



Connection and Safety Catalog
for **Photovoltaic Installations**



OFFICE AND WAREHOUSE

C/ Thomas Alva Edison, 16-17
Pol. Industrial Plans d'Arau
08787 La Pobla de Claramunt
(Barcelona) España

FACTORY AND LABORATORY

C/ Thomas Alva Edison, 12-13
Pol. Industrial Plans d'Arau
08787 La Pobla de Claramunt
(Barcelona) España

CUSTOMER SERVICE

Tel. +34 93 808 79 80
ventas@sofamel.es
export@sofamel.es

www.sofamel.com

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).







index

CONNECTION

- 10 Connections for photovoltaic cables
- 11 Copper connectors
- 12 Bimetallic connectors
- 13 Piercing connectors
- 13 Heat shrink
- 14 Earthing rods clamps and battery connections

TOOLS

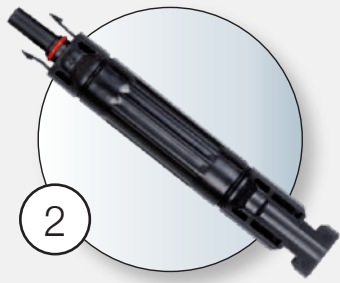
- 15 Cortacables manuales
- 15 Wire and cable strippers
- 15 Crimping tool

SAFETY

- 16 Personal protection elements
- 17 Insulation elements
- 18 Earthing and short circuit equipment
- 18 Personal voltage detectors
- 18 Insulating poles
- 19 Rescue and first aid

MATERIAL FOR WORK AT HEIGHT

- 20 Everything you need for your personal protection



2

Fuses



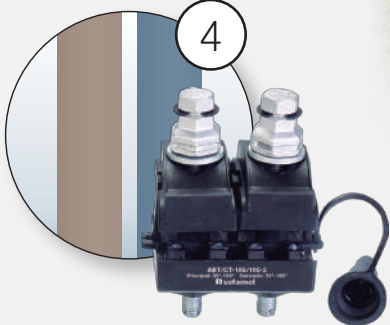
1

Connectors for the wiring



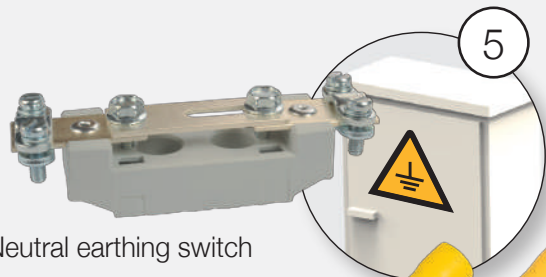
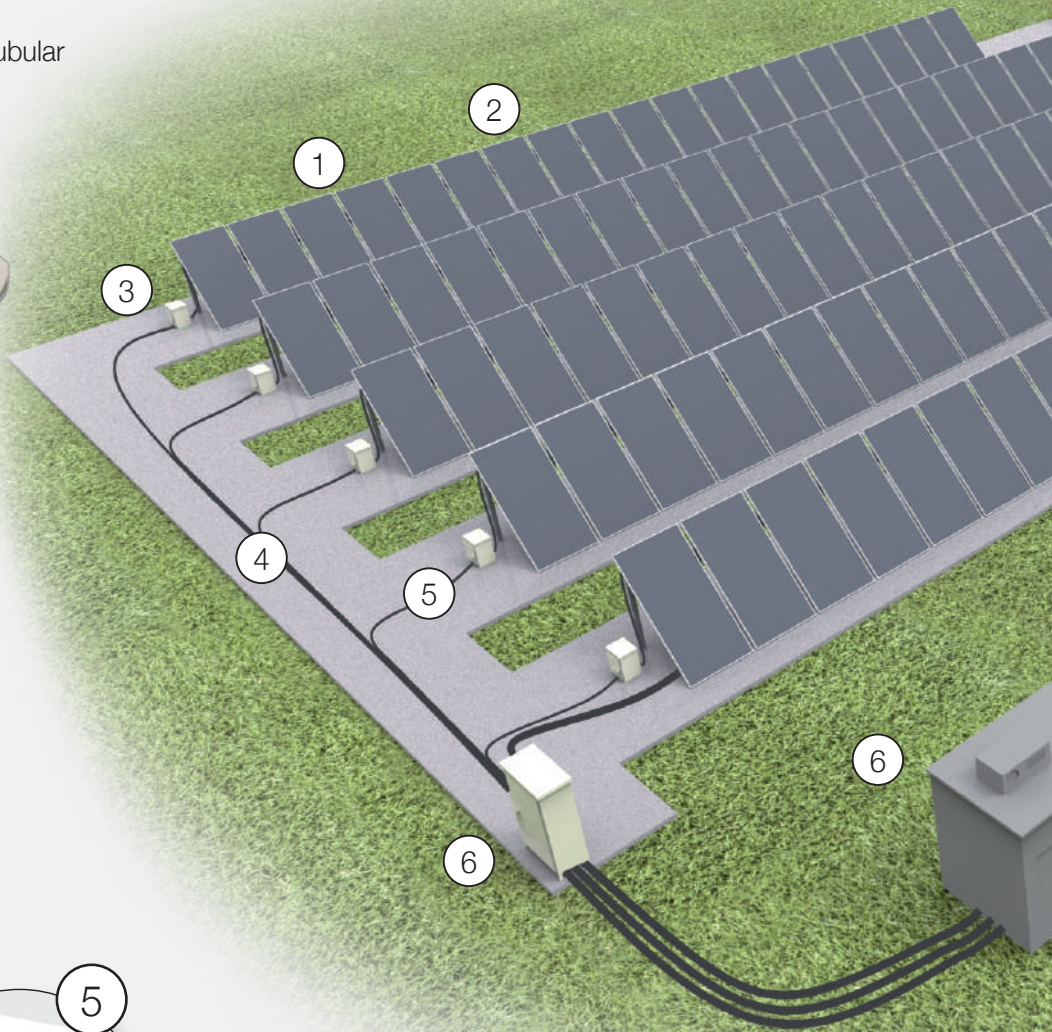
3

