

# INSTALLATION MANUAL





KIT **Frog**<sup>®</sup>+ FORCED  
by Sunerg Solar

KIT **Frog**<sup>®</sup>+ WITHOUT BOILER  
by Sunerg Solar

KIT **Frog**<sup>®</sup>+ NATURAL  
by Sunerg Solar



## Meaning of symbols

|                                                                                   |                                                                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|  | Failure to comply with these instructions carries a risk of death by voltage.                                        |
|  | Failure to comply with these instructions may cause serious health damage, e.g. burns or serious injury.             |
|  | Failure to comply with these instructions may cause serious damage to the control unit, to the plant or environment. |
|  | Particularly important information for the operation and optimal use of the plant.                                   |


## General Instructions

This technical documentation and assembly instructions, contain basic and important information regarding safety, installation, setting, maintenance and optimal use. Therefore these instructions must be fully read and understood by the specialist installer/technician and the system user before installation, start-up and operation of the unit. Applicable safety regulations, reference laws, applicable DINEN standards and installation and operating instructions of the components that are part of the system must be observed. Assembly, electrical connection, start-up and maintenance of the equipment must be carried out only by qualified technicians.

Always keep this documentation close to the product.

### Modifications on the equipment

- Modifications or additions are not permitted without the written consent of the manufacturer.
- It is also prohibited to install add-ons which have not been tested by the producer.
- The electrical resistance has been specially designed for this purpose and cannot be replaced by other electrical resistances.
- Any component or accessory which is not in perfect condition must be immediately replaced with an original product.
- The photovoltaic modules used cannot be increased or decreased as quantity and can not be replaced unless after the manufacturer authorization and in any case with modules of equal characteristics.

|                                                                                     |                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|  | Modifications to the equipment may compromise the safety and operation of the entire system |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|

### Warranty and Liability

The whole system is covered by warranty as described below:

- 2 years for electrical parts
- 5 years for the boiler
- 25/30 Years for photovoltaic modules.

The warranty and liability does not, however, include any damage to persons or material attributable to one or more of the following causes :

- \* Failure to observe these installation and operation instructions
- \* Incorrect installation, start-up, maintenance or use
- \* Repairs carried out improperly
- \* Unauthorised structural changes to the system
- \* Installation of add-ons not tested by the manufacturer
- \* Any damage resulting from prolonged use, despite there is an objective defect
- \* Failure to use original components and accessories
- \* Use of the system for purposes other than that for which it was manufactured
- \* Operation above or below the limit values listed in the technical specifications
- \* The system is not covered by warranty for problems caused by limestone
- \* Force majeure causes

## Electrical Resistance Installation



Before proceeding to the installation and connection of the electrical resistance read carefully and make sure that you have understood the following instructions.

## Boiler Installation (only for Frog+ Forced and Frog+ Natural)



- Place and fasten the boiler firmly on the wall by means of suitable brackets.
- Inside the boiler must be inserted the photovoltaic electrical resistance (this resistance must not be connected to the grid of the distributor) the same is already equipped with thermostat 90°C.
- To connect the cables of the resistance to the line coming from the photovoltaic through suitable junction box, it is advisable to provide between the photovoltaic and the resistance a suitable magnetothermic protection or fuses.
- The connection to the grounding system is mandatory.
- Connect on the appropriate connections, the cold water inlet and hot water outlet.
- The installation of a thermostatic mixer is mandatory if there are high temperatures.

## Photovoltaic Modules Installation



-The amount of photovoltaic modules ranges from 2 to 4 , depending on the model of the system

| Componenti<br>Components                                                                | KITFROG_F150/2 | KITFROG_F200/3 | KITFROG_F300/3 | KITFROG_F300/4 |
|-----------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|
| <b>Moduli Fotovoltaici (n.)</b><br>Photovoltaic Modules (n.)                            | 400/450 Wp (2) | 400/450 Wp (3) | 400/450 Wp (3) | 400/450 Wp (4) |
| <b>*Resistenza elettrica intelligente 1*</b><br>Intelligent electric heating element 1* | RCF2           | RCF3           | RCF3           | RCF4           |
| <b>Bollitore doppio serpentino HBW</b><br>HBW Tank with 2 coils                         | HB150W         | HB200W         | HB300W         | HB300W         |
| <b>**Telaio per tetto inclinato (n.)</b><br>**Frame for slanted roof (n.)               | ALUFIXECO (2)  | ALUFIXECO (3)  | ALUFIXECO (3)  | ALUFIXECO (4)  |

- The modules must be fixed by qualified personnel, in compliance with the installation rules for photovoltaic systems.
- Module structure must be grounded with suitable fasteners, not supplied as standard

## Electrical connections and warnings



- Electrical connections can only be made by a qualified technician, in compliance with the relevant regulations.
- Modules must be connected in series, for the connections use special connectors (PV4 or MC4).
- Connect the panels to the resistance by means of a solar cable with a minimum cross-section of 4mmq, taking into account the distance between the photovoltaic modules and the boiler.
- Arrange between the modules and the boiler a suitable magnetothermic protection or fuses.
- The panels exposed to the Sun are always under electric tension so be careful in placing the connections.

