	BSC-A43B

Mod. BSC-A44

- Extended length 4 meters
- Composed of 2 sections of 2 m each
- Working voltage: 220 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616726	BSC-A44U
616727	BSC-A44B

Mod. BSC-A54

- Extended length 4,5 meters
- Composed of 1 section of 2 m + 1 section of 2,5 m
- Working voltage: 220 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616728	BSC-A54U
616729	BSC-A54B

Mod. BSC-A55

- Extended length 5 meters
- Composed of 2 sections of 2,5 m each
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616730	BSC-A55U
616731	BSC-A55B

Mod. BSC-A66

- Extended length 6 meters
- Composed of 2 sections of 3 m each
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616732	BSC-A66U
616733	BSC-A66B

Mod. BSC-A444

- Extended length 6 meters
- Composed of 3 sections of 2 m each
- Working voltage: 380 kV
- For INDOOR and OUTDOOR use (Humid environment)

Code	Ref.
616734	BSC-A444U
616735	BSC-A444B

Fuse disconnecting pole



Pole with only one section made of polyester tube reinforced with \varnothing 40 mm fibreglass, with hand protector and handle to manoeuvre the slide.

Mod. BEF

- For fuses with \varnothing from 30 to 90 mm.
- Working voltage 30 kV
- For INDOOR and OUTDOOR use in dry environment
- Length 1,56 meters

Code
625100

Ref.
BEF-30



Condenser discharging pole


Insulating condenser discharging pole with earthing system. It is also suitable for devices with static electricity.

Pole with only one section made of polyester tube reinforced with \varnothing 32 mm fibreglass, with hand protector, grip and tip.

Mod. BDC

- Working voltage 36 kV
- INDOOR and OUTDOOR use in dry environment
- Length 1,6 meters

Code

625110

Ref.

BDC

Bags for poles and earthing equipments

Mod. FP

Bag for pole

Nylon bags to store and transport poles.



RANGE / DIMENSIONS OF PRODUCT

Code	Ref.	Dimensions (mm) width x length
899000	FP-20/140	200 x 1400
899005	FP-20/210	200 x 2100
899010	FP-20/125	250 x 1250
899015	FP-25/175	250 x 1750
899020	FP-25/225	250 x 2250
899025	FP-25/275	250 x 2750
899030	FP-25/325	250 x 3250

Mod. FE

Bag for earthing equipment

Nylon bags to store and transport earthing equipments.



RANGE / DIMENSIONS OF PRODUCT

Code	Ref.	Dimensions (mm) width x length
899050	FE-20/120	200 x 1200
899055	FE-20/110	200 x 1100
899060	FE-40/30	400 x 300



Accessories for poles
Mod. SM-02R
Metric-10 manoeuvring hook


Manoeuvring hook with M-10 thread.

Code

630100

Mod. SM-02C
Hexagonal-12 manoeuvring hook


Manoeuvring hook with Hexagonal-12 connection.

Code

630110

Mod. SM-02K
Universal-K manoeuvring hook


Manoeuvring hook with Universal-K connection.

Code

630120

Mod. ADAP. B-UK
Bayonet to Universal-K adapter


Converter head from bayonet to Universal-K.

Code

630107

Mod. ADAP. B-M10
Bayonet to M-10 adapter


Converter head from bayonet to M-10.

Code

630108

Mod. ADAP. H12-M10
Hexagonal-12 to M-10 adapter


Converter head from Hexagonal-12 to M-10.

Code

630101

Mod. GS-49
Rescue hook


Rescue hook with M-10 thread.

Code

630130

Mod. G.A. PINZA TML
Operating hook


Operating hook for PATL-TML equipments.

Code

630116

Mod. ADAP. UK-B
Universal-K to Bayonet adapter


Converter head from Universal-K to bayonet.

Code

630162

Mod. ADAP. H12-UK
Hexagonal-12 to Universal-K adap.


Converter head from Hexagonal-12 to Universal-K.

Code

630109

Mod. ADAP. M10-UK
M-10 to Universal-K adapter


Converter head from M-10 to Universal-K.

Code

630106

Mod. ADAP. UK-M10
Universal-K to M-10 adapter


Converter head from Universal-K to M-10.

Code

630102

Mod. ECBT-MPUE
Low voltage electric panels


Phase earthing and short-circuit equipment for low voltage electric panels. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The MPU clamps can be fixed on bare cylindrical conductors, fixed points or flat bars. Each one has its own fixed handle.

Composed of:

- 4 MPU aluminium alloy clamps, closing by screw, with insulated grip.
- 3 copper cables with PVC insulation of 35 mm² section and 0,6 m long.
- 1 copper cables with PVC insulation of 25 mm² section and 2 m long.
- 1 TT-83 self-milling earthing lathe.
- 1 metallic case to store and transport the equipment.

Code

659000

Ref.

ECBT-MPUE/35



Phase earthing and short-circuit equipment for low voltage electric panels. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The MPUBT clamp for low voltage is perfect to be fixed on flat bars.

Composed of:

- 4 MPUBT/H aluminium alloy clamps, closing by screw.
- 1 insulated grip with polyvalent head.
- 3 copper cables with PVC insulation of 35 mm² section and 0,6 m long.
- 1 copper cables with PVC insulation of 25 mm² section and 2 m long.
- 1 TT-83 self-milling earthing lathe.
- 1 metallic case to store and transport the equipment.

Code	Ref.
659001	ECBT-MPUBTH/35



Phase earthing and short-circuit equipment for low voltage electric panels. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. It has an insulated lever suitable for extraction of blade fuses with M-10 connection.

Composed of:

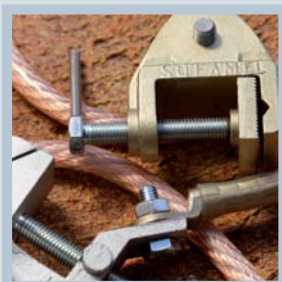
- 3 cross section blades and earthing device.
- 3 copper plastic-sheathed cables of 25 mm² section for phase short-circuit, joined with one trifurcation with a derivation cable of 25 mm² section.
- 1 self-milling earthing lathe with insulated handled.
- 1 manoeuvring pole 35 cm.
- 1 metallic case to store and transport the equipment.

Code	Ref.
659100	ECBT-PAT/CC



Mod. PATF-MPU

Unipolar earthing equipment



Unipolar earthing equipment. It has a MPU/B or MPU/H clamp which allows the earthing connection of the lines for repair operations.