Copper tubular terminals



4

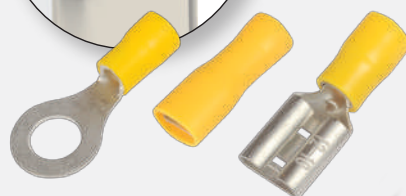
Insulating piercing connectors for Cu or Al cable



Neutral earthing switch

5

Pre-insulated terminals



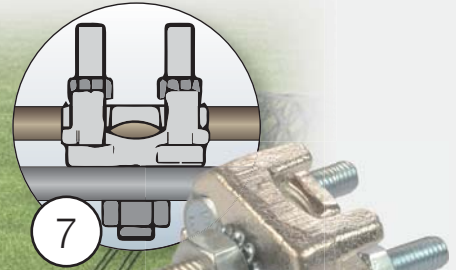
6

Battery terminals



Photovoltaic power plants

Brass connectors for connecting to structure

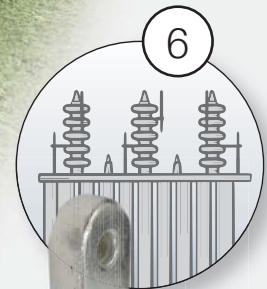


7

7

6

6



Aluminum and bimetallic cable lug

5

Setscrew joint



Earthing clamp

Copper compression clamp

Connectors for the wiring

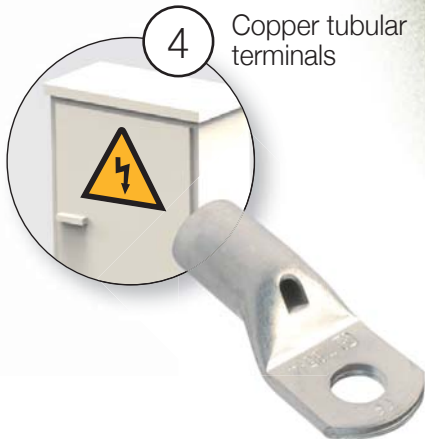


Fuses

Tap-off connectors



Copper tubular terminals

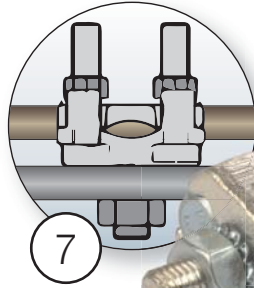


Self-consumption

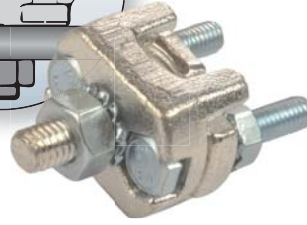


7

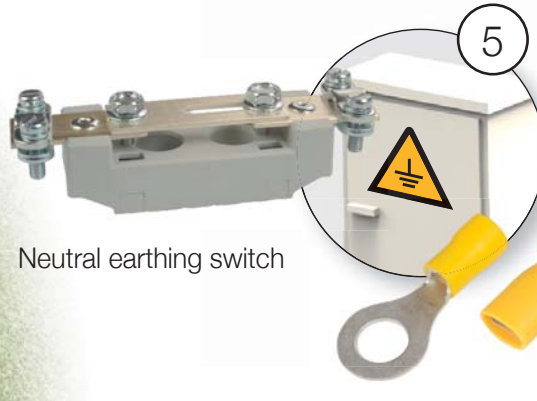
8



Brass connectors for connecting to structure



Solar optimiser



Neutral earthing switch

Pre-insulated terminals



Copper compression clamp



Setscrew joint



Earthing clamp



Connection

CONNECTIONS FOR PHOTOVOLTAIC CABLES



501 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 1 and 6 mm²
- **SCF/C-1500V-A** for cross-sections of between 1.5 and 6 mm²
- **SCF/C-1500V-B** for 10 mm² cross-sections

A cable crimper is required for correct installation.