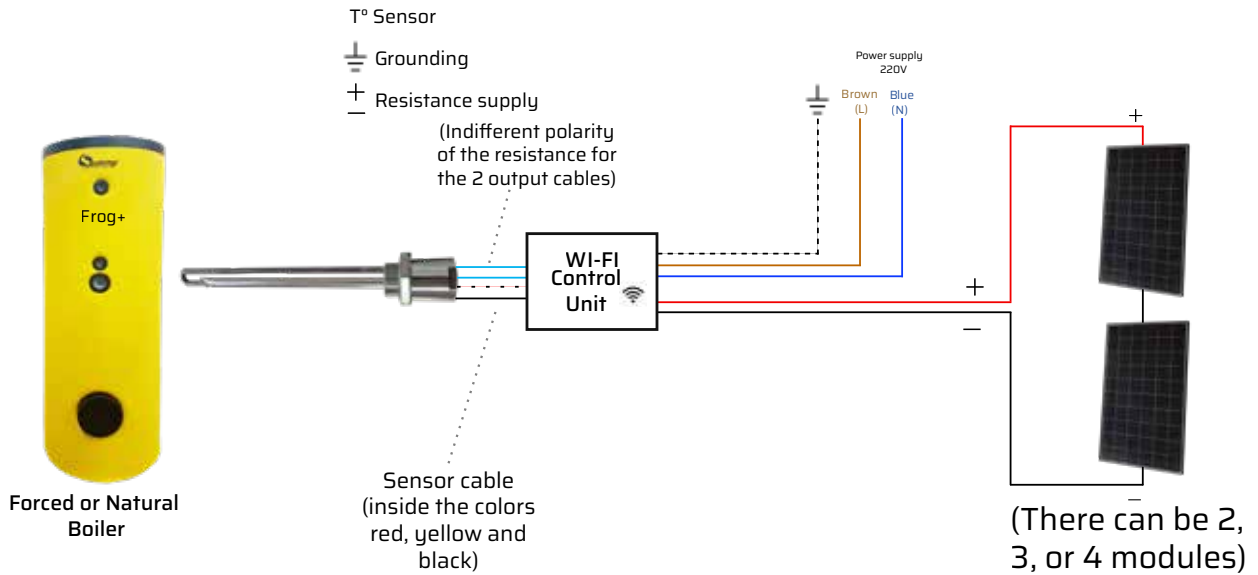
## Electrical Connections

Electrical connections with connectors supplied as standard. Electrical cables :  
1.5 mm section for resistances that ranges from 125 W to 165 W;  
2.5 mm section for 85 W resistance.

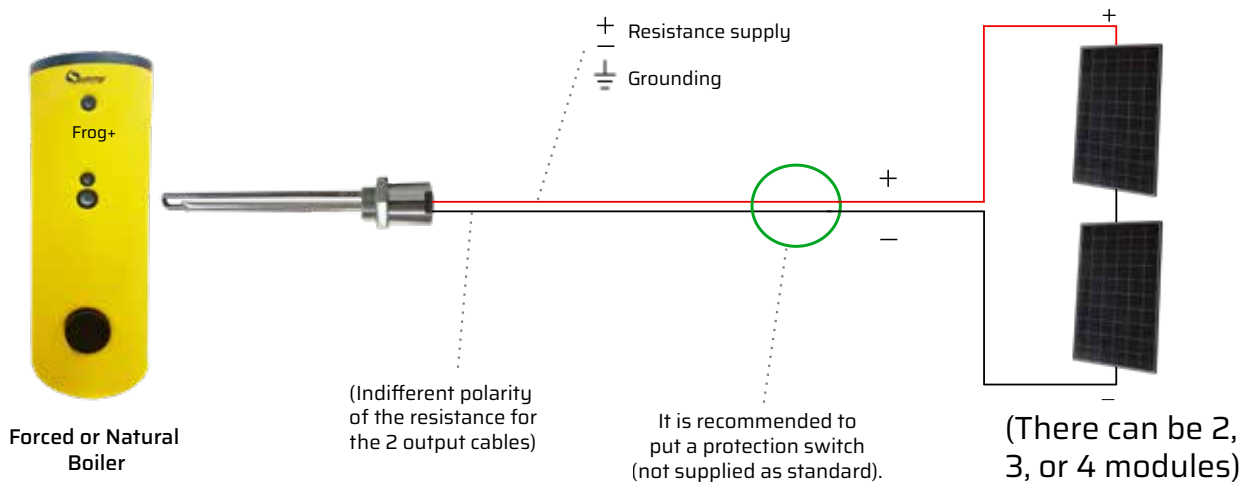
## Hydraulic Connections

For hydraulic connections refer to the specific boiler manual.