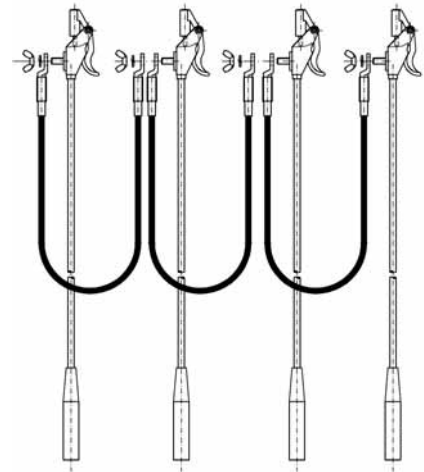
Composed of:

- 1 MPU aluminium alloy clamp closing by screw and bayonet fixing (MPU/B) or hexagonal -12 (MPU/H). For cylindrical conductors with diameter between 4 mm and 30 mm.
- 1 copper cable with PVC insulation of 50 mm² section and 7 m long.
- 1 TT-83 self-milling earth lathe.
- 1 carrying bag to store and transport the equipment.

Code	Ref.
666100	PATF-MPUB/50
666110	PATF-MPUH/50

Mod. ELBT-CC

Low voltage overhead lines



Phase earthing and short-circuit equipment for low voltage overhead lines. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The ELBT clamp is placed by pressing a bare conductor by spring. The clamp mechanism grants a permanent and persistent contact.

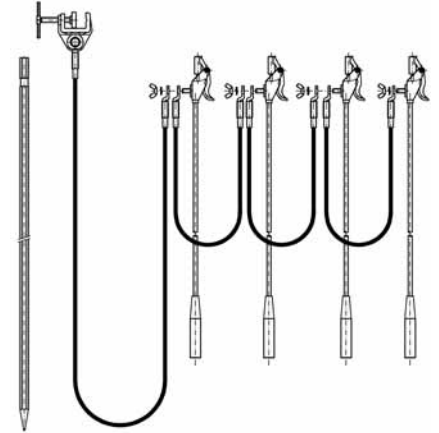
Composed of:

- 4 ELBT spring clips with 70 cm poles. For cylindrical conductors with diameter between 3 mm and 18 mm.
- 3 copper cables with PVC insulation of 16 mm² section and 0,6 m long.
- 1 carrying bag to store and transport the equipment.

Code	Ref.
658110	ELBT-CC

Mod. ELBT-PAT/CC

Low voltage overhead lines



Phase earthing and short-circuit equipment for low voltage overhead lines. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The ELBT clamp is placed by pressing a bare conductor by spring. The clamps mechanism grants a permanent and persistent contact.

Composed of:

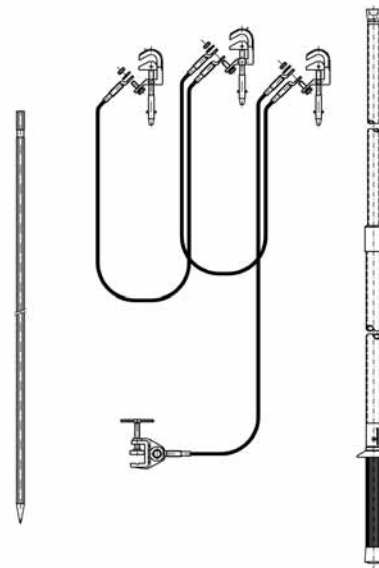
- 4 ELBT spring clips with 70 cm poles. For cylindrical conductors with diameter between 3 mm and 18 mm.
- 3 copper cables with PVC insulation of 16 mm² section and 0,6 m long.
- 1 copper cable with PVC insulation of 16 mm² section and of 15 m long.
- 1 TT-83 self-milling earthing lathe.
- 1 earthing rod.
- 1 carrying bag to store and transport the equipment.

Code
658120

Ref.
ELBT-PAT/CC

Mod. PATL-MPUB

Medium voltage overhead lines - Screw clamps



IEC 61230

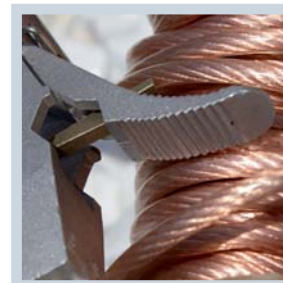
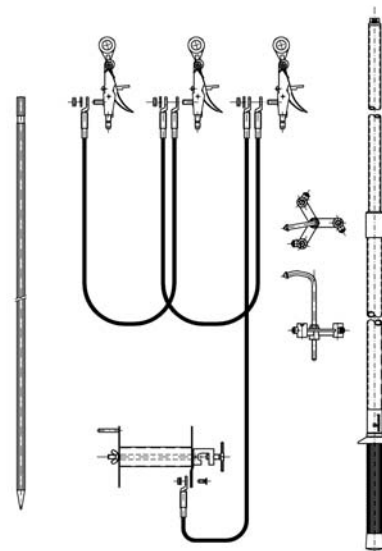


Phase earthing and short-circuit equipment for medium voltage overhead lines. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The MPU clamp is fixed on bare conductors by screw-tightening. This equipment has got a MPUP clamp (carrier) which facilitates to put up the three clamps at the same time, reducing installation time considerably. In accordance with IEC 61230 standard.

Composed of:

- 2 MPU/B aluminium alloy clamps closing by screw. For cylindrical conductors with diameter between 4 mm and 30 mm
- 1 MPUP/B aluminium alloy clamp (carrier) closing by screw. For cylindrical conductors with diameter between 4 mm and 30 mm
- 2 copper cables with PVC insulation of (25/35/50) mm² section and 2,5 m long.
- 1 copper cables with PVC insulation of (16/25) mm² section and 15 m long.
- 1 TT-83 self-milling earthing lathe.
- 1 earthing rod.
- 1 telescopic pole (1,10 m holded and 2 m unholded) with button lock.
- 1 metallic case to store and transport the equipment.
- 1 carrying bag to store and transport the pole and the earthing rod.

Code	Ref.	Short circuit current Max. ICC
660290	PATL-MPUB/1616	3,8 KA/1s
660300	PATL-MPUB/2516	6,9 KA/1s
660310	PATL-MPUB/3525	9,0 KA/1s

Mod. PATL-MC
Medium voltage overhead lines - Automatic clamps


IEC 61230



Phase earthing and short-circuit equipment for medium voltage overhead lines. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations.

The MC clamp is fixed on bare conductors by pressure and removed by an operating hook. The three clamps can be put up at the same time thanks to the dispenser head, facilitating operator's work.

In accordance with IEC 61230 standard.

Composed of:

- 3 MC aluminium alloy clamps closing by automatic activation. For cylindrical conductors with diameter between 3 and 22 mm.
- 1 dispenser head with hook, with M-10 connection.
- 2 copper cables with PVC insulation of (16/25/35) mm² section and 2,5 m long.
- 1 copper cables with PVC insulation of (16/25) mm² section and 15 m long.
- 1 metallic spool for the earthing cable.
- 1 telescopic pole (1,10 m holded and 2 m unholded) with button lock.
- 1 earthing rod.
- 1 metallic case to store and transport the equipment.
- 1 carrying bag to store and transport the pole and the earthing rod.

