



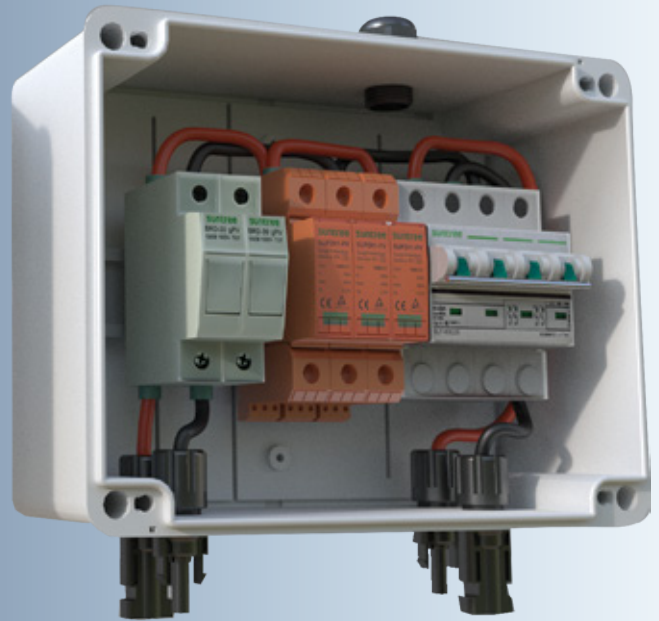
SolarSafe[®]

JSL Combiner Box • Photovoltaic Protection

Certified
Components



JSL



SOLARSAFE COMBINER BOX

Protection for DC Solar Photovoltaic Installations (Compatible with 1 or 2 strings)

Capacity: 1000V DC – **25A** | Nominal discharge current: **20 kA** | Maximum discharge current: **40 kA**

STRUCTURAL CHARACTERISTICS



Plug & Play with MC-4 connectors to connect the cables coming from the solar panels



Thermoplastic IK08 (with transparent cover)



Temperature of use: -5°C +60°C



3/4 Cover lock screws



UV Protection



Isolation Class 2



DIN rail included



Sealable



Grey RAL 7035





PROTECT YOUR INVESTMENT

The solar installations are based on photovoltaic (PV) cell panels. The cells use solar energy to convert light photons into Direct Current (DC). The electricity generated by the solar cells in this way feeds an inverter that regulates and converts Direct Current into Alternating Current (AC).

The electric energy in Alternating Current can be used locally by specific equipment, homes, or be directly connected to the grid and thus be used as clean energy, protecting the environment.

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Components



SolarSafe - Minimize risks and protect your investment in an active, affordable and smart way!

We know that solar users are much more cost and efficiency conscious of their systems and want to recoup their initial investment as quickly as possible. But without proper protection of their systems they may just be shifting the value of the initial investment to maintenance or repair budgets.





CLASS II INSULATION

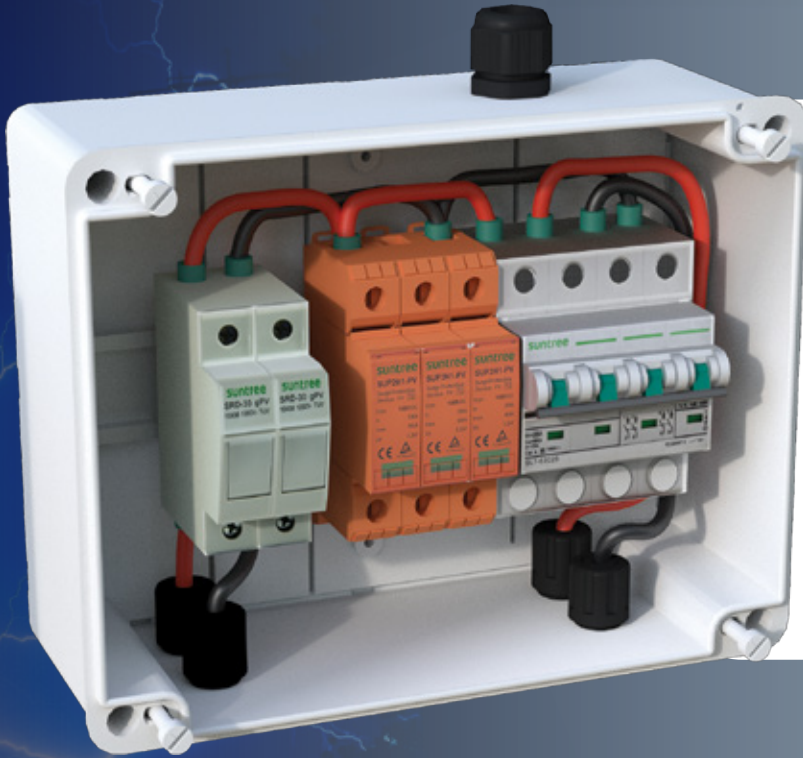
With Type 2 protection for overvoltage currents originated by atmospheric phenomena in photovoltaic installations (and others). Protect investments and minimize equipment and system failures.

