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# HELIANT srl

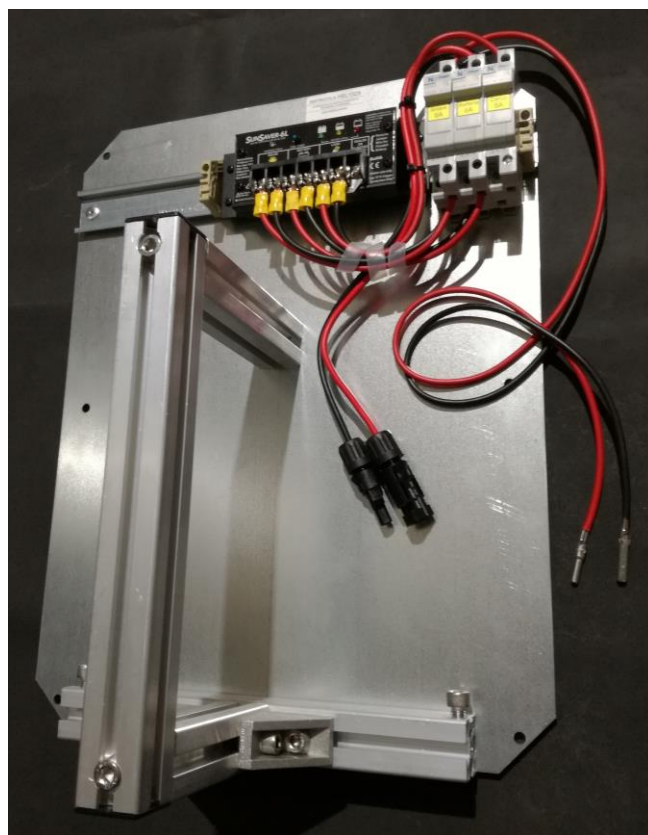
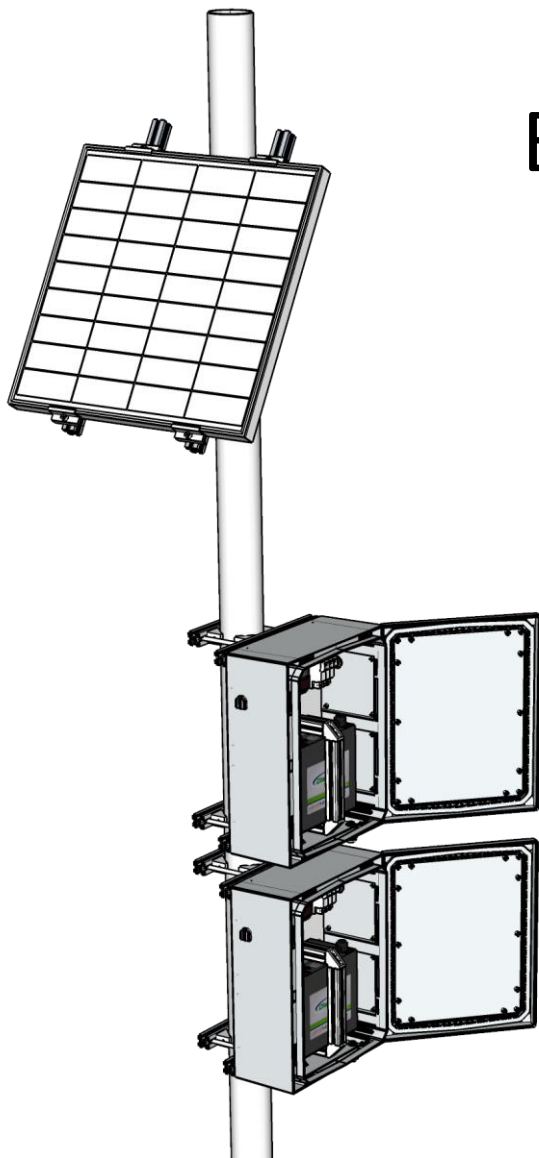
sede operativa, destinazione merci e corrispondenza  
via Orvieto 19 - 10149 Torino  
tel 0112166697 - fax 0110200241

