

PHOTOVOLTAIC

Connection and Safety Catalog
for **Photovoltaic Installations**



OFFICE AND WAREHOUSE

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Sofamel S.L. 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 exists on the market.

Our commitment with excellent quality work allows our company to own the quality management system certificate under standard UNE-EN ISO 9001:2015 and R+D+i certificate under standard UNE 166002:2006, both duly granted by the Spanish Association for Standardization and Certification (AENOR).







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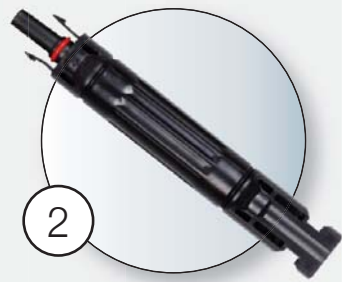
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Fuses



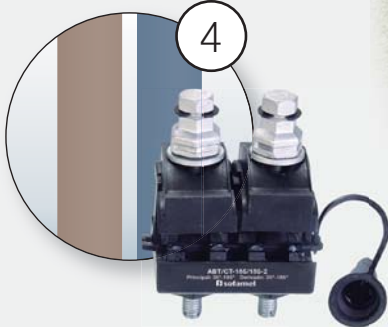
1

Connectors for the wiring



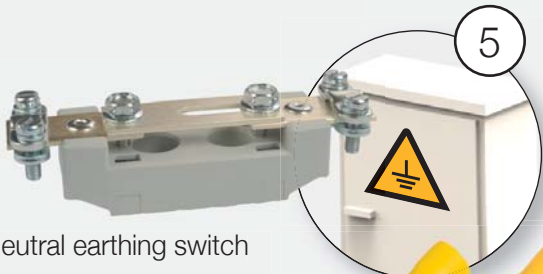
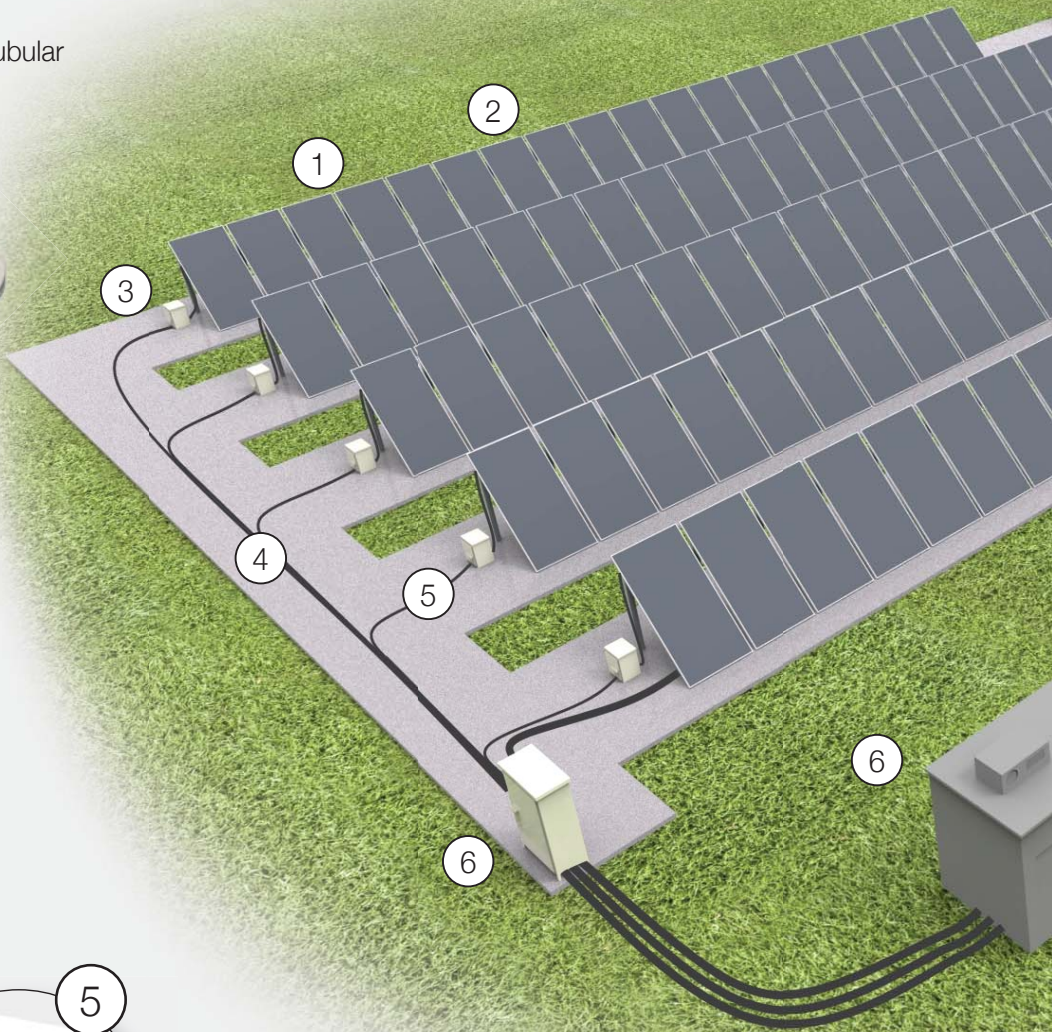
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Copper tubular terminals