In order to guarantee high levels of availability of the inverters and electrical components used in photovoltaic installations, it is necessary to protect them against destruction by overvoltage surges.

JSL offers a combiner box containing the lightning protection devices, connection of the solar panel strings, and ultra fast disconnection of the DC coming from the solar panels.

The board is ready to use, being supplied pre-wired and ready to use, just by connecting the cables from the solar panels with MC-4 connectors to the connectors that the board already has. The connection of the board to the inverter is also done through the wiring provided with MC-4 connectors that will be connected to the MC-4 connectors that the board already has assembled. To complete the implementation of the "combiner box", simply connect the ground terminal of the overcurrent protection device (DSP) to the "Ground" circuit.

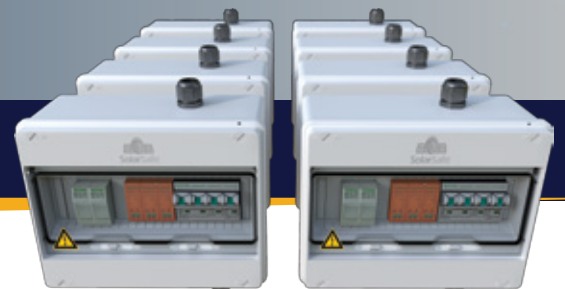




NOMINAL FIGURES

The SolarSafe combiner box can be used for 1 or 2 strings of solar panels and for currents up to 25A I_{MAX} and 1000 V DC covering more than 95% of the self-consumption needs with or without injection of power into the grid. The Quadro is suitable for "Inverters" of 550V DC / 100V DC per Input (per String).

TECHNICAL INFORMATION



- Capacity: 1000V DC – 25A
- Lightning protection: Type 2 with visual indication and remote signaling possibility
- Nominal discharge current: 20 kA
- Maximum discharge current: 40 kA
- No. of DC inputs (combiner strings): 1 (2 optional)
- No. of MPPT for Inverter: 1
- Supplied with PV fuse holder for each of the DC phases with 33kA breaking capacity (10×38 gPV fuses not supplied)
- Completely assembled, wired and tested, ready to install
- Supplied with MC-4 connectors (ready to connect)
- IP55 tightness degree

EQUIPMENT USED IN THE SOLARSAFE COMBINER BOX



Plug&Play

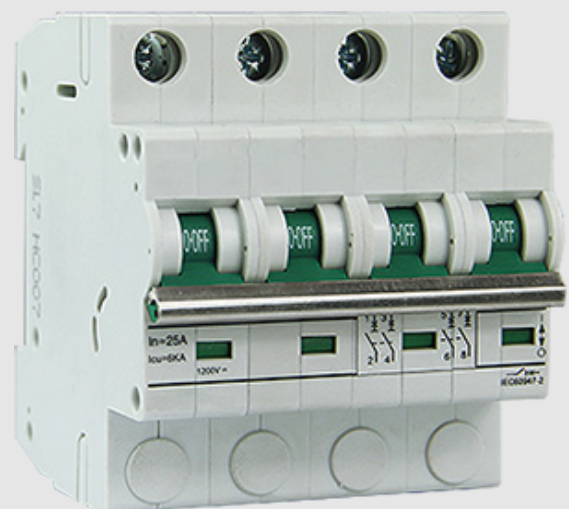
The Combiner Protection Box is ready to be installed as it is supplied already pre-assembled and pre-wired. Truly plug&play! Just connect the MC4 cables connectors coming from the solar panels to the MC-4 Combiner Box connectors.

DC MAIN SWITCH

25A switch for 1000V DC. DC switch with opening speed independent of the force applied by the user: 4 poles (2 Switches in series for each Phase) recommended for connecting and disconnecting instantaneous DC loads. The size of the unit depends on the type of installation, the connection scheme, and the DC voltage applied to its terminals, and ensures perfect isolation between the inverter and the panels. It has a compact shape and is supplied already assembled on a DIN 35 rail inside the Combiner box. The DC switch can be supplied in the rotary handle version or in the MCB version with lever, with the internal switches acting perfectly simultaneously.