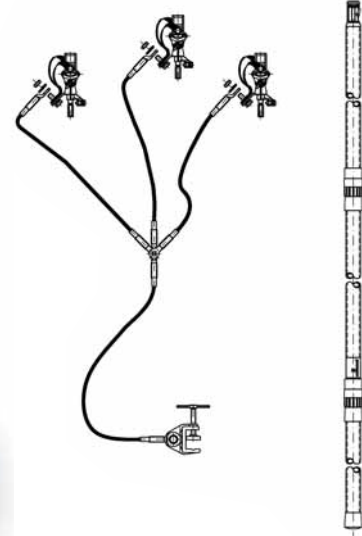
Code	Ref.	Short circuit current Max. ICC
660225	PATL-MC/1616	3,8 KA/1s
660230	PATL-MC/2516	6,9 KA/1s
660240	PATL-MC/3525	9,0 KA/1s

Mod. PATC-5014H

Medium voltage substations - Driver clamps



IEC 61230

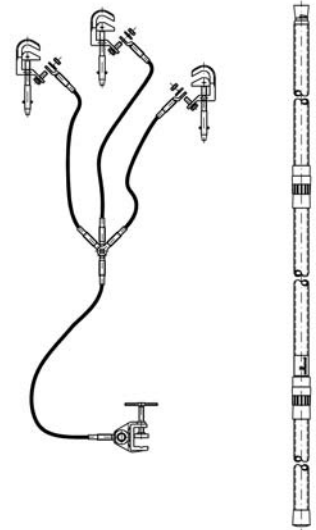


Phase earthing and short-circuit equipment for medium voltage substations. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The 5014 clamp is perfect for difficult access areas. The clamp can be adjusted depending on the inclination required thanks to its multi-directional head system. In accordance with IEC 61230 standard.

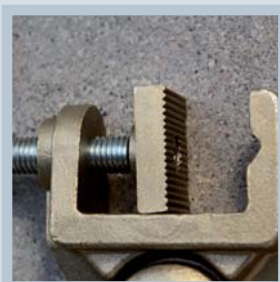
Composed of:

- 3 5014/H brass driver clamps closing by screw and hexagonal 12 mm fixing. For cylindrical conductors with diameter between 6 and 30 mm.
- 3 copper cables with PVC insulation of (25/35/50) mm² section and 0,75 m long.
- 1 copper cable with PVC insulation of (25/35/50) mm² section and 2 m long.
- 1 rubber-insulated trifurcating connector.
- 1 TT-83 self-milling earthing lathe.
- 1 1,5 m manoeuvring pole with three connectable sections.
- 1 metallic case to store and transport the equipment.

Code	Ref.	Short circuit current Max. ICC
665250	PATC-5014H/2525	6,9 KA/1s
665255	PATC-5014H/3535	9,0 KA/1s
665260	PATC-5014H/5050	12,0 KA/1s

Mod. PATC-MPUB
Medium voltage substations - Screw clamps


IEC 61230



Phase earthing and short-circuit equipment for medium voltage substations. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. The MPU clamp is fixed on bare cylindrical conductors, fixed points or flat bars by screw tightening. In accordance with IEC 61230 standard.

Composed of:

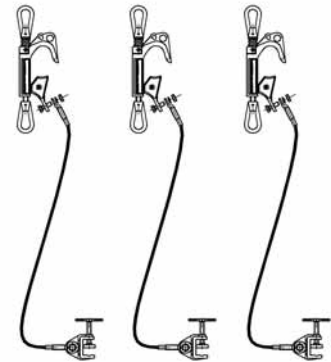
- 3 MPU aluminium alloy clamps closing by screw and bayonet fixing (MPU/B) or hexagonal-12 (MPU/H). For cylindrical conductors with diameter between 4 and 30 mm, 30 mm flat bars and 20-25 mm fixing points.
- 3 copper cables with PVC insulation of (25/35/50) mm² section and 0,75 m long.
- 1 copper cable with PVC insulation of (25/35/50) mm² section and 2 m long.
- 1 trifurcating connector.
- 1 TT-83 self-milling earthing lathe.
- 1 1,5 m manoeuvring pole with three connectable sections.
- 1 metallic case to store and transport the equipment.

Code	Ref.	Short circuit current Max. ICC
665220	PATC-MPUB/2525	6,9 KA/1s
665225	PATC-MPUB/3535	9,0 KA/1s
665230	PATC-MPUB/5050	12,0 KA/1s
665235	PATC-MPUH/2525	6,9 KA/1s
665240	PATC-MPUH/3535	9,0 KA/1s
665245	PATC-MPUH/5050	12,0 KA/1s

EARTHING AND SHORT - CIRCUIT EQUIPMENTS

Mod. PATL-TML

High voltage overhead lines



Cod. 630116

Operating hook.
Not included in the equipment.

IEC 61230



Phase earthing and short-circuit equipment for high voltage overhead lines. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. In accordance with IEC 61230 standard.

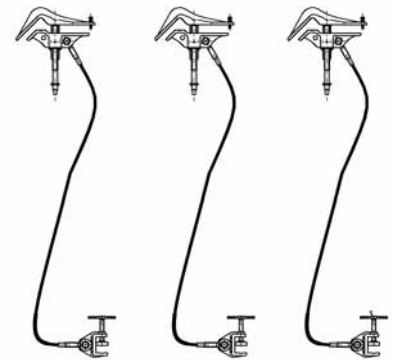
Composed of:

- 3 TML aluminium alloy clamps by screw. For cylindrical conductors with diameter between 5 mm and 70 mm.
- 3 copper cables with PVC insulation. Section and length depending on the reference.
- 3 TT-83 self-milling earth lathe.
- 3 carrying bags to store and transport the equipment.

Code	Ref.	Cable section (mm ²)	Length (m)	Short circuit current Max. ICC
670176	PATL-TML/05006	50	6	12 kA/1s
670177	PATL-TML/05007		7	
670178	PATL-TML/05008		8	
670179	PATL-TML/05009		9	
670180	PATL-TML/05010		10	
670186	PATL-TML/07006	70	6	19 kA/1s
670187	PATL-TML/07007		7	
670188	PATL-TML/07008		8	
670189	PATL-TML/07009		9	
670190	PATL-TML/07010		10	
670196	PATL-TML/09506	95	6	25 kA/1s
670197	PATL-TML/09507		7	
670198	PATL-TML/09508		8	
670199	PATL-TML/09509		9	
670200	PATL-TML/09510		10	
670206	PATL-TML/12006	120	6	30 kA/1s
670207	PATL-TML/12007		7	
670208	PATL-TML/12008		8	
670209	PATL-TML/12009		9	
670210	PATL-TML/12010		10	

Mod. PATC-TMC

High voltage substations



IEC 61230



Phase earthing and short-circuit equipment for high voltage substations. The main aim for its installation is the operator's protection against an accidental commissioning or possible return voltage during repair operations. In accordance with IEC 61230 standard.