sede sociale

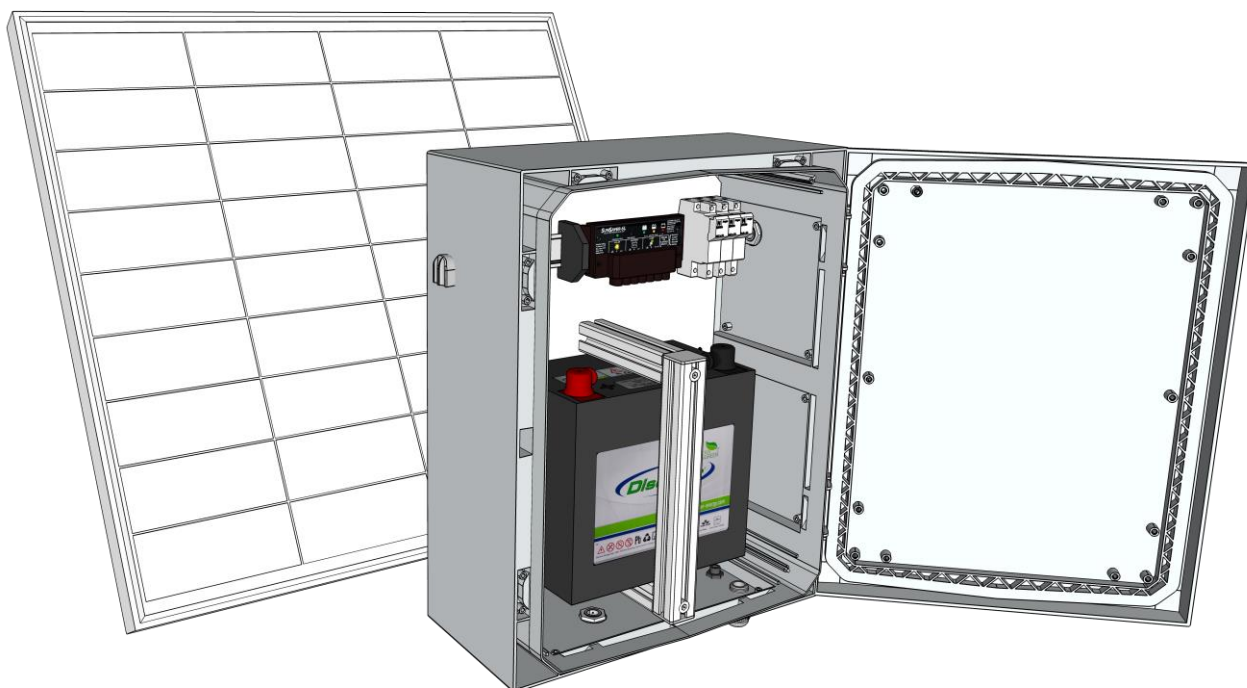
c.so Tassoni 12 - 10143 Torino

- capitale sociale 20.000 euro i.v.
- CF e iscrizione registro imprese di Torino 06865110016
- partita iva 06865110016
- REA CCIAA di TORINO 818361
- REG RAEE T08020000002723
- REG PILE T09060P00000344

## Energy System

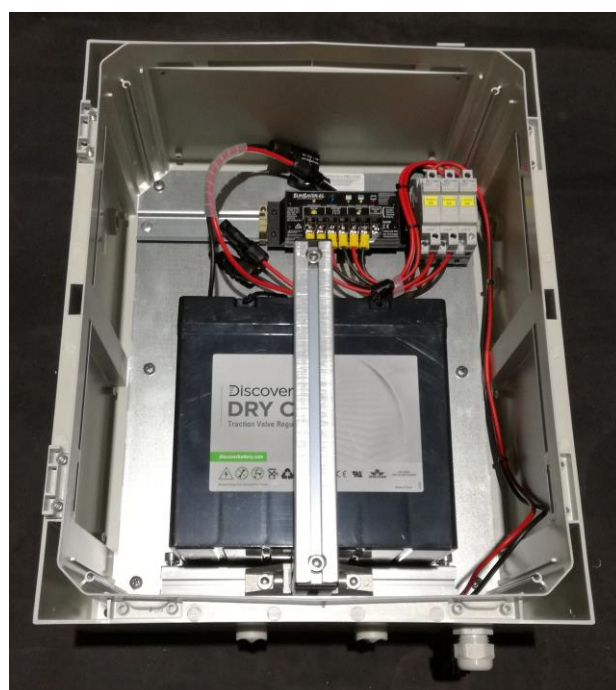


**Energy System** is a complete Off-Grid photovoltaic plant, supplied pre-assembled and pre-wired in order to offer a quick and easy installation on a pole or on a wall, as a plug and play solution.



It is suitable to power:

- telemetry sensors
- radio link analogue/IP
- flash lights
- general illumination
  - remote areas
  - advertising panels
  - warning panels
  - artistic installations/monuments





## Composition

Energy System is composed of:

- one or more polycarbonate box that include battery, solar controller and openable fuses
- the box mounting system for pole or wall
- one or more solar modules
- solar modules mounting system for pole, wall, floor
- electrical connections between the solar modules and the box are made with quick plug MC4 type
- electrical connections inside the boxes are made with quick plug MC4 type

## Features

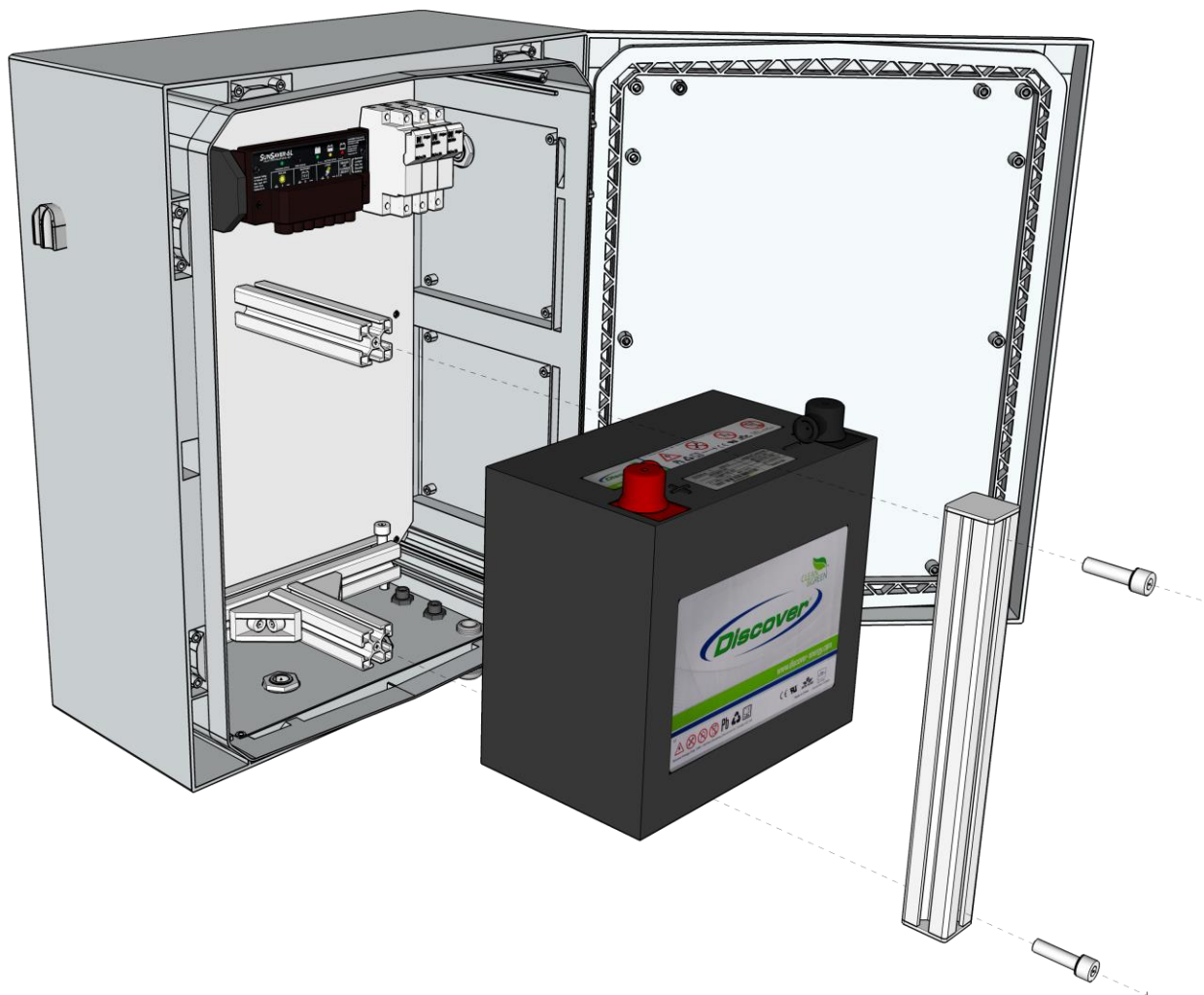
- ✓ available at 12V with battery from 33 to 300Ah
- ✓ available at 24V with battery from 33 to 100Ah
- ✓ solar modules from 25 to 320Wp
- ✓ quick plug MC4 type into box
- ✓ can be installed on a pole with diameter from 50 to 102 mm
- ✓ the box and solar field are separated in order to simplify the installation and permit to choose different position for solar panel and box
- ✓ the solar panel and the box can be also fixed to a wall