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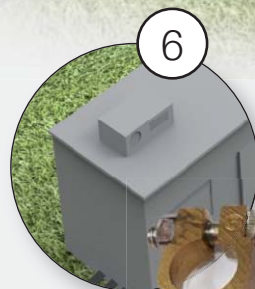
Insulating piercing connectors for Cu or Al cable



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Pre-insulated terminals

Neutral earthing switch

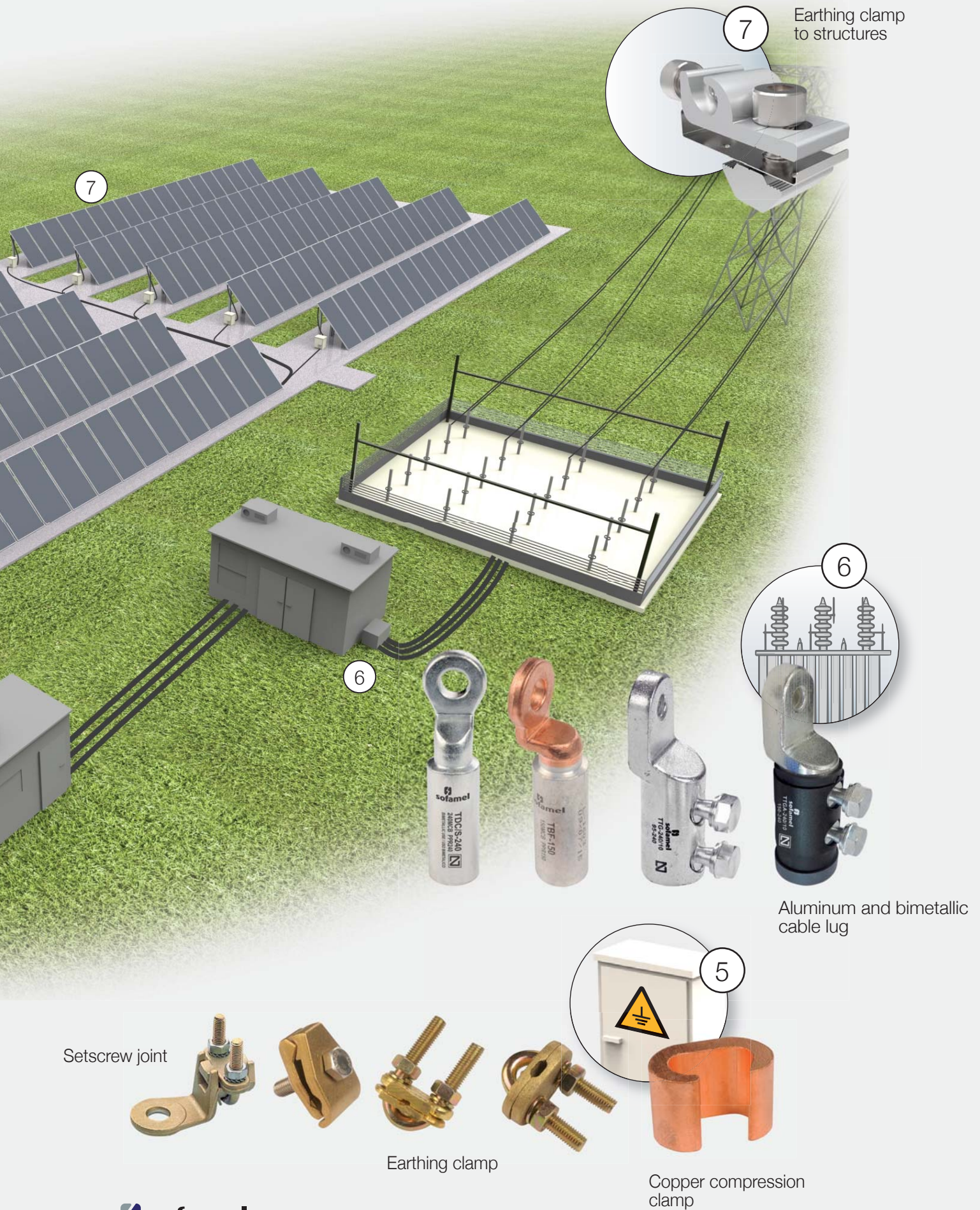


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Battery terminals



Photovoltaic power plants



Connectors for the wiring



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1



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Fuses

Tap-off connectors



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Copper tubular terminals



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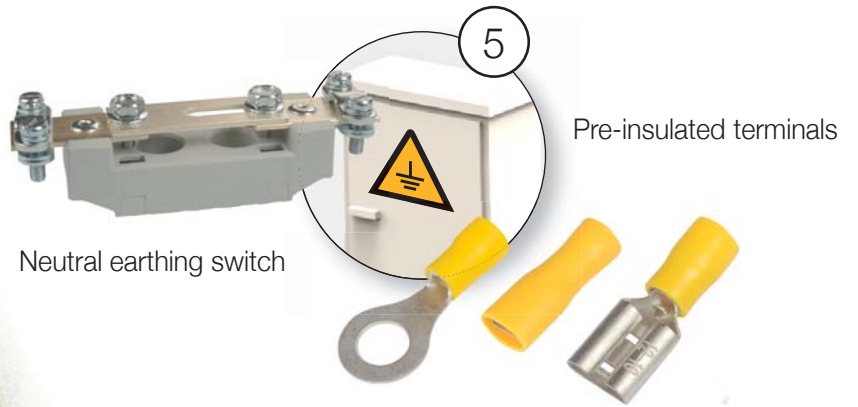
Self-consumption



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Earthing clamp to structures



Neutral earthing switch

Pre-insulated terminals



Setscrew joint



Earthing clamp



Copper compression clamp

Connection

CONNECTIONS FOR PHOTOVOLTAIC CABLES



11401 SCF/C

MC4 type connectors for 1000 V and 1500 V

MC4 type connectors, male and female: ensure a good connection and water tightness between the wiring terminations and the various elements that make up a photovoltaic installation.

SCF/C-1000V for cross-sections of between 2.5 and 6 mm²
SCF/C-1500V-A for cross-sections of between 2.5 and 6 mm²
SCF/C-1500V-B for 10 mm² cross-sections