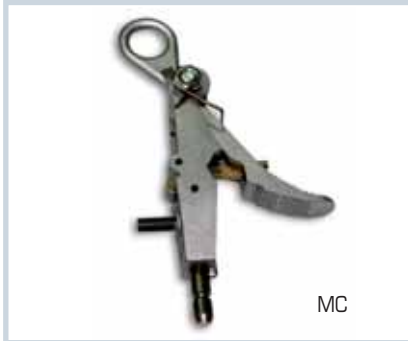
Composed of:

- 3 TMC aluminium alloy clamps by screw. For cylindrical conductors with diameter between 10 mm and 70 mm, flat bars max. 90 x 100 mm and bending bus-bars max. 50 x 120 mm.
- 3 copper cables with PVC insulation. Section and length depending on the reference.
- 3 TT-83 self-milling earth lathe.
- 3 carrying bags to store and transport the equipment.

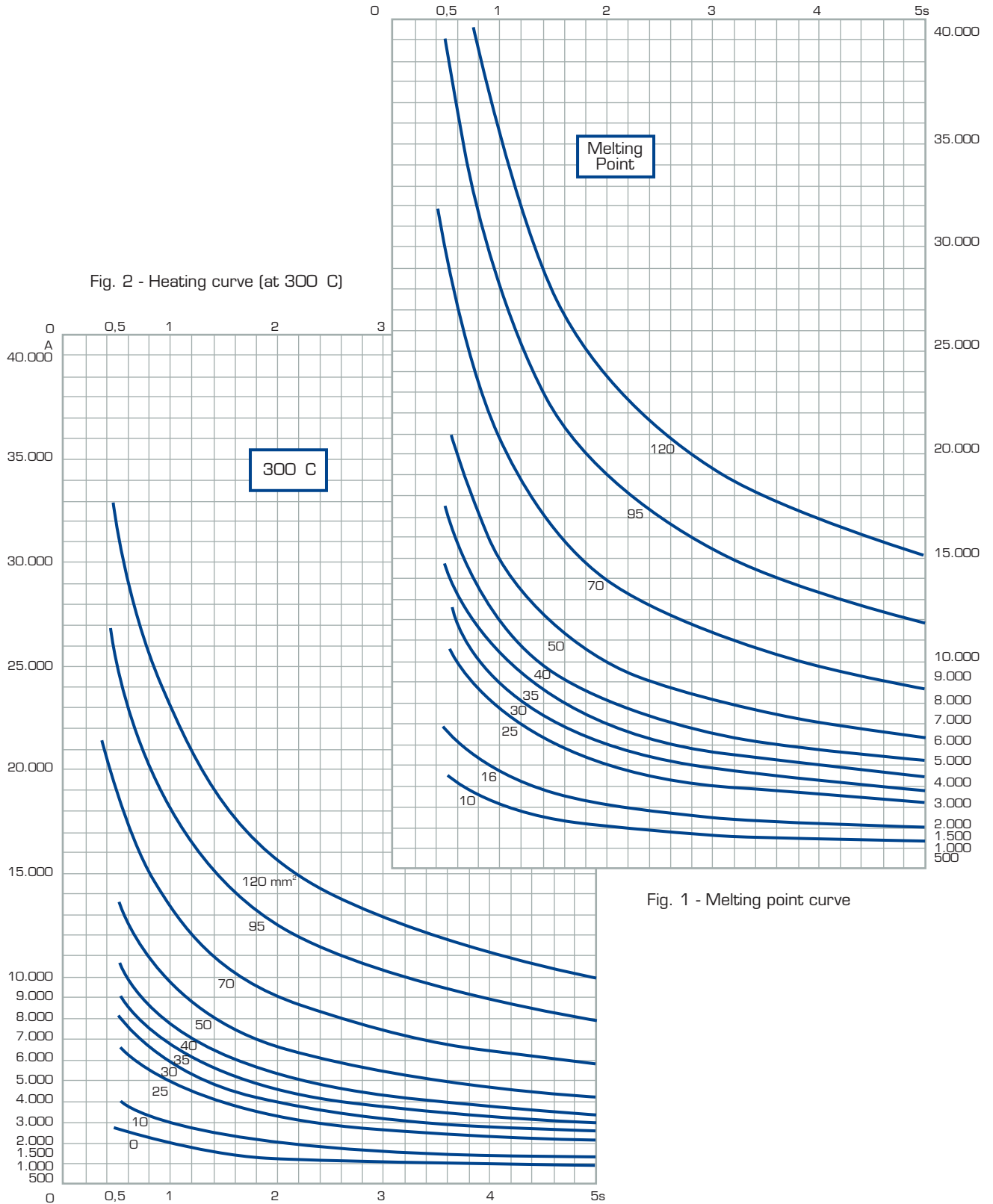
Code	Ref.	Cable section (mm ²)	Length (m)	Short circuit current Max. ICC
675176	PATC-TMC/05006	50	6	12 kA/1s
675177	PATC-TMC/05007		7	
675178	PATC-TMC/05008		8	
675179	PATC-TMC/05009		9	
675180	PATC-TMC/05010		10	
675186	PATC-TMC/07006	70	6	19 kA/1s
675187	PATC-TMC/07007		7	
675188	PATC-TMC/07008		8	
675189	PATC-TMC/07009		9	
675190	PATC-TMC/07010		10	
675196	PATC-TMC/09506	95	6	25 kA/1s
675197	PATC-TMC/09507		7	
675198	PATC-TMC/09508		8	
675199	PATC-TMC/09509		9	
675200	PATC-TMC/09510		10	
675206	PATC-TMC/12006	120	6	30 kA/1s
675207	PATC-TMC/12007		7	
675208	PATC-TMC/12008		8	
675209	PATC-TMC/12009		9	
675210	PATC-TMC/12010		10	

EARTHING AND SHORT - CIRCUIT EQUIPMENTS

Earthing equipments clamps & accessories



Selection of short circuiting cable - Heating curves



Example: Choosing cable for a short circuit rating of 15 kA/1 sec.
 Beginning with the curve in fig. 1; if a 50 mm² cable is used for more than 1 sec, cable burn-out will occur. If this is not permissible, a 70 mm² must be selected.

Fig. 2 shows if a 70 mm² cable conducts 15 kA for 1 sec, its temperature will rise to more than 300 C. Any cable which heats to 300 C will not be entirely destroyed but should never be reused.

Standard electronic voltage detector - optical

Medium voltage



Voltage presence is indicated by LED lighting. Self-checking device incorporated by inside piezoigniter.
It works with no battery.
Indoor use by insulating pole according rated voltage of the detector.
End fitting to the pole by Universal type.