The polycarbonate box has original IP66 characteristic, but because the four standard ventilation outlets is derated to IP33, as per CEI EN 50272-2.

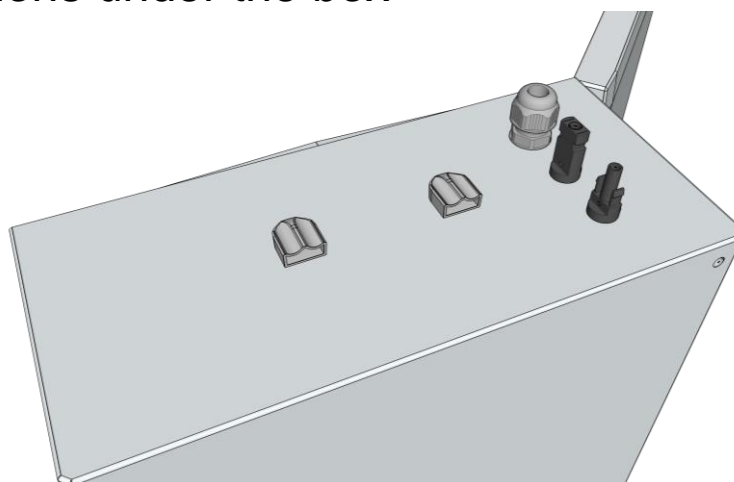
The standard version is supplied with Morningstar SunSaver solar controller, other controllers are available as option:

- ✓ SunSaver MPPT with ModBus communication
- ✓ SunLight with light sensor and timer
- ✓ others on required

## Battery sturdy fixed to the mounting plate



## Connections under the box





## Configurations

### 12V versions

item	Box	Solar panel	Solar controller	Battery
1003289	1 x ARCA 504021	max 80W 36 cells	SunSaver 6L 12V	33Ah 12V AGM
1003260	1 x ARCA 504021	max 80W 36 cells	SunSaver 6L 12V	58Ah 12V AGM
1003267	1 x ARCA 504021	max 160W 36 cells	SunSaver 10L 12V	85Ah 12V AGM
1003261	1 x ARCA 504021	max 160W 36 cells	SunSaver 10L 12V	100Ah 12V AGM
1003290	2 x ARCA 504021	max 160W 36 cells	SunSaver 10L 12V	2x58Ah 12V AGM
1003291	2 x ARCA 504021	max 320W 36 cells	SunSaver 20L 12V	2x85Ah 12V AGM
1003292	2 x ARCA 504021	max 320W 36 cells	SunSaver 20L 12V	2x100Ah 12V AGM
1003293	3 x ARCA 504021	max 320W 36 cells	SunSaver 20L 12V	3x100Ah 12V AGM

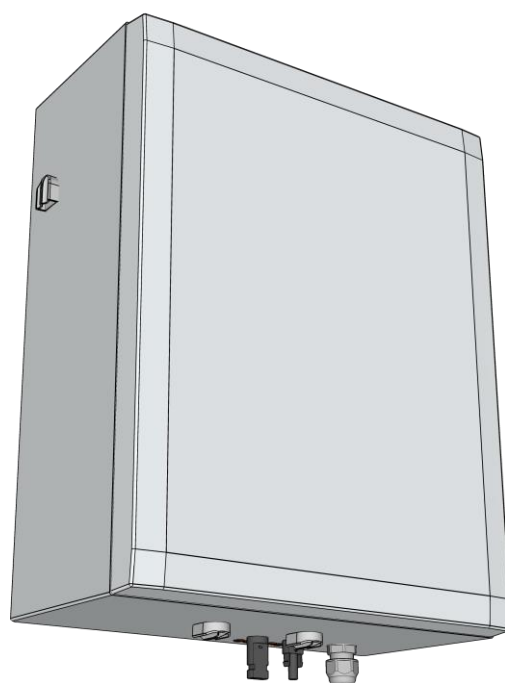
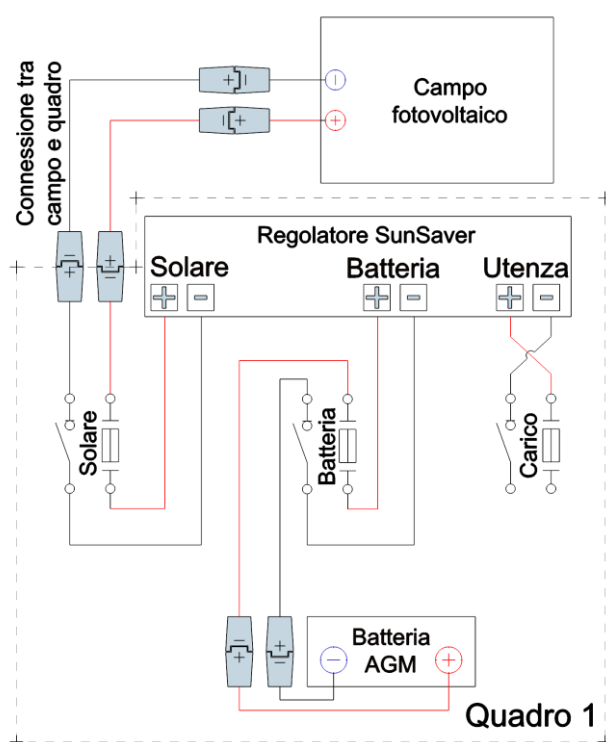
### 24V versions