A cable crimper is required for correct installation.



11401 SCF/D-TL

Tap-off connectors with flexible hose

MC4 type flexible connectors for connecting strings in parallel.

SCF/D-2TL-1500V
for connecting 2 to 1 and 1500 V isolation



11401 SCF/D-T

Tap-off connectors

MC4 type rigid connectors for connecting strings in parallel.

SCF/D-2T-1500V
for connecting 2 to 1 and 1500 V isolation
SCF/D-3T-1500V
for connecting 3 to 1 and 1500 V isolation



11401 SCF/FUSE

MC4 TYPE fuse holder for 1000 V and 1500 V

Fuse integrated in MC4 connector, watertight.
Possibility of changing fuse (from 10 A to 30 A).
SCF/FUSE-1000V, female-male.
SCF/FUSE-1500V, female-male.

Connection

CONNECTIONS FOR PHOTOVOLTAIC CABLES



11401 SCF/CT-1000V

MC4 type connectors
behind the scenes

The MC4 connectors, male and female, are designed for the photovoltaic solar system between the solar panel and the inverter or the connection box.

They are a simple and safe way to connect two solar cables with sections between 2.5mm², 4mm² and 6mm². They are dustproof, waterproof, anti-aging, UV resistant.



11404 MC4 SCF-LI

Installation key

Tool specially designed to facilitate the connection/disconnection process of MC4 connectors.



11404 LX-MC4

Cross wrench for installing MC4 fuse holders

Pair of wrenches for the installation of 1500V MC4 fuse holder connectors, MC4 type.