## Example of electrical installation with WI-FI control unit



## Example of electrical installation without WI-FI control unit

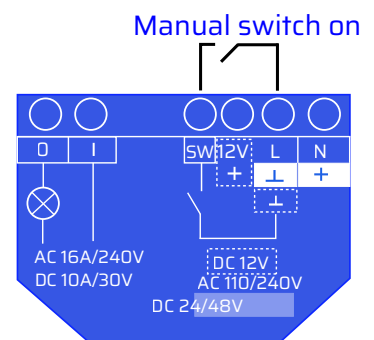


In case of manual switch on (lack of Wi-Fi connection) put the unipolar switch between the clamps "L" and "SW" of the Shelly plus 1. See diagram.

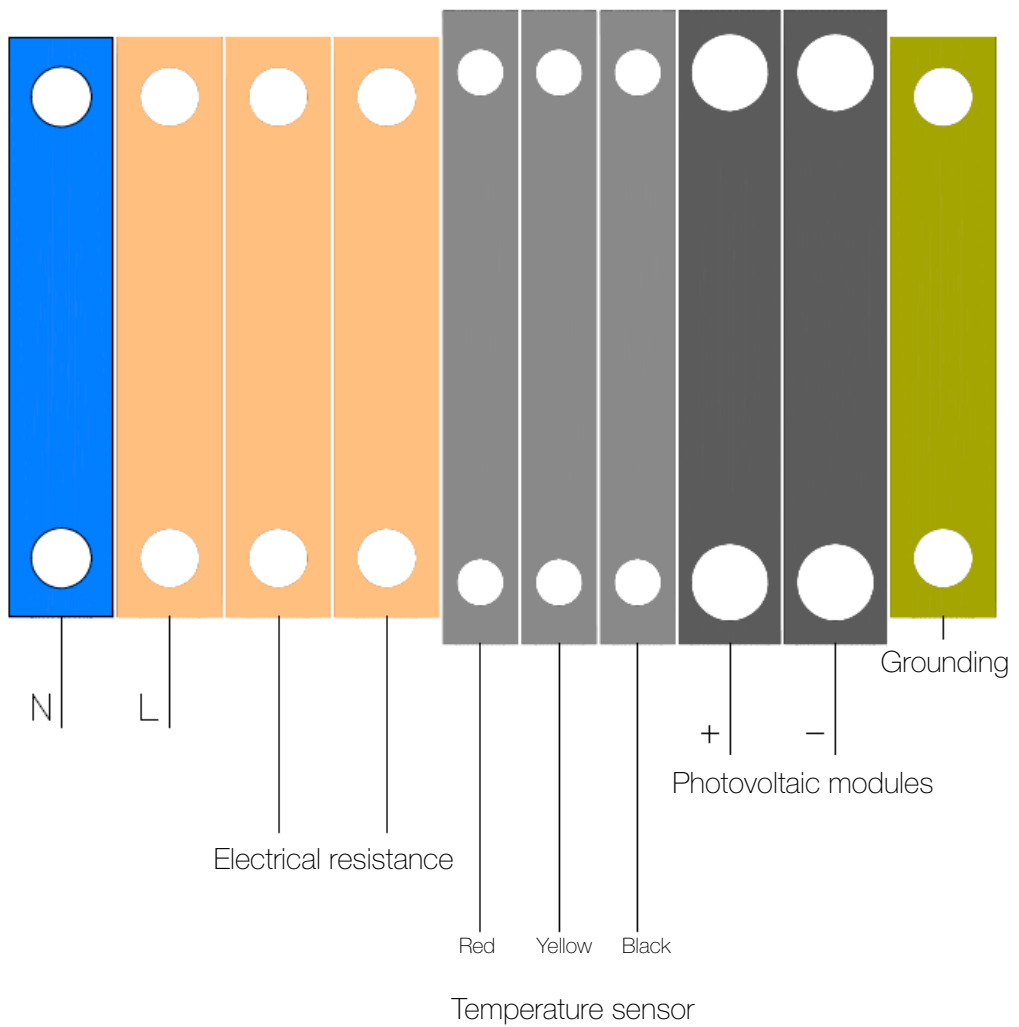
Attention: the Add-on module is used for temperature regulation.

It is mandatory for the user to set it before starting the system (follow the instructions on the Frog\_App guide).

If the user does not have the ability to connect it to Wi-Fi, he must necessarily configure the Shelly in a place where there is Wi-Fi, or via hot-spot of the smartphone. The Shelly can also work offline, disconnecting the resistance when the water temperature exceeds 80 °C but must necessarily be configured previously via app.



# Control unit electrical connections





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