item	Box	Solar panel	Solar controller	Battery
1003319	1 x ARCA 504021	max 320W 72 cells	SunSaver 10L 24V	33Ah 24V AGM
1003309	2 x ARCA 504021	max 320W 72 cells	SunSaver 10L 24V	58Ah 24V AGM
1003320	2 x ARCA 504021	max 320W 72 cells	SunSaver 10L 24V	85Ah 24V AGM
1003321	2 x ARCA 504021	max 320 W 72 cells	SunSaver 10L 24V	100Ah 24V AGM

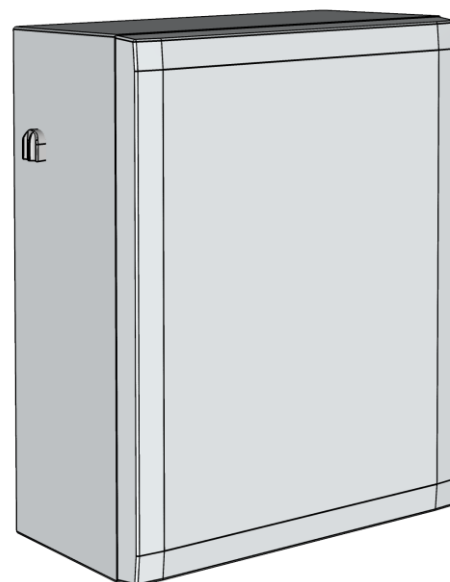
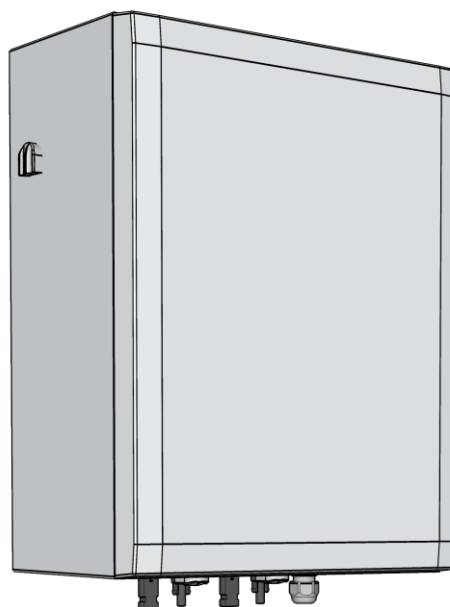
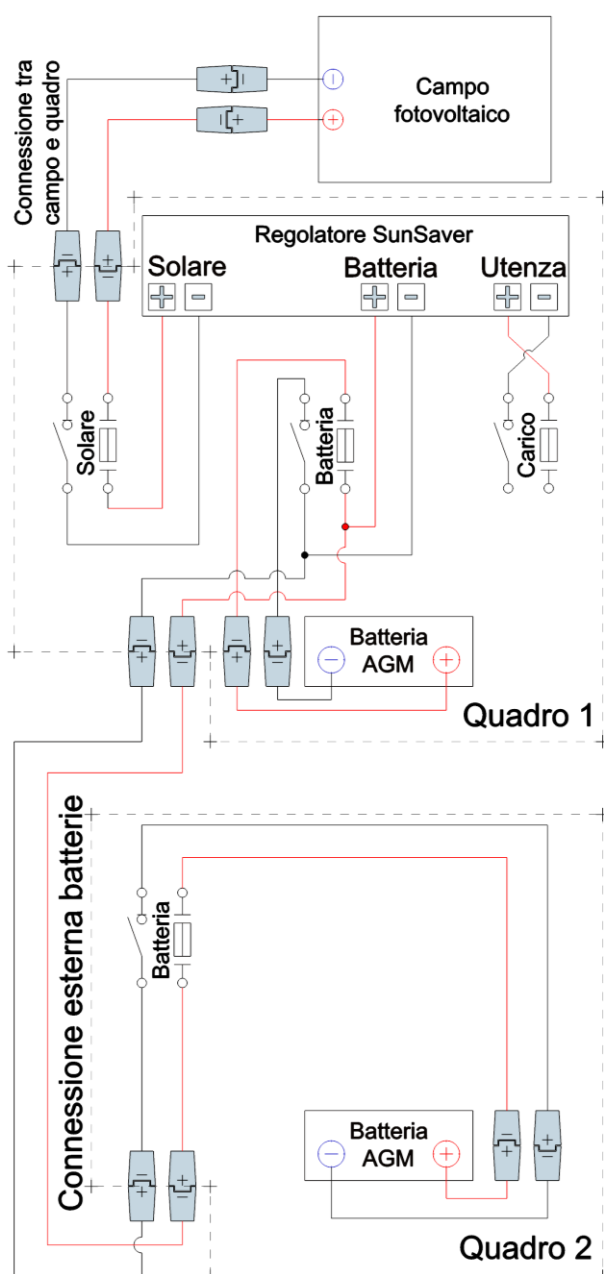