SISO-Z



SL7-PV

SURGE PROTECTION DEVICE TYPE 2 DC

Specific for protection against indirect lightning strikes on the DC side of the photovoltaic installation. System with internal protection that prevents fires and damage to the installation due to lightning and storms. Version with removable cartridges. Nominal discharge current 20kA. Maximum discharge current 40 kA. Protected Voltage level value: 3.8kV. Maximum continuous operation voltage: 1050V.

Includes remote monitoring module.



10X38 DC FUSE HOLDER (FOR PV TYPE FUSES)

This fuse holder for PV fuses type 10×38, meets the special requirements of this type of solar installations, ensuring the best protection for the system and for the people working with the equipment. 1 Pole body for photovoltaic applications up to 32 A 1000 V DC (supplied without fuses).



(fornecido sem fusíveis)

MC-4 WIRING USED AND CONNECTORS

The cables used in the JSL "Combiner box" wiring are 6mm², stranded type, special for DC solar installations. The JSL "Combiner box" is equipped with one or two sets of MC-4 connectors for the DC INPUT side and one set of MC-4 connectors on the DC OUTPUT side destined for the Inverter. These MC-4 connectors have Uoc: < 1 000V.



SOLARSAFE PLUG&PLAY COMBINER BOX INSTALLATION



JSL's range of boards for PV systems includes 2 versions with DC protection

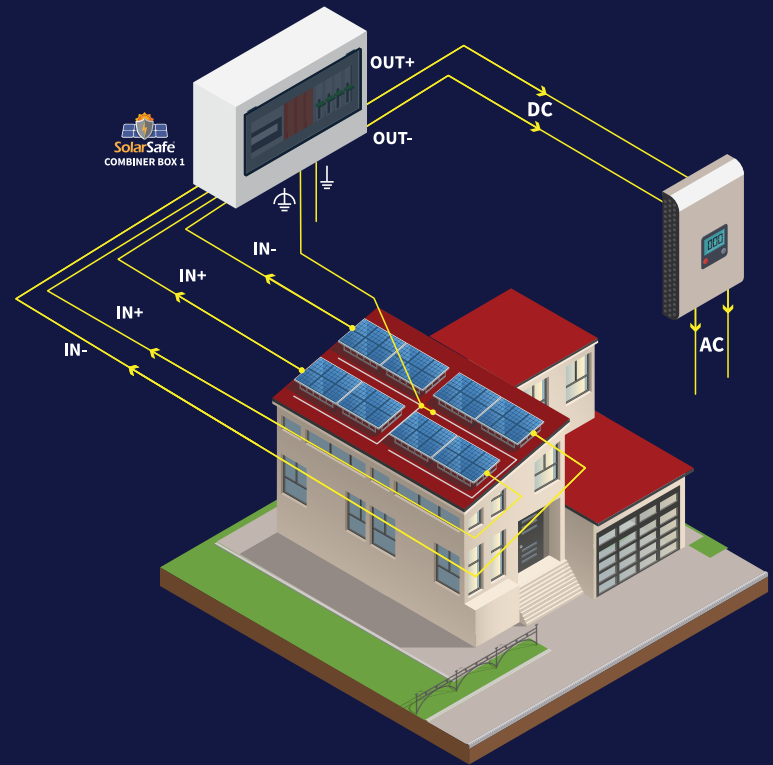
1 String

Model for 1 Solar Panel Set (up to 20A (25A max))

