



Installation Manual  
3-phase connection  
with solar panels  
Version 1.0.1

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# Introduction

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The Smappee monitor is a device that measures the energy consumption of your electrical appliances with one sensor close to the fuse box. The sensor is clamped to the main cable and records the energy use. The various devices are recognized by their energy signature or the electrical traces they leave. If you have solar panels, you can also use the Smappee monitor to measure the energy generated.

The Smappee monitor is installed close to the fuse box. It then starts measuring your energy consumption and the yield of your solar panels as well as communicating with your smartphone or tablet. The Smappee app gives you direct insight in your energy consumption, energy costs and the yield of your solar panels. To save on energy costs and contribute to a greener environment, you can take on energy guzzlers and standby power.

This manual describes the installation of the Smappee monitor. All information about the WiFi configuration of the Smappee monitor and the use of the Smappee app can be found in the *Smappee user's manual*.

# Read before use

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## Warnings

Please observe the following safety precautions to avoid possible electric shocks, fire, or personal injury:

- Use the product only as specified as otherwise the safety of the product is not sufficient.
- Do not use the product in environments with explosive gas or vapours, nor in damp or wet environments.
- Do not use damaged power cords and cables. Check the power cords and cables for damaged insulation and exposed metal. Check the connection of the power cords.
- Use only the power cord and cables that are supplied with the product.
- Do not use the product if it is damaged.
- Repairs should only be done by authorized technicians.
- Do not open the product. There is a potential for exposure to hazardous voltage.
- Use only specified replacement parts.
- Do not connect the product to a voltage higher than 240 V.
- Turn off the main power switch before you start the installation of the product.
- Follow local and national safety regulations for installation and use of electrical equipment.

## Maintenance

- Clean only the outside with a dry, clean cloth.
- Do not use abrasive agents or solvents.

## Technical specifications

- Dimensions: 16 cm (L) x 10 cm (W) x 3,5 cm (H)
- Weight: 300 grams
- Wi-Fi 802.11 b/g/n 2.4 GHz
- Work temperature: 5°C to 40°C
- Storage temperature: -10°C to 60°C
- Relative humidity: 80% 0°C to 40°C
- Sealing IP 20.
- Work altitude: 0 to 2.000 meters
- EMC: EN 55022 (Class B)
- Safety: EN61010-1 Ed 3.0 (2010-06), EN61010-2-032 Ed 3.0 (2012-09)
- Overvoltage category: 300 V/CAT II
- ~110/240V 50/60Hz Max 5W
- Current clamps: 50A

# Connecting the Smappee monitor

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Attention! Before you can connect the Smappee monitor you must first connect it to your Wi-Fi network as described in the *Smappee user manual*.

For the connection you need:

- The Smappee monitor.
- The power cord, the 6 power clamps and the 3 V-cables supplied with the monitor.

## Important remarks

### 1. Correct connection

When connecting the current clamps it is **very important** that the respective phases of the grid and the inverter are respected. We recommend to label the cables of the current clamps: L1, L2, L3 for the grid phases and S1, S2, S3 for the corresponding phases of your inverter.

This connection requires a basic knowledge of electrical installations. If necessary, ask for the support of an electrician.

### 2. Space in the fuse box

6 power clamps will have to be installed in your fuse box. First check if there is enough space available in the fuse box.

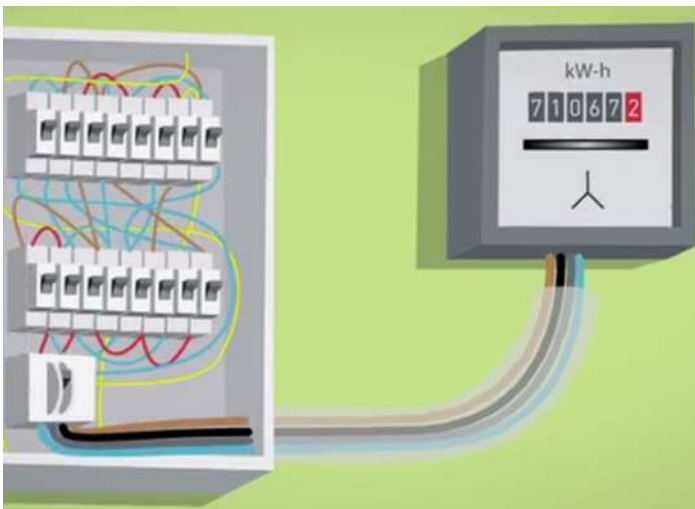
## Three-phase connection with solar panels

The following steps describe the three-phase connection with solar panels.