## Wiring diagrams

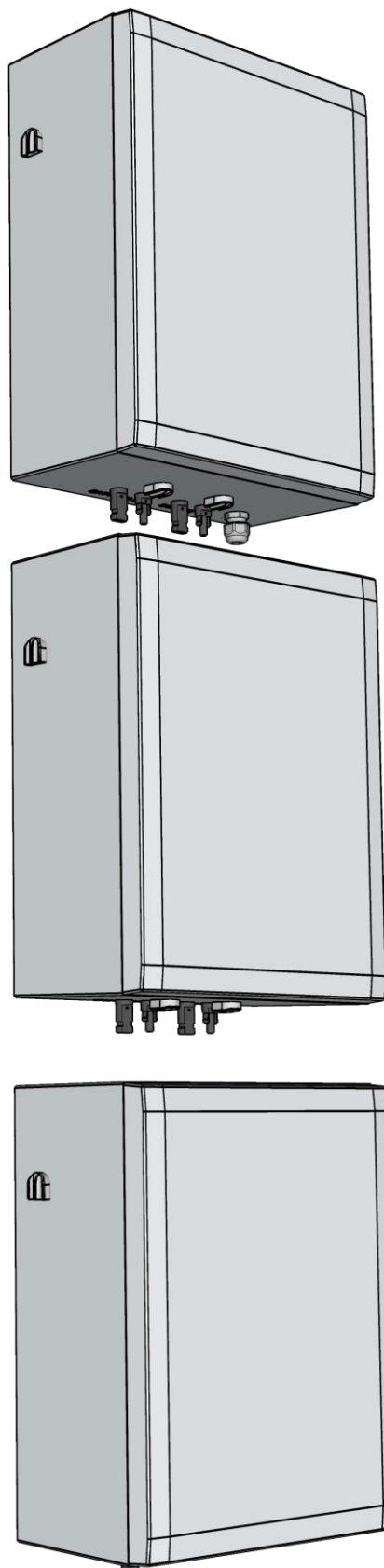
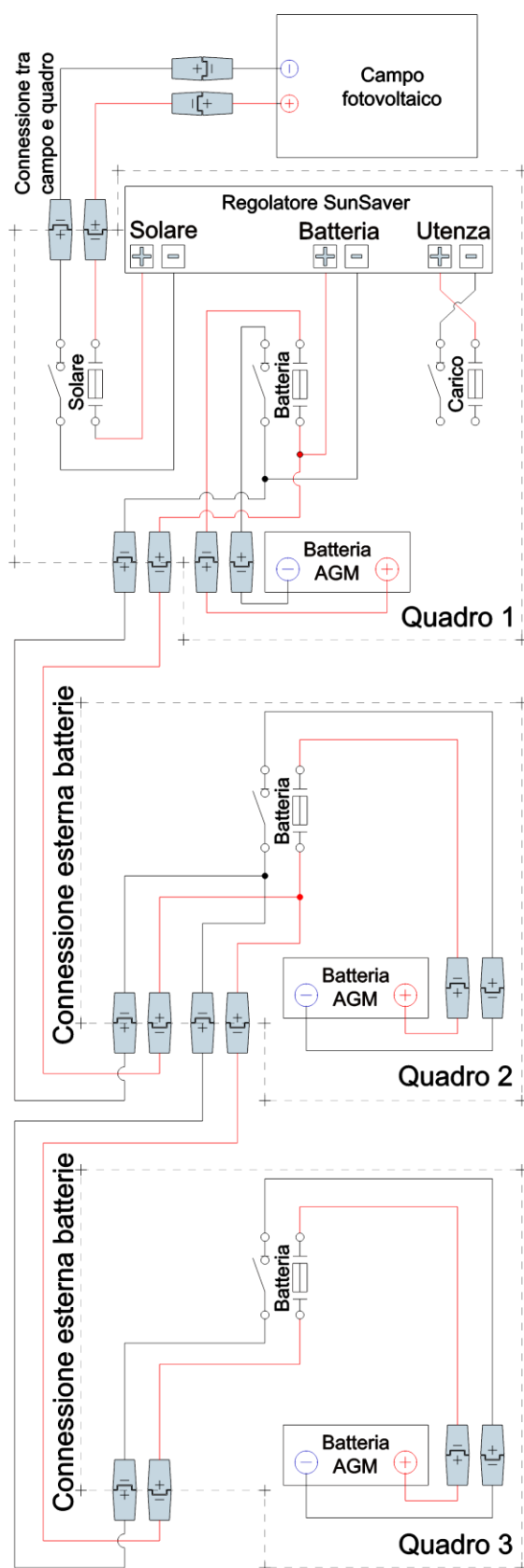
Schema elettrico a 12V  
un quadro, una batteria