501 SCF/FUSE

MC4 TYPE fuse holder for 1500 V

Integrated, watertight 20 A fuse in MC4 connector.

Fuse dimensions: 10x85 mm.

Possibility of changing fuse (from 10 A to 50 A).

- **SCF/FUSE-1500V**, female-male.



501 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
- **SCF/D-3TL-1500V** for connecting 3 to 1 and 1500 V isolation



501 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



501 SCF/OPT

Solar optimiser

SCF/OPT power optimisers to connect to solar panels: used to reduce losses from a photovoltaic system and therefore increase system efficiency.

Connection

COPPER CONNECTORS



010 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 61238-1-3 standard.



006 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 61238-1-3-3 standard.



007 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 61238-1-3 standard.



008 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 61238-1-3 standard.

Connection


BIMETALLIC CONNECTORS



111 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.*



101 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 tinplated 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.



110 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.



103 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 tinplating 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.

Connection

PIERCING CONNECTORS



136 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 tinplated finish to improve electrical contact. Connection by piercing the main and tap cables.

HEAT SHRINK



377 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



T50 TGT142

Earthing rod clamps

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



T50 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 Ø 18,6 mm max. earthing rods.



170 GTR

Earthing clamp

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



501 SCF/BB

Battery terminals

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

Tools

CABLE CUTTERS

WIRE AND CABLE STRIPPERS

CRIMPING TOOL



380 SF-21

Cable cutters

For copper and aluminium cables up to 16 mm².



400 SF-22

Wire and cable strippers

For stripping wire from 0,5 to 6 mm². Incorporates a buffer stop.



385 SF-MC4

Crimp tool

Crimping tool for solar connectors to 2,5-6 mm² cables for photovoltaic installations.

Safety

PERSONAL PROTECTION ELEMENTS



530 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.



531 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.



539 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.



535 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



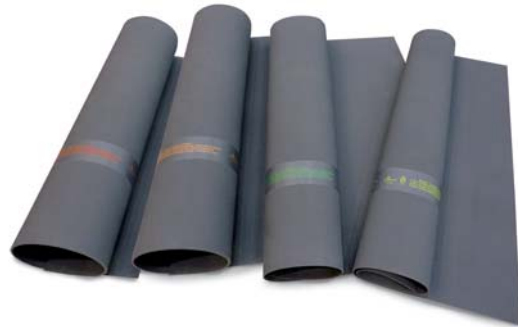
565 ARMOUR

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



585 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 Field: -40°C / +70 °C

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

INSULATION ELEMENTS



580 ST

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: 525x525 mm
Surface: 575x575 mm

According to UNE 204001 standard.



580 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.

PERSONAL VOLTAGE DETECTORS



635 TESTER PD

Optical & Acoustic

A two-pole voltage tester with phase discriminator, optical signal by LEDs when presence of voltage and continuity test.

According to EN 61243-3 standard.

INSULATING POLES



618 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.

617 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



690 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



691 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



550 SO-71

Fall-arrest harness with belt



550 S/ATC

Safety harness with belt



565 S/CABS-397

Safety helmet



550 SO-06

Support belt with rope



550 SO-74

Steel symmetrical karabiner



550 S/MOAL

Aluminium asymmetrical karabiner

Material for work at height

EVERYTHING NECESSARY FOR YOUR PERSONAL PROTECTION



550 S/ADM-353
Sliding fall arrest device



550 S/CSE-353
Semi-static rope



550 SO-75
Lifeline cord



550 S/ELAR-354
Adjustable rope



550 SO-07
Adjustable rope



sofamel



OFFICE AND WAREHOUSE

C/ Thomas Alva Edison, 16-17
Pol. Industrial Plans d'Arau
08787 La Pobla de Claramunt
(Barcelona) España

FACTORY AND LABORATORY

C/ Thomas Alva Edison, 12-13
Pol. Industrial Plans d'Arau
08787 La Pobla de Claramunt
(Barcelona) España

Customer service



+34 93 808 79 80

ventas@sofamel.es - export@sofamel.es
www.sofamel.com