Specific tool for assembling and disassembling male/female photovoltaic connectors and fuse holders, as well as for their adjustment.

Connection

COPPER CONNECTORS



10101 T

Copper cable lug

T cable lug manufactured from electrolytic copper with a tinplated finish to improve electrical contact. Incorporates inspection hole to check the correct cable positioning.

According to IEC 61238-1-1 standard.



10102 TL

Copper cable lug long barrel

TL cable lug manufactured from electrolytic copper with a tinplated finish to improve electrical contact. The larger length of the barrel guarantees a better electrical connection in unfavorable conditions.

According to IEC 61238-1-1 standard.



10103 T45°

Copper cable lug 45°

T45° cable lug manufactured from electrolytic copper with a tinplated finish to electrical contact. Its particular orientation makes it suitable for installations where connection needs a specific placement.

According to IEC 61238-1-1 standard.



10104 T90°

Copper cable lug 90°

T90° cable lug manufactured from electrolytic copper with a tinplated finish to improve electrical contact. Its particular orientation makes it suitable for installations where connection needs a specific placement.

According to IEC 61238-1-1 standard.

Connection


BIMETALLIC CONNECTORS



10404 TDC/S

Bimetallic cable lug

Los terminales bimetalicos TDC/S están fabricados en barTDC/S bimetallic cable lug manufactured from aluminium alloy tube of purity equal or higher than 99.5%. The complete cable lug surface is tinned by means of an electrolytic process. Incorporates neutral grease to avoid aluminium oxidation. It is especially designed for underground cable connections.

According to UNE 211024 standard.
Have  AENOR certificate mark.*



10406 TBF

Bimetallic cable lug

TBF bimetallic cable lug manufactured from aluminium alloy of purity equal or higher than 99.5%. The palm is manufactured with forged copper. The two parts of the bimetallic cable lug are joined through a friction stir welding process. Incorporates neutral grease to avoid aluminium oxidation.

Electric test according to CEI 61238-1 standard.
Tested under IEC 61238 standard.



10407 TBPE

bimetallic cable lug

TBPE bimetallic cable lug manufactured from aluminium alloy of purity equal or higher than 99.5%. Incorporates neutral grease to avoid aluminium oxidation.

Specially designed for investors.

Connection


BIMETALLIC CONNECTORS



10201 TTG

Shear head bolt cable lug

TTG cable lugs are manufactured from high conductivity smelted aluminium of purity higher than 99.5% and with a tinned finish that covers the complete cable lug surface by means of an electrolytic process.

*According to UNE 211024-3 standard.
Have the  AENOR certificate mark.




10203 TTGA

Insulated terminals with shear head bolts

TTGA cable lugs are manufactured from high-conductivity cast aluminium with a finish covering the complete cable lug surface using a tinning process.

They feature an insulated cover and different-coloured bands to differentiate between phases: black, brown and grey, and neutral in blue.

*According to UNE 211022 standard.
Have the  AENOR certificate mark.

PIERCING CONNECTORS



11101 ABT

Insulating piercing connector 6kV/min.

ABT piercing connectors are made from 6.6 polyamide with fiberglass. Saw-shaped tabs are made from brass with a tinned finish to improve electrical contact. Connection by piercing the main and tap cables.

HEAT SHRINK



11202 TPMA

Medium-walled heat shrink tube with adhesive

TPMA tubes possess an excellent isolation, watertight seal, and abrasion and impact resistance. They are used in low voltage electrical applications and provide an excellent mechanical protection.

Connection

EARTHING RODS CLAMPS AND BATTERY CONNECTIONS



11302 TGT142

Earthing rod clamps

Earthing rod clamp manufactured from brass with galvanized steel ring. For \varnothing 14,2 mm earthing rods.



11302 TGT142 RF

Reinforced earthing rod clamp

Earthing rod clamp manufactured from brass from galvanized steel ring. The cable tie walls thickness improves the safety and durability of the cable connection. For \varnothing 18,6 mm max. earthing rods.



11302 GTR

Earthing clamp

GTR earthing clamp manufactured from brass with stainless steel screws. With high robustness, they are designed for earthing connections.



11404 SCF/BB

Battery terminals

Set of 2 brass terminals for connecting the cable to the battery: includes one positive and one negative terminal.