# Schema elettrico a 12V due quadri, due batterie

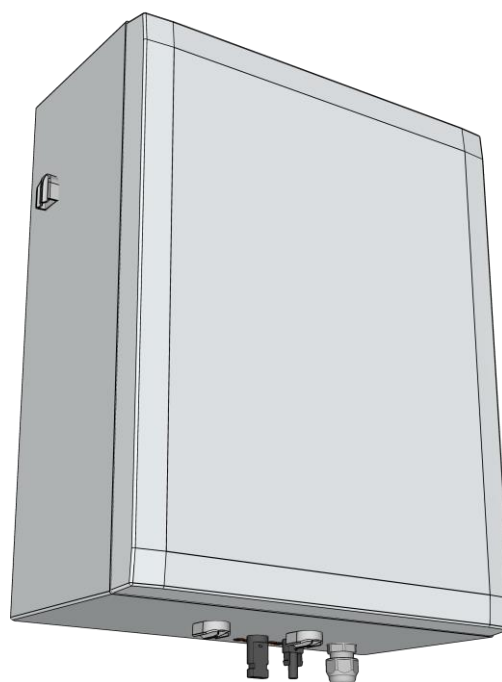
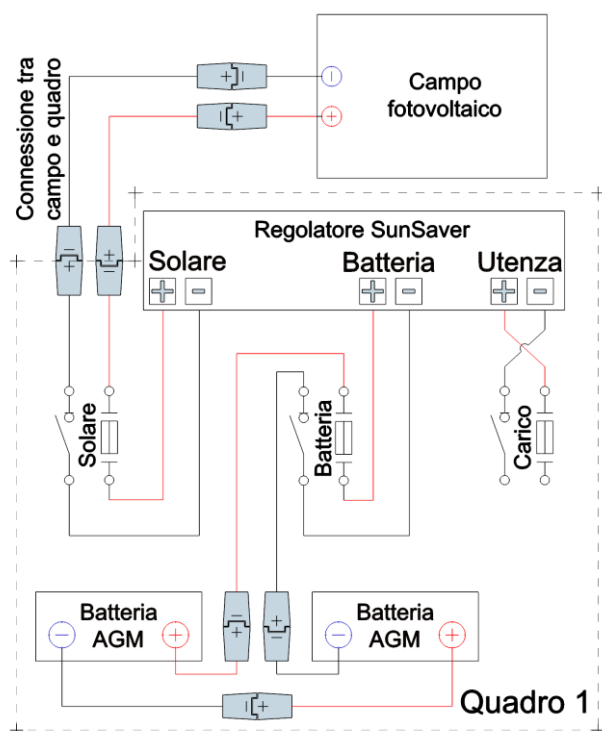


**Schema elettrico a 12V  
tre quadri, tre batterie**

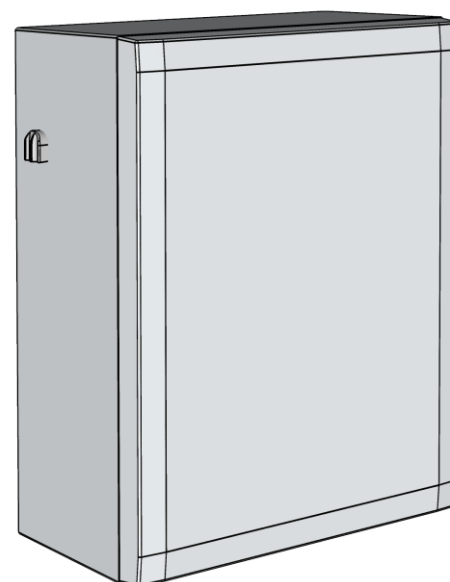
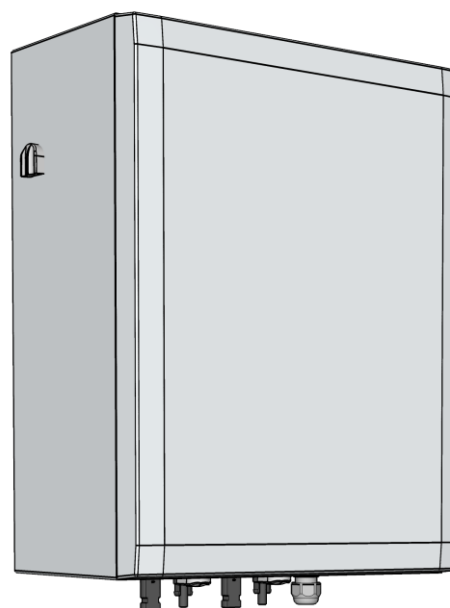
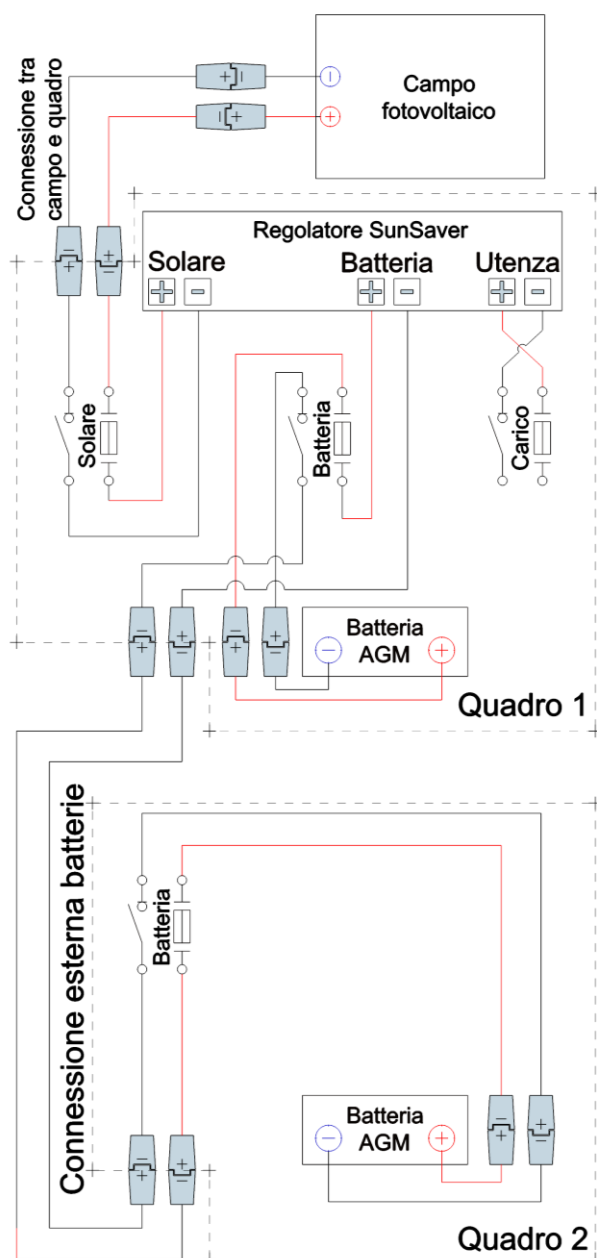