Mod. VT-5/36-P Detector with pole

- Rated voltage: 5 to 36 kV
- Frequency: 50 Hz (Request for other frequencies)
- Insulating pole 1,25 m (included)
- Supplied with carrying bag for pole and rigid plastic box to store and transport the voltage detector

Code 640103

Mod. VT-5/66-P Detector with pole

- Rated voltage: 5 to 66 kV
- Frequency: 50 Hz (Request for other frequencies)
- Insulating pole 2 m (included)
- Supplied with carrying bag for pole and rigid plastic box to store and transport the voltage detector

Code 640105



Detector without pole - optical



Mod. VT-5/36-U Detector

- Rated voltage: 5 to 36 kV
- Frequency: 50 Hz (Request for other frequencies)
- Supplied in a rigid plastic box to store and transport the voltage detector

Code 640113

Mod. VT-5/66-U Detector

- Rated voltage: 5 to 66 kV
- Frequency: 50 Hz (Request for other frequencies)
- Supplied in a rigid plastic box to store and transport the voltage detector

Code 640115



Compact Medium Voltage Optical Detector



Voltage presence is indicated by three red flashing leds.
 Self-checking device incorporated by inside piezoigniter.
 It works with no battery.
 Indoor use by included compact insulating pole.
 Insulating pole as per RD 614/2001 directive.

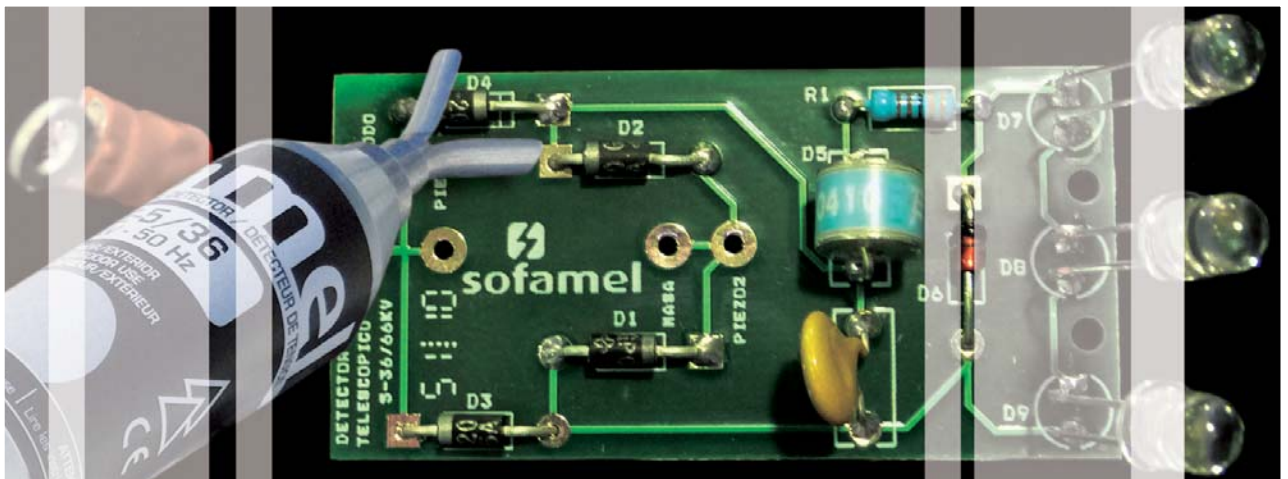
Mod. PEKE-5/36

Detector with pole

- Rated voltage: 5 to 36 kV
- Frequency: 50 Hz (Request for other frequencies)
- Telescopic insulating pole included.
- Total extended length with to voltage detector is 82 cm.
- Total length closed 34 cm.
- Supplied with carrying bag to transport the voltage detector and suitable to fix it on the belt.

Code

640104



VOLTAGE DETECTORS

Standard electronic voltage detector - optical & acoustic

Medium voltage



Electronic voltage detector by micro controller and direct contact detection. New advanced technology with duplicated acquisition that garants a perfect safe indication even in high perturbation electric field environments. Voltage presence is indicated by red led and high acoustic pressure buzzer. Voltage absence is indicated by green led. Low battery is indicated by orange led. Self-checking device for its complete circuit by pressing the test button. Stop working when low battery. Work temperature range: from -25 C to +55 C. Self-ignition when voltage presence. Auto-turn into sleep mode after two minutes of voltage absence. Less than 1µA consumption in this mode. Power supply 9V alkaline battery, type 6LR61. Indoor and outdoor use by appropriate insulating pole to the voltage detector. End fitting to the pole by Universal type. Supplied in a rigid plastic box with batteries included.

Mod. VTE-5/36-P Detector with pole

- Rated voltage: 5 to 36 kV
- Frequency: 50 Hz (Request for other frequencies)
- Insulating pole 1,25 m (included)
- Supplied with carrying bag for pole and rigid plastic box to store and transport the voltage detector

Code 641103

Mod. VTE-5/66-P Detector with pole

- Rated voltage: 5 to 66 kV
- Frequency: 50 Hz (Request for other frequencies)
- Insulating pole 2 m (included)
- Supplied with carrying bag for pole and rigid plastic box to store and transport the voltage detector

Code 641105



Detector without pole



Mod. VTE-5/36-U Detector

- Rated voltage: 5 to 36 kV
- Frequency: 50 Hz (Request for other frequencies)
- Supplied in a rigid plastic box to store and transport the voltage detector

Code 641113

Mod. VTE-5/66-U Detector

- Rated voltage: 5 to 66 kV
- Frequency: 50 Hz (Request for other frequencies)
- Supplied in a rigid plastic box to store and transport the voltage detector



Code 641115



IEC electronic voltage detector - optical & acoustic

Medium voltage




 IEC 61243-1:2003 +
Amend1:2009

UNE 61243-1:2003

Electronic voltage detector by micro controller and direct contact detection. New advanced technology with duplicated acquisition that garants a perfect safe indication even in high perturbation electric field environments.

Voltage presence is indicated by red led and high acoustic pressure buzzer. Voltage absence is indicated by green led.

Low battery is indicated by orange led.

Self-checking device for its complete circuit by pressing the test button.

Stop working when low battery.

Work temperature range: from -25°C to +55°C.

Self-ignition when voltage presence.

Auto-turn into sleep mode after two minutes of voltage absence. Less than 1µA consumption in this mode.

Power supply 9V alkaline battery, type 6LR61.

Indoor and outdoor use by appropriate insulating pole to the voltage detector. End fitting to the pole by Universal type. Supplied in a rigid plastic box with batteries included.