11401 SCF/GC

Earthing clip SCF/GC

Earthing clamp for photovoltaic structure, Al+stainless steel.

It is valid for solar structures type G1. For the rest of the structures, the profile must be drilled and M8 must be used.

Herramientas

CORTACABLES MANUALES



20101 SF-21

Cortacable manual

Para cable de cobre y aluminio hasta 16 mm².

HERRAMIENTA DE CRIMPADO



20103 SF-MC4

Herramienta de crimpado

Herramienta de engaste para conectores solares a cables de 2,5-6 mm² para instalaciones fotovoltaicas.

PELACABLES



20105 SF-D10

Pelacables

Para pelar el aislamiento de plástico o goma de cables y alambres individuales o múltiples de 0,08-10 mm².

Con cortador de alambre para cables de cobre y aluminio, múltiples hilos hasta 16 mm².

No daña el núcleo conductor y garantiza una larga vida útil.



20105 PL-6

Pelacables

El diámetro de pelado se ajusta automáticamente para diferentes secciones de cable.

Diseño de cuchilla preciso sin dañar los hilos del conductor. Durante el pelado, el alambre se mantiene firme por mandíbulas de sujeción.

Con tope de longitud ajustable, con un resorte que devuelve el pelacables a la posición inicial, cómodo de usar y duradero.



30201 SG

Dielectric gloves

The natural latex base has excellent dielectric properties. The thicker the glove, the greater the electrical resistance. The ergonomic design provides comfort and a smoother feel, and allows the glove to be put on and taken off very easily.



30202 SGM

Insulated gloves

Composite insulated gloves provide electrical, mechanical and arc-flash protection, and as such do not need to be combined with any other kind of glove with mechanical protection.

The Composite glove range is made using a natural latex base covered by an outer layer of polychloroprene, combining mechanical resistance and comfort with a high level of protection.

Arc flash protection: the glove material has excellent properties in the event of a short circuit in the electric arc.



30204 SG

Leather overgloves

Leather overgloves must be worn over dielectric gloves to protect against mechanical risks as well as against possible electric arc risks. These leather cowhide gloves with webbed thumbs have a 10 cm cuff with a retightening velcro strap on the back of the hand.

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

According to EN 388 standard.



30205 SG-37

Fire-resistant gloves

Gloves made of NOMEX fiber with fire-resistant properties.

They are used under dielectric gloves with the aim of protecting against a possible electric arc.

According to EN 407 standard.

Safety

PERSONAL PROTECTION ELEMENTS



30304 ARMOUR

Safety helmets for protection from mechanical and electrical hazards

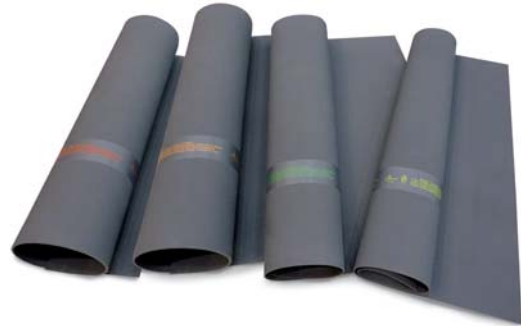
ABS helmet complete with a 1.7 mm thick polycarbonate face shield. The head circumference of the hard hat can be adjusted in 1 mm increments from 53 to 63 cm with a two-point height adjustment.

Temperature range from -40 °C to +60 °C.

Weight: 790 g

Product manufactured and tested according to: EN 397:2012+A1:2012, EN 50365:2002, EN 166:2001, GS-ET-29:2010 and ANSI/ISEA Z89.1.2014

INSULATION ELEMENTS



30502 AD

Class 0, 2, 3 and 4 insulating mat

Specific Rubber Base: natural rubber SBR.

Specific weight: 1.51 g/cm³ (specific gravity)

Hardness: 71 Shore A

Tensile Strength: 75.5 Kg/cm²

Elongation at break: 362%

Resistance to tearing: 20 Kg/cm²

Resistance to abrasion: 182 mm³

Temperature Feild: -40°C / +70 °C

Chemical resistance: Diluted acids and bases - Moderate
According to IEC 61111.

INSULATION ELEMENTS



30501 STM

Insulating stool for indoor use

Made of high impact copolymer polypropylene.

The platform surface is rough and non-slip.

Rubber tips are placed under the legs to give it greater adherence to the floor and protection from wear.