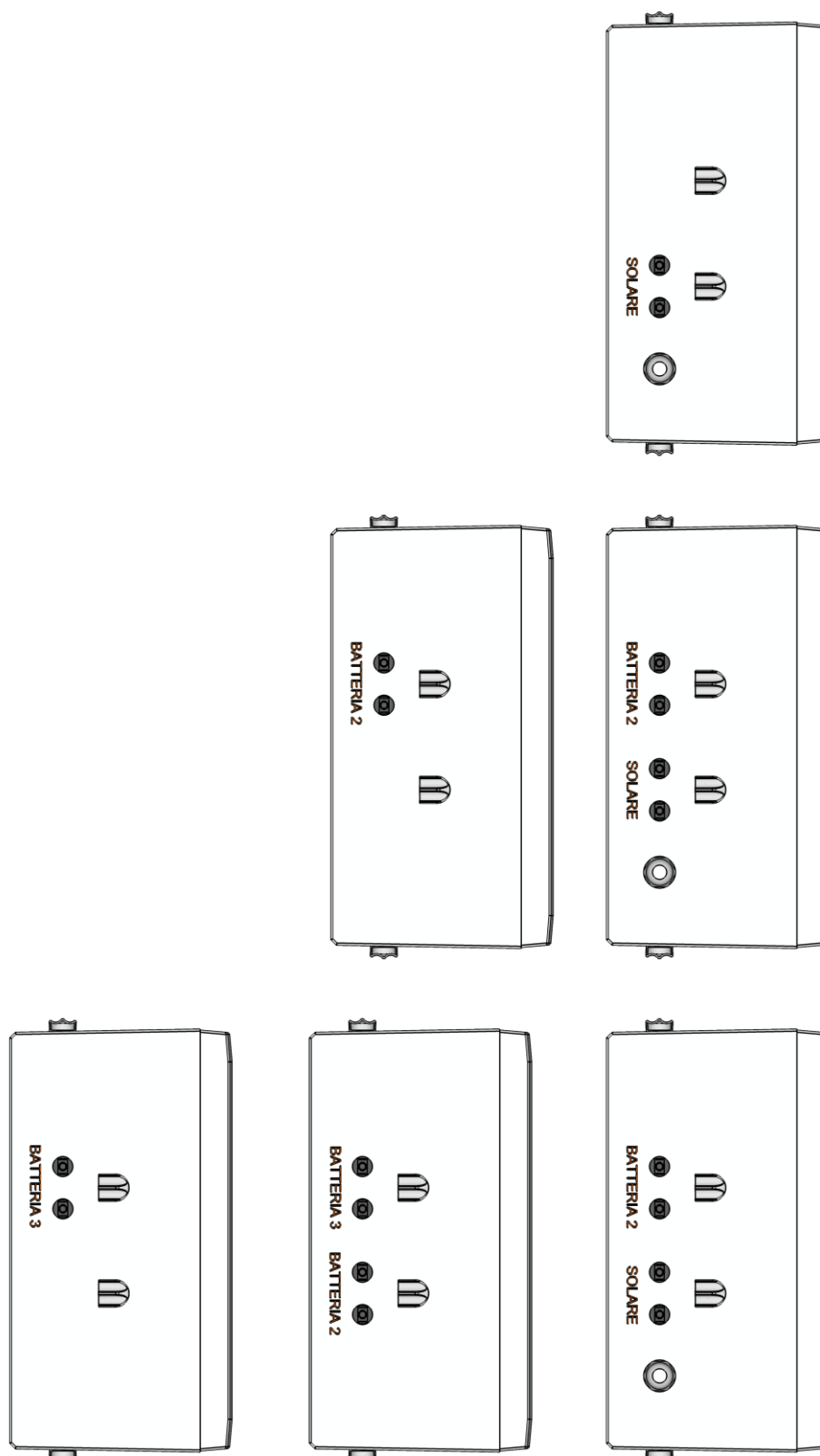
**Schema elettrico a 24V  
un quadro, due batterie**



# Schema elettrico a 24V due quadri, due batterie



## Bottom view of the boxes



## Plug and play, starts with openable fuses OPEN

1. connect the own device to be powered to the terminals below of the openable fuse "Load".
2. connect the internal plugs of the battery and the external plugs of the solar panel to the box "Solar field".
3. for the system that have more than one box connect the plugs "Battery" below the box to parallel the batteries in 12V system, or to wire the batteries in series in 24V system.  
WARNING: pay attention during the plugging. To connect the plugs in wrong way will damage the solar controller.
4. close the openable fuse "Battery" (or the openable fuses in the system with more than one battery), the led on the solar controller will lit to confirm the right start up.
5. close the openable fuse "Solar", the led "charging status" will lit after few seconds if solar energy is available.
6. close the openable fuse "Load" to power the own device.