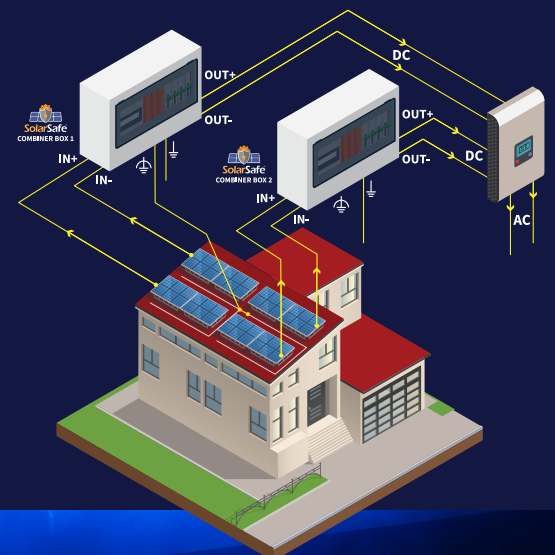


2 Strings

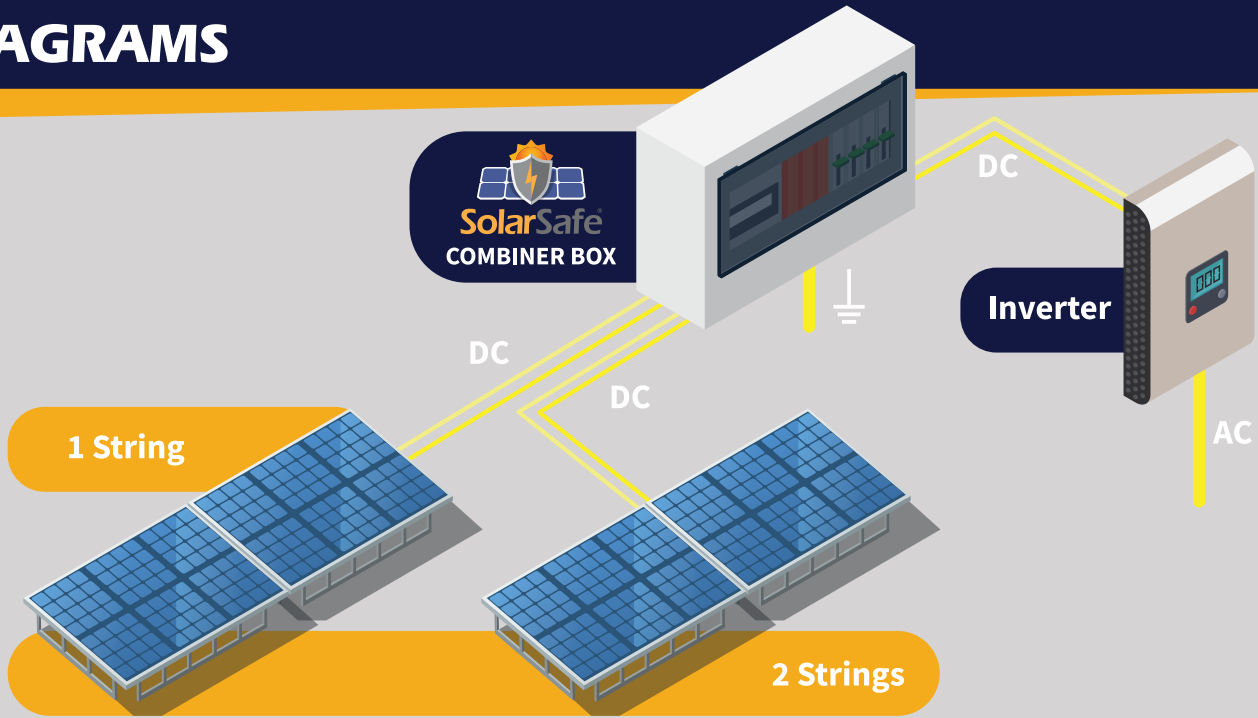
Model to receive 2 independent sets of solar panels (up to 20A (25A max) per combiner box)



In case of more than 2 sets of solar panels on the production unit (> 2 Strings), a combination of 3 or 4 "Combiner boxes" (of 1 or 2 Inputs) can be used to meet the needs of the installation and the electrical capacities of the unit. They will function as partial protection units that can continue to function even in the case of a lightning strike in a part of the installation.

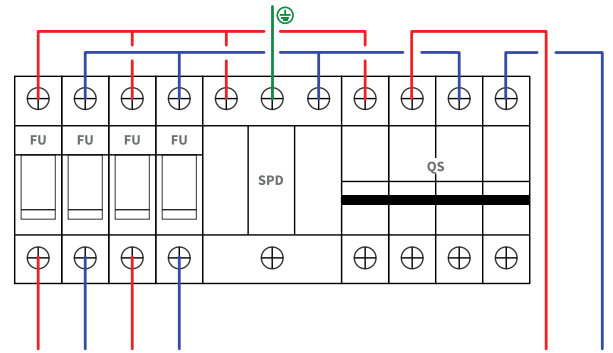
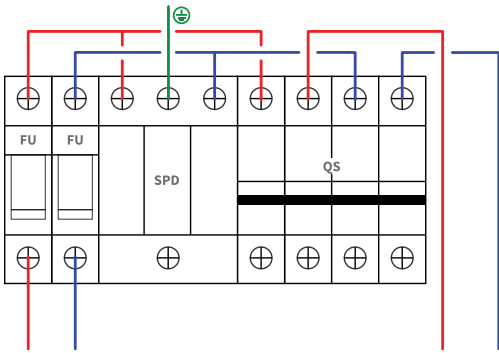