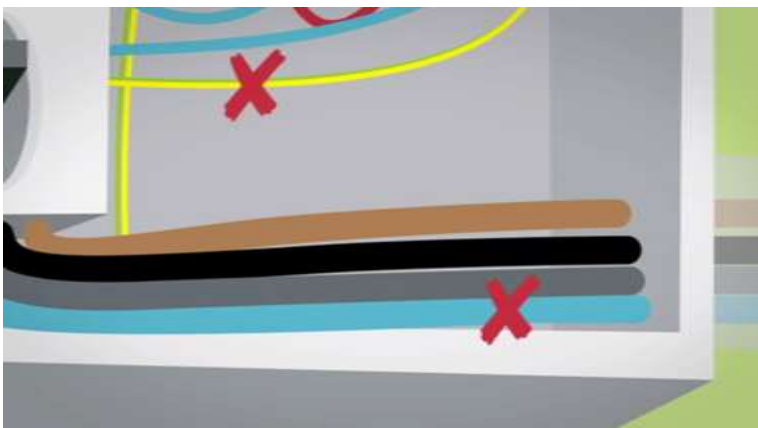
Preparation: You have already connected your Smappee monitor with your Wi-Fi network (green heartbeat).

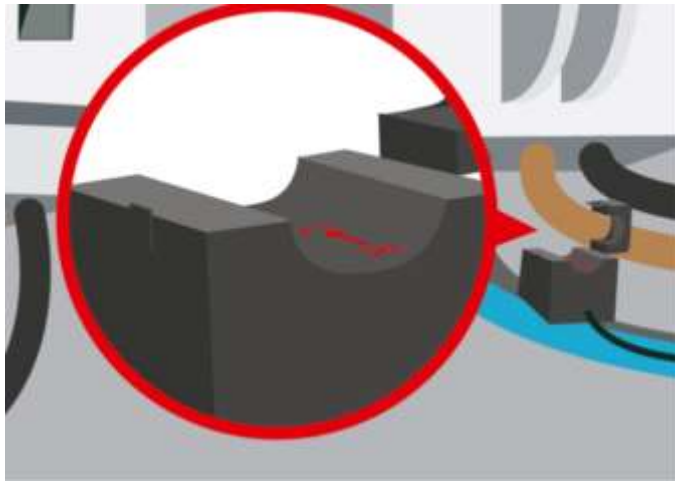
### Steps

1. Turn off the electricity.
2. Open the fuse box. You see 4 cables deriving from the electricity (kWh) meter. (colour of the cables: "brown, grey, black & blue" or "brown, 2 x black & blue")

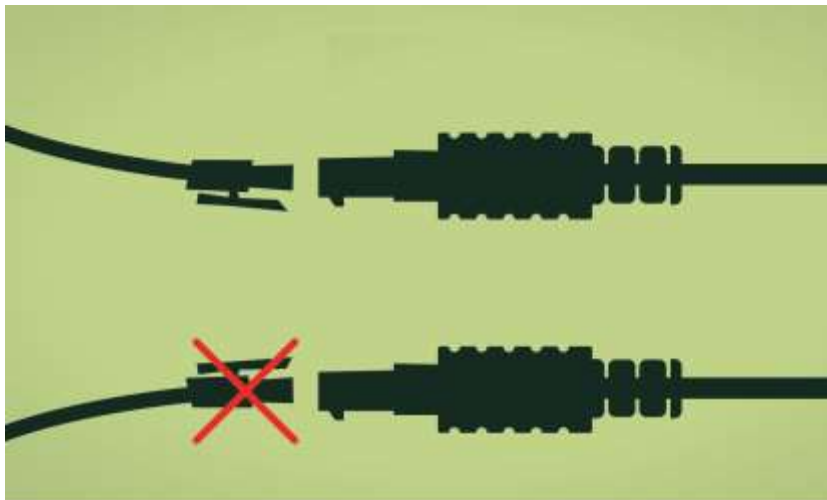


3. The phase wires are the brown, black or grey cables, the blue cable is the neutral conductor and the striped green/yellow cable is the ground wire.