### Note:

- fuses are ceramic type, size 10 x 38 mm
- convention: the energy is present above the openable fuse

**Ceramic fuses  
12V version**

Item	solar (A)	battery (A)	load (A)
1003289	6	6	6
1003260	6	6	6
1003267	16	16	16
1003261	16	16	16
1003290	16	16	16
1003291	25	25	25
1003292	25	25	25
1003293	25	25	25

**Ceramic fuses  
24V version**

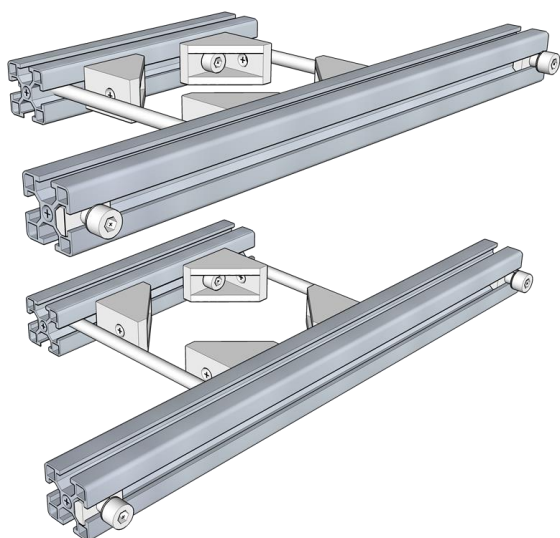
Item	solar (A)	battery (A)	load (A)
1003319	16	16	16
1003309	16	16	16
1003320	16	16	16
1003321	16	16	16



## Mounting options for boxes

### Item 1003011

Couple of mounting bracket in natural aluminium for box ARCA 504021 on 50 to 102 mm diameter pole.



### Item 1002985

Four wall mounting lugs for box ARCA 504021.



## Mounting options for solar modules

### Mounting on pole

Refer to our web catalogue “pole mounting”:

<https://www.heliant.it/fotovoltaici/catalogo-79124/strutture-montaggio-moduli/installazione-su-palo-moduli-fotovoltaici>

### Mounting on wall

Refer to our web catalogue “wall mounting”:

<https://www.heliant.it/fotovoltaici/catalogo-79124/strutture-montaggio-moduli/installazione-a-parete-moduli-fotovoltaici>

## Empty option box

### Item

1002984	Box Arca 504021 (empty)
1002982	Metal mounting plate

## Box option for IP66 characteristic with PTFE vent

### Item

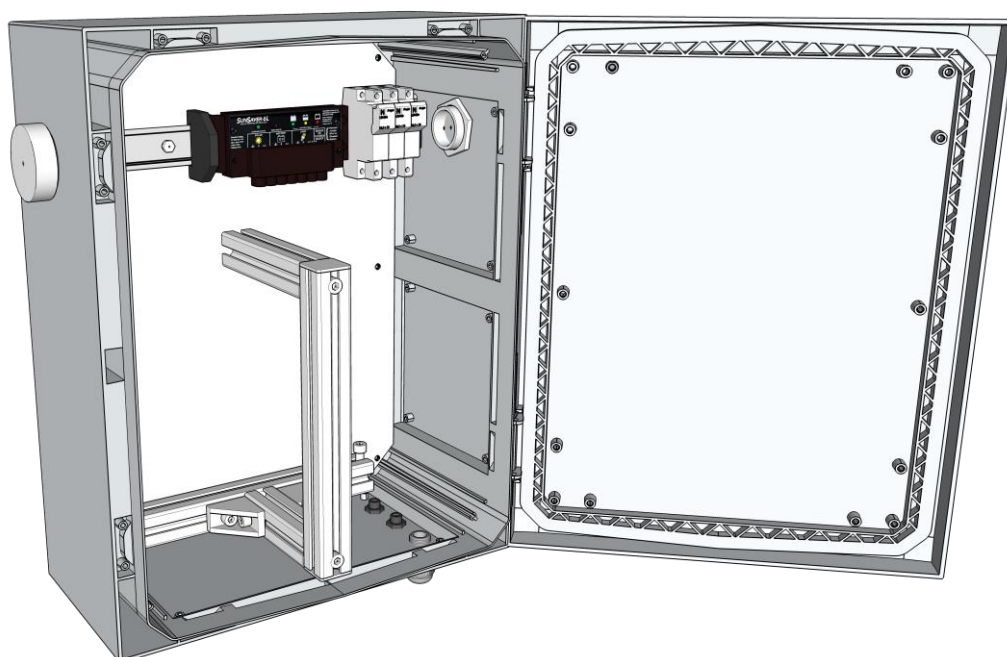
- |         |   |
|---------|---|
| 1003323 | <p>Couple of venting elements IP66</p> <ul style="list-style-type: none"> <li>- 60 mm diameter (40 mm hole)</li> <li>- body PA66 UV resistant</li> <li>- temperature range -35 to +70°C</li> <li>- air permeability 1200 l/h at a differential pressure of 70 mbar</li> </ul> |
|---------|---|



The IP66 execution ensure the waterproof characteristic also in hars environment conditions.

The low exchange of air allowed by the IP66 protection causes box internal temperature increase.

As a consequence, the battery works at higher temperature vs the IP33 execution of the box. This reduce the life of the battery to less than the 5 years that are considered the battery life in the box IP33 execution.







## Maintenance

### *Annual inspection:*

- check the tightening of all the screws in the structure of the solar modules and in the brackets of the box.
- check the status of cables and plugs. Have not to show abrasions or ruptures around the insulation material.
- read the voltage of each battery with a multimeter. In the system with more batteries in 24V configuration the difference of voltage between batteries should not to be over 4%.
- check the glass of solar modules, in case of dirty surface clean with water and glass cleaner.
- check that the ventilation outlets are free from dirty, insects, leaves.

### *Each five year or less (depending from the average temperature of battery):*

- replace all the batteries of the system with other identic batteries

## Warranty of Energy System

- Five year warranty for all the components of the Energy System.
- The five year warranty for the battery is applicable only if:
  - the sizing of the Energy System was calculated or approved by our technical office, based on the information provided from the buyer:
    - nominal voltage of the system
    - total daily energy consumption
    - location of the system communicated with a marks place .kmz file of Google Earth
    - average battery temperature must be below 28°C
  - the system started to work within six months from the delivery
  - we have received pictures of the installation
- in case of failure, the components recognized as defective will be repaired at our site or replaced, according to our judgment
- warranty exclude any cost derived from a product failure, e.g. delivery cost, time lost, any other direct or indirect damage due to the Energy System failure

product manager

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1995 – 2019  
24 year experience  
in Off-Grid