DIAGRAMS



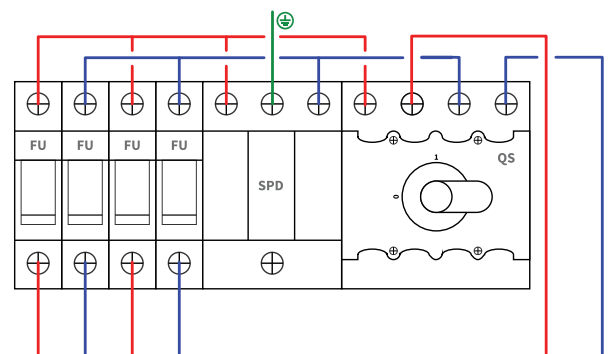
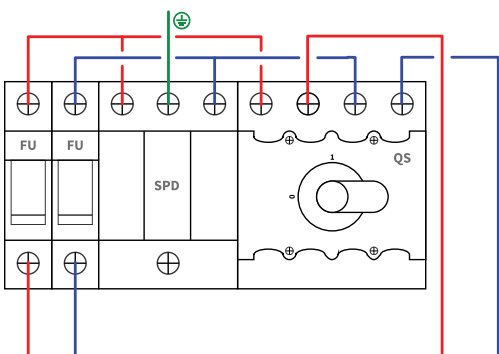
With DC SL7-PV switch (1 String)

With DC SL7-PV switch (2 Strings)



With DC SISO-Z switch (1 String)

With DC SISO-Z switch (2 Strings)





TECHNICAL INFORMATION

ELECTRICAL PARAMETERS

System maximum DC voltage	1000 V DC
Maximum Input Current total	25A (in Total in case of 2 strings)
Strings	1 (2 Strings optional)
Maximum Output Switch Current	32A
Number of Inverter MPPT	1
Number of Output Strings	1

SURCHARGE AND LIGHTNING PROTECTION

Test category	Protection degree 2
Nominal discharge Current	20kA
Maximum discharge Current (8-20μS) I _{max}	40kA
Voltage protection level	3.8kV
Maximum continuous operating Voltage U _c	1050V
Phases	2P (plus Earth discharge)
Structure characteristic	Plug-push module (changeable)

SYSTEM

Protection grade	IP55
Output main Switch	Isolation Main Switch DC (double switch per each phase) MCB type. Optional Main Rotary switch type DC (double switch per each phase)
Nominal main switch rated Current	32A
Nominal main switch rated Voltage	1000 V DC
Waterproof SMC4 Connectors (PLUG&PLAY)	Version 1 String: standard: 2 entries - 2 exits (male -female) Version 2 Strings: Standard: 4 entries - 2 exits (male -female)
Fuse PV DC	Type 10x38 ; not supplied
Monitoring module	Included
Raw material of the board	Halogen free thermoplastic
Installation method	Wall Mount
Install Temperature	-5°C~ + 55°C
Permissible relative humidity	0-95% , without condensation

MECHANICAL PARAMETERS

Length x Height x Depth	232 x 182 x 109 mm
IK	08

STANDARDS

Waterproof board	EN 60670: EN 60529: EN 62262
DC Surge Protection Device (SPD) Type 2	IEC 60364-7-712; IEC 61643-31 Type2; IEC 61643-1 Class2
Main Switch DC	IEC 60947; IEC 60947-2; IEC 60947-3
Fuse holder DC (10x38 Pv)	IEC 60269-6 (gPV)

MODELS

1 String



Ref.

CBS-SL7

(Includes DC SL7-PV Switch)



Ref.

CBS-SISO

(Includes SISO-Z DC Switch)

2 Strings



Ref.

CBS-SL7-II

(Includes DC SL7-PV Switch)



Ref.

CBS-SISO-II

(Includes SISO-Z DC Switch)



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For more information, visit:

jsl-online.com/en/solarsafe-plug-play-combiner-box



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PORTUGAL
2020



UNIÃO EUROPEIA
Fundos Europeus
Estruturais e de Investimento

JSL
Material Eléctrico

60⁺
YEARS