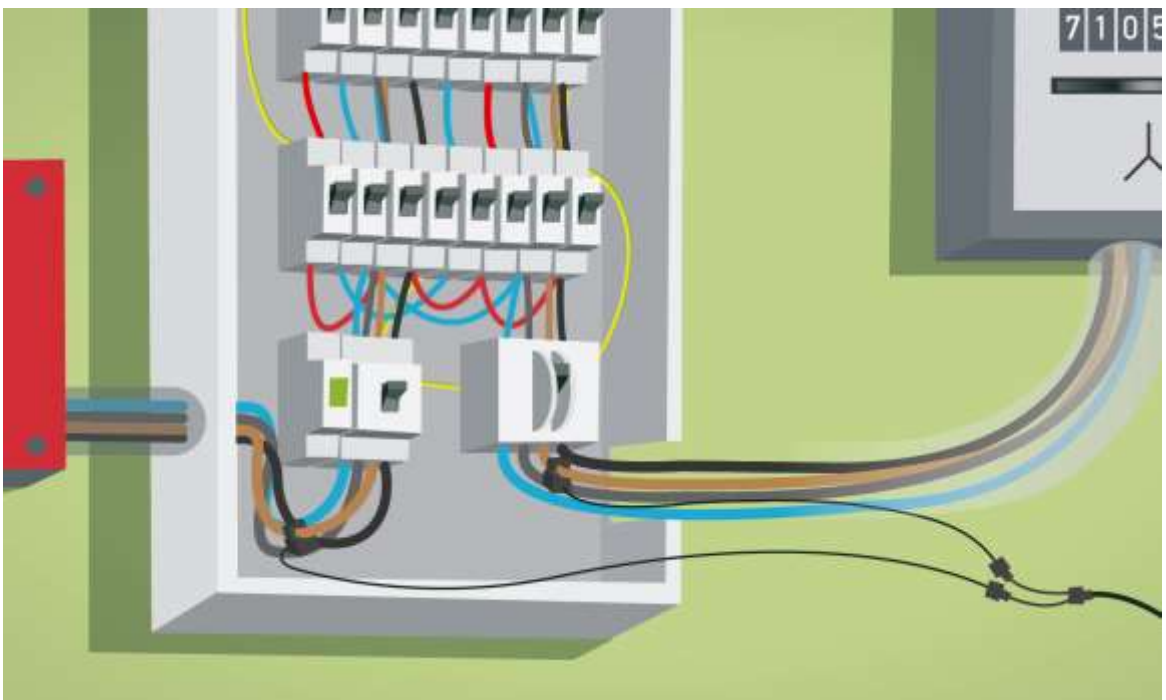
4. Place the power clamp over a phase wire and make sure that **L** points in the direction of the fuse box and **K** in the direction of the electricity meter. Make sure that you properly close the clamp by pressing your thumb on the side until you hear a click.
5. Plug the end of the clamp cable into the V-cable. Choose the connector without "Solar" mark. See the figure below for a proper connection.



6. Choose the **corresponding** phase cable from the inverter of your solar panels. **Proceed very carefully!** If you selected phase 1 (L1) in step 4 then you should now select the corresponding phase 1 of your inverter (S1). **If this is not properly done Smappee will not be able to measure correctly.** Put the current clamp over this phase cable and observe the right direction: **K** should point in the direction of your inverter and **L** in the direction of your fuse box.