Platform: 640x640 mm

Surface: 528x528 mm

According to UNE 204001 standard.



30501 STE

Insulating stool for outdoor use

Made of high impact copolymer polypropylene.

The platform surface is rough, non-slip and the legs have deflecting hoods.

Rubber tips are placed under the legs to give it greater adherence to the floor and protection from wear.

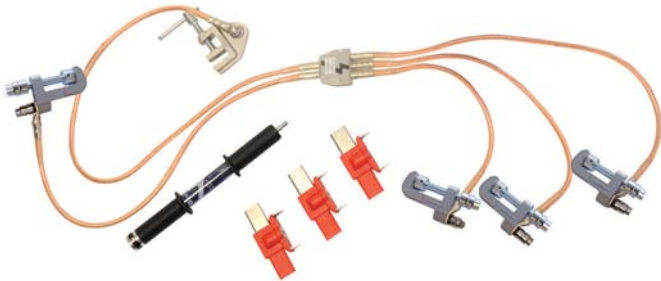
Platform: 525x525 mm

According to UNE 204001 standard.

Legs made of IEC 60855 foam filled tube.

Safety

EARTHING AND SHORT CIRCUIT EQUIPMENT



EARTHING AND SHORT CIRCUIT EQUIPMENT

The main aim for its installation is operator's protection against an accidental commissioning or possible voltage return during repair operations.

The earthing and short-circuit equipment for low voltage electrical panels comply with the IEC 61230 standard.

Possibility of customizing any equipment.

VOLTAGE DETECTOR



30909 BVD-1500

Portable bipolar voltage detector

The BVD-1500 voltage and continuity tester includes functions of AC and DC voltage check, phase sequence test, diode test and RCD test.

Allows you to quickly measure voltage levels in any environment. It meets the IP65 waterproof and dustproof rating, making it completely safe to use, even in wet locations.

INSULATING POLES

30706 BSC-M

Connectable multiuse poles

Indoor and Outdoor use in humid environment

Multiuse poles according to EN-50508 standard of 1 single-section. Manufactured with a Ø 32 mm polyester and fiberglass tube and filled with polyurethane foam that complies with the IEC 60855 standard.

Head: U (Universal), B (Bayonet), H (Hexagonal)

Includes carrying bag.



30705 BMAE

Connectable poles

Connectable poles with two sections, made of polyester and fiberglass tube Ø 32 mm with humidity-proof seals on each end, hand protector, grip, tip and M (Metric-10), U (Universal), B (Bayonet) or P (Hexagonal + Metric-10) head.

Safety

RESCUE AND FIRST AID



31001 SZ-51M

Rescue panoplies

Composed of a 1 x 1.6 m board that contains the following elements:

- 1 BS-45 rescue pole
- 1 5-36 kV voltage detector with pole
- 1 plastic case for gloves
- 1 pair of dielectric gloves (class 3)
- 1 SZ-57/25 insulated wire cutter
- 1 pipette
- 1 45 kV insulating stool
- 1 pair of insulating shoes
- 1 first aid plate
- 1 instruction plate



31002 KRM-4001

Manoeuvring and rescue kit

Elements of the kit:

- 1 1.5 m telescopic pole of three sections
- 1 optical and acoustical detector from 5 to 36 kV with bag
- 1 rescue hook with universal head
- 1 pair of dielectric gloves SG-40 T10 stored in a nylon bag
- 1 insulating mat AD4-0610/40C of 60 cm x 1 m, working voltage 36 kV
- 1 respiration pipette
- 1 neck immobilizer
- 1 fire resistant blanket SZ-180 of 1.2 x 1.8 m
- 1 stretcher

Material for work at height

EVERYTHING NECESSARY FOR YOUR PERSONAL PROTECTION



30301 SO-71

Fall-arrest harness with belt



30301 S/ATC

Safety harness with belt



30304 S/CABS-397

Safety helmet



30301 SO-06

Support belt with rope



30301 SO-74

Steel symmetrical karabiner



30301 S/MOAL

Aluminium asymmetrical karabiner

Material for work at height

EVERYTHING NECESSARY FOR YOUR PERSONAL PROTECTION



30301 S/ADM-353

Sliding fall arrest device



30301 S/CSE-353

Semi-static rope



30301 SO-75

Lifeline cord



30301 S/ELAR-354

Adjustable rope



30301 SO-07

Adjustable rope



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