In accordance with IEC 61243-1:2003 + Amend 1:2009.
UNE 61243-1:2003

Mod. VT-3/10-U

Voltage detector

- Rated voltage: 3 to 10 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645220

Mod. VT-4/12-U

Voltage detector

- Rated voltage: 4 to 12 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645225

Mod. VT-10/30-U

Voltage detector

- Rated voltage: 10 to 30 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645230

Mod. VT-11/33-U

Voltage detector

- Rated voltage: 11 to 33 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645235

Mod. VT-15/45-U

Voltage detector

- Rated voltage: 15 to 45 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645240

Mod. VT-22/66-U

Voltage detector

- Rated voltage: 22 to 66 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645245

IEC electronic voltage detector - optical & acoustic

High voltage



Electronic voltage detector by micro controller.
New advanced acquisition by pulse of light that makes direct contact detection and ensure a safe indication even in high perturbation electric field environments.

Work temperature range: from -25°C to +55°C.
Self-checking device for its complete circuit.
Self-ignition when voltage presence.
Auto-turn into sleep mode after two minutes of voltage absence. Less than 1µA consumption in this mode.
Indication of voltage presence by means of red led and high acoustic pressure buzzer.
Indication of voltage absence by means of green led.
Power supply 9V alkaline battery, type 6LR61.
Indoor and outdoor use by appropriate insulating pole to the voltage detector.
End fitting to the pole by Universal type.
Supplied in a rigid plastic box with battery included.
In accordance with IEC 61243-1:2003 + Amend 1:2009 and UNE 61243-1.



Mod. VT-63/150-U Voltage detector

- Rated voltage: 63 to 150 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645162

Mod. VT-90/225-U Voltage detector

- Rated voltage: 90 to 225 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645172

Mod. VT-150/420-U Voltage detector

- Rated voltage: 150 to 420 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645182

Mod. VT-45/420U* Voltage detector

- Rated voltage: 45 to 420 kV
- Frequency: 50 Hz (Request for other frequencies)


Code 645184

Mod. VT-225/420U* Voltage detector

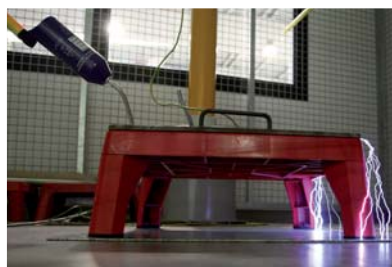
- Rated voltage: 225 to 420 kV
- Frequency: 50 Hz (Request for other frequencies)

Code 645186

* Out of IEC Standard.

CE  IEC 61243-1:2003 + Amend1:2009

UNE 61243-1:2003



Bipolar voltage detector



CE  IEC 61481

Bipolar voltage detector; with high impedance probes for MV networks, with optical signalling of voltage presence, indoor use.
It works with no battery.
External checking device with battery included.
Supplied in a carrying bag to store and transport the equipment.
In accordance with IEC 61481 standard.



Mod. VTBR-3/36

- Range of use voltage: From 3 to 36 kV AC
- Optical indication via LED
- Frequency: 50 Hz
- For indoor use

Code

650101



Electronic detector of absence of voltage for catenary line



Code	Ref.
640150	VT-1,5CC
640155	VT-3,5CC

Mod. VT-O/CC

Optical voltage detector

Voltage range:	VT-1,5 CC 500 V CC < Vt < 1.500 V CC VT-3,5 CC 1000 V CC < Vt < 3.500 V CC
Working temperature:	-25 C to +50 C
Indication of voltage presence:	Via 3 leds
Supply:	Works with no battery
Earthing cable:	Extra flexible cable with silicon sheath and 6 m long
Pole coupling system:	End fitting to the pole by Universal type
Self-checking:	Via integrated piezoelectric button
Self-supply:	VT-1,5CC for voltage presence ≥ 500 V CC VT-3,5CC for voltage presence ≥ 1000 V CC





Code	Ref.
645200	VT-OA/1,5CC
645205	VT-OA/3,5CC

Mod. VT-OA/CC

Optical and acoustic voltage detector

Voltage range:	VT-OA/1,5 CC 500 V CC < Vt < 1.500 V CC VT-OA/3,5 CC 1000 V CC < Vt < 3.500 V CC
Working temperature:	-25 C to +50 C
Indication of wait state:	Via high luminosity green led
Indication of voltage presence:	Optical/Acoustic indication by means of high luminosity red led and high acoustic pressure buzzer
Supply:	9V alkaline battery, type 6LR61
Earthing cable:	Extra flexible cable with silicon sheath and 6 m long
Pole coupling system:	End fitting to the pole by Universal type
Self-checking:	Self-checking of the electronic system of detection and supply Automatic disconnection with optical/acoustic indication of low battery.
Self-ignition:	VT-OA/1,5CC for voltage presence ≥ 500 V CC VT-OA/3,5CC for voltage presence ≥ 1000 V CC



Rescue panoply

In the event of an electrical accident, fast intervention is essential. The panoply contains all the rescue tools in a set place, making it accessible to all users in order to intervene if necessary.


Mod. SZ-51S

Composed of a 0,9 x 1,6 m board that contains the following elements:

- 1 BS-45 rescue pole
- 1 metallic case for gloves
- 1 pair of class 3 gloves
- 1 SZ-57 insulated wire cutter
- 1 pipette
- 1 45 kV insulated stool
- 1 jar of salts
- 1 first aid board
- 1 instructions board

Code **690100**


Mod. SZ-51M

Composed of a 0,9 x 1,6 m board that contains the following elements:

- 1 BS-45 rescue pole
- 1 5-36 kV voltage detector with pole
- 1 metallic case for gloves
- 1 pair of class 3 gloves
- 1 SZ-57 insulated wire cutter
- 1 pipette
- 1 45 kV insulated stool
- 1 jar of salts
- 1 pair of insulating shoes
- 1 first aid board
- 1 instructions board

Code **690110**

Mod. SZ-01

Artificial respiration pipette



Air conduct to carry out artificial respiration, avoiding direct contact between the injured person and the attending person.

Code 695120

Mod. SZ-02

Standard reviver



Portable resuscitator, designed to be used in emergency situations, it provides pulmonary ventilation for those people whose respiratory function has deteriorated. It has a transparent mask with a pneumatic edge and a connection for oxygen, it is supplied with a bag for transport.

Code 695100



Mod. SZ-56

Insulating shoes



A pair of overshoes made of insulating material to move around the accident area with insulation from the floor.

Code 715110

Mod. SZ-05

First aid box



Material included.
Box which contains the necessary items for first aid.

Code	Door	Measures
700100	Metal	37 x 30 x 13 cm

Mod. SZ-06

First aid box



Material included.
Box which contains the necessary items for first aid.

Code	Door	Measures
700110	Plastic	38 x 26 x 13 cm

RESCUE AND FIRST AID

Mod. SZ-07 Stretcher

180x55 cm canvas stretcher with metal bars that can be separated into three parts. Folded 70x10x10 cm. Supplied with transport bag.