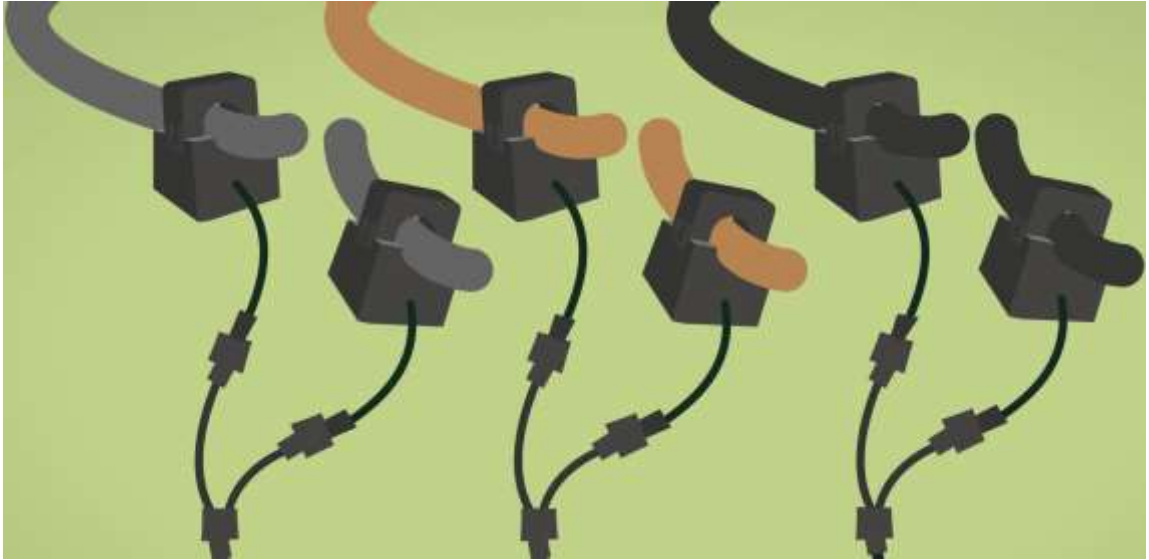


7. Plug the end of the clamp cable into the free connector of the V-cable, marked with "Solar". The result of step 4 to 6 can be seen in the figure below.

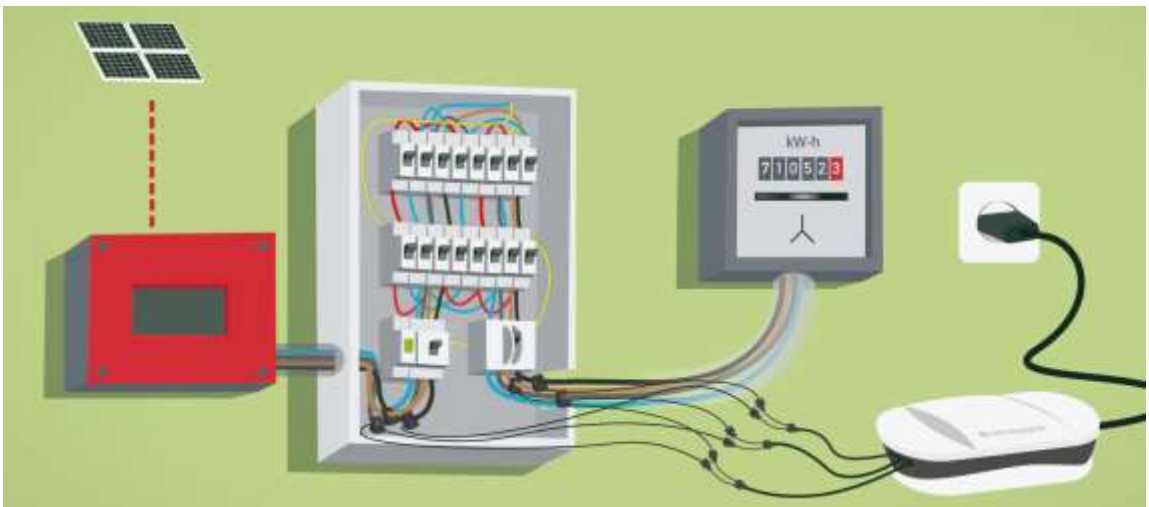




- Repeat step 4 to 7 for the two remaining phases.



- Then connect the 3 V-cables to the inputs 1, 2 and 3 of the Smappee. You can see the result in the figure below.



- Turn the electricity back on.
- Plug the power cord of the Smappee into the wall socket and wait until the monitor shows a green heartbeat.
- You can now get started with the Smappee app as described in the Smappee user manual.

NOTE: when using a 1-phase inverter in a 3-phase connection, you need to plug a clamp cable on every phase where current is injected.

# Declaration of Conformity

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October 5, 2013

We,  
Smappee nv  
Evolis 100  
8500 Kortrijk