Code 705100

CEE 93/42 Sanitary products

Mod. SZ Fire resistant blankets

Fire extinguishing blankets made of incombustible fibre. With immediate use bag device.


Mod. SZ-100

Code Measures
710100 90 x 100 cm

Mod. SZ-120

Code Measures
710110 120 x 120 cm

Mod. SZ-180

Code Measures
710120 120 x 180 cm

LOCK DEVICES

Mod. EN-6 Multiple locks

Multiple lock device which could place up to 6 padlocks.

Code	Ref.	Ø Ring
716100	EN-6/25	25 mm
716110	EN-6/38	38 mm

Mod. C-50 Condemnation lock

Condemnation padlock with brass body and watertightness joint.

Code	Ref.	Ø Ring
716150	C-50	50 mm

Aluminium signs

All signs are made according to AMYS R.A. 1.4-10 recommendation.

Electrical hazard

Triangular printed with lightning, black border and yellow background.

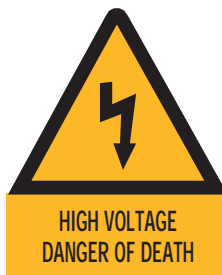


Code	Ref.	Dimensions
720100	AE-10S	105 mm
720110	AE-14S	148 mm
720120	AE-21S	210 mm
720130	AE-29S	297 mm

UNE 1-115-85

High voltage

Triangular printed with lightning, black border and yellow background.
Text: "HIGH VOLTAGE DANGER OF DEATH".

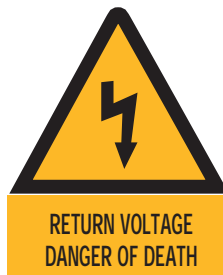


Code	Ref.	Dimensions
720140	CE-10S	105 mm
720150	CE-14S	148 mm
720160	CE-21S	210 mm
720170	CE-29S	297 mm

UNE 1-115-85

Return voltage

Triangular printed with lightning, black border and yellow background.
Text: "RETURN VOLTAGE DANGER OF DEATH".



Code	Ref.	Dimensions
720180	CR-10S	105 mm
720190	CR-14S	148 mm
720200	CR-21S	210 mm
720210	CR-29S	297 mm

UNE 1-115-85

Manoeuvring forbidden

Circular sign of manoeuvring forbidden.



Code	Ref.	Dimensions
720220	PM-10S	105 mm
720230	PM-21S	210 mm

Adhesive plastic signs

All signs are made according to AMYS R.A. 1.4-10 recommendation.

Electrical hazard



Triangular printed with lightning, black border and yellow background.

Code	Ref.	Dimensions
725100	AE05ADH	52 mm
725110	AE10ADH	105 mm

UNE 1-115-85

Electrical hazard 230V

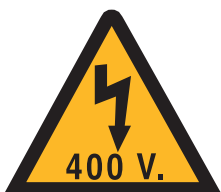


Triangular printed with lightning and 230V, black border and yellow background.

Code	Ref.	Dimensions
725120	VT230V55	52 mm
725130	VT230V10	105 mm

UNE 1-115-85

Electrical hazard 400V



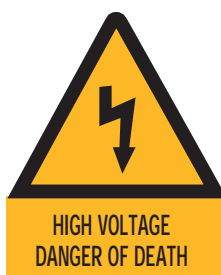
Triangular printed with lightning and 400V, black border and yellow background.

Code	Ref.	Dimensions
725140	VT400V55	52 mm
725150	VT400V10	105 mm

UNE 1-115-85

Polycarbonate signs

High voltage



Triangular printed with lightning, black border and yellow background.
Text: "HIGH VOLTAGE DANGER OF DEATH".

Code	Ref.	Dimensions
735100	CE-14PCI	52 mm
735110	CE-21PCI	105 mm

UNE 1-115-85

PVC boards



All signs are made according to AMYS R.A. 1.4-10 recommendation.

First aid

Code	Ref.	Dimensions
730100	PA-42P	420 x 297 mm
730110	PA-29P	297 x 210 mm

Prerequisite

Code	Ref.	Dimensions
730120	RTE-42P	420 x 297 mm
730130	RTE-29P	297 x 210 mm



Five gold rules

Code	Ref.	Dimensions
730140	CRO-42P	420 x 297 mm



Sign tape

To signal underground cables. PVC yellow colour. 150 mm width. 500 m roll.

Code	Ref.	Dimensions
740100	CCS-01AM	150 mm x 500 m



Extending barrier

Mod. VS-80

Iron extending barrier, with 3,5 m reflective band.

Code

755100

Work area delimiting tape


All signs are made according to AMYS R.A. 1.4-10 recommendation.

Mod. ST-62A

25 m reel for work area delimiting tape.
Please enquire for other dimensions.

Code

740180

Beacon tape

Mod. ST-63

Red and White Polyethylene beacon tape. 250 m rolls.
8 cm width.

Code

740160


Mod. ST-64

Red and Yellow Polyethylene beacon tape. 250 m rolls.
8 cm width.

Code

740170

Sign chains

Polyethylene



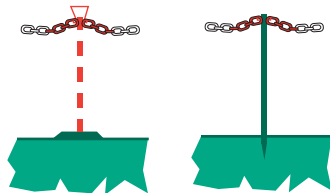
Red and White high resistant sign chain. 25 m roll.



Code	Ref.	Dimensions
745110	SP-52A	29 x 52 x 7,5 mm
745100	SP-35A	20 x 35 x 5 mm

Chain support

Mod. SP-01A

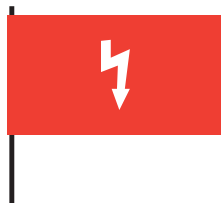


Code	Model
745140	With base

Mod. SP-02B

Code	Model
745150	With pick

Sign flags



Mod. ST-70

Red banner with the lightning.

Code	Dimensions
750100	60 x 35 cm

SIGNS AND BEACONS

Banner



Mod. ST-71

Red banner with the lightning.

Code
750110

Dimensions
60 x 35 cm

Hanging signs

Mod. ST-72



WORKING AREA
NO TRESPASSING

Code

750120

Mod. ST-73



PROTECTED AREA LIMIT
NO TRESPASSING

Code

750130

Mod. ST-74



NO ENTRY

Code

750140

Mod. ST-75

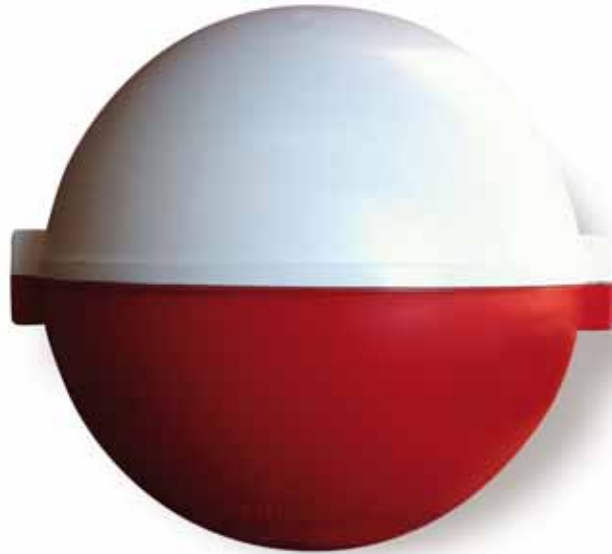


LIVE VOLTAGE INSTALLATION
DANGER OF DEATH

Code

750150

Beacons for cables

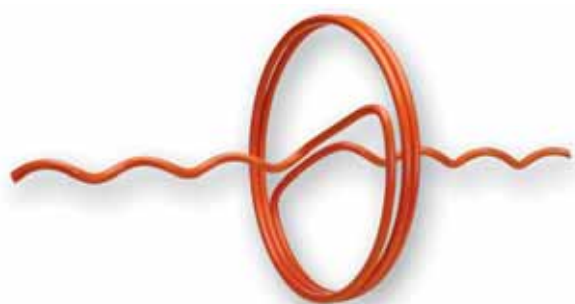


Mod. SAE-400

Beacon made of reinforced polyamide.
They are designed in such a way that they can be assembled and disassembled quickly.
To be fixed on cables from 9 to 30 mm Ø.
The cable can have voltage going through it.
Resistance UV Rays.

Code	Ø	Weight
590100	400 mm	2,5 Kg



Birds anticollision device
Mod. SPD


Double fixing spiral of PVC orange colours, to signalize the overhead lines in zones of birds migration ways. Resistance UV rays.



Code	Ref.
591120	SPD-7,00/9,50
591125	SPD-9,51/13,40
591130	SPD-13,41/17,50
591135	SPD-17,51/21,80

Mod. SPS


Simple fixing spiral of PVC orange colour, to signalize the overhead lines in zones of birds migration ways. Resistance UV rays.

Code	Ref.
591100	SPS-6,35/8,88
591105	SPS-8,89/11,42
591110	SPS-11,43/15,23



Cable protection boards



The cable protection board is installed underground, over the cable network. They are installed to avoid any possible cable damage during future drilling works in the area. Supplied in connectable units of 1 m long. Personalized printing (under request).

Code

760180

Other models on request.



Fiberglass ladders
Mod. COMPACT
Stepladder


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
505100	COMPACT 1,39/0,68 m	0,68	-	3	5,9
505110	COMPACT 1,64/0,91 m	0,91	-	4	6,9
505120	COMPACT 1,89/1,14 m	1,14	-	5	8,0
505130	COMPACT 2,14/1,37 m	1,37	-	6	9,4
505140	COMPACT 2,39/1,60 m	1,60	-	7	11,0


Mod. DF
Double rungs stepladder


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
510100	DF 1,10 m	1,10	-	4	6,2
510110	DF 1,60 m	1,60	-	6	9,0
510120	DF 2,10 m	2,10	-	8	11,8
510130	DF 2,60 m	2,60	-	10	14,6
510140	DF 3,10 m	3,10	-	12	17,4
510150	DF 3,60 m	3,60	-	14	20,2



Mod. E

Single ladder with only one section



All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
515100	E 2,41 m	2,41	-	8	9,9
515110	E 2,97 m	2,97	-	10	12,2
515120	E 3,53 m	3,53	-	12	14,5
515130	E 4,09 m	4,09	-	14	16,8
515140	E 4,93 m	4,93	-	17	21,6



Mod. GM

Two-section manual extension ladder



All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
520100	GM 2,41 /4,09 m	2,41	4,09	2x8	13,9
520110	GM 2,97 /5,21 m	2,97	5,21	2x10	17,0
520120	GM 3,53 /6,05 m	3,53	6,05	2x12	20,0
520130	GM 4,09 /6,89 m	4,09	6,89	2x14	23,0



Fiberglass ladders
Mod. GR
Two-section extension ladder using a cord


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
525100	GR 3,53 / 6,05 m	3,53	6,05	2x12	22,9
525110	GR 4,10 / 7,18 m	4,10	7,18	2x14	31,4
525120	GR 4,66 / 8,30 m	4,66	8,30	2x16	35,4
525130	GR 5,22 / 9,14 m	5,22	9,14	2x18	39,3
525140	GR 5,78 / 10,26 m	5,78	10,26	2x20	43,0


Mod. U
Multi-use ladder


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
526100	U 2,41 / 4,09 m	2,41	4,09	2x8	14,9
526110	U 2,70 / 4,66 m	2,70	4,66	2x9	16,9
526120	U 3,26 / 5,78 m	3,26	5,78	2x11	19,8



Fiberglass ladders with fiber rungs
Mod. DFF
Double rungs stepladder


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of fiber.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
511100	DFF-1,60 m	1,60	-	6	8,3
511110	DFF-2,10 m	2,10	-	8	11,9
511120	DFF-2,60 m	2,60	-	10	15,5
511130	DFF-3,10 m	3,10	-	12	19,3
511150	DFF-3,60 m	3,60	-	14	27,2

Mod. EF
Simple ladder with only one section


All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium and the rungs of fiber.
The insulation between rungs is 30.000 V.

⚠ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
516110	EF-2,97 m	2,97	-	10	8,6
516130	EF-4,09 m	4,09	-	14	11,6

FIBERGLASS LADDERS

Mod. GMF

Two-section manual extension ladder



All our ladders meet the EN 131 standard. The struts are made of fiberglass and the rungs of aluminium and the rungs of fiber. The insulation between rungs is 30.000 V.

⚡ 30.000 V
EN 131

Code	Ref.	Length		Steps	Weight
		Folded	Unfolded		
521100	GMF-2,41/4,09	2,41	4,09	2x8	13,0
521110	GMF-2,97/5,21	2,97	5,21	2x10	18,5
521120	GMF-3,53/6,05	3,53	6,05	2x12	22,0
521130	GMF-4,09/6,89	4,09	6,89	2x14	25,5



- With a special design to show electrical safety products.
- Made with steel blue colour.







Polígono Industrial Plans d'Arau
C/ Tomas Edison, 17
08787 La Pobla de Claramunt
(Barcelona) - Spain

Fax +34 93 808 77 00

Customer service



+34 93 808 79 80

info@sofamel.es
www.sofamel.com



Αποστολοπούλου 59B
15231 Χαλάνδρι
Τηλ: 210 6754801, Fax: 210 6754804

info@enia.gr

www.enia.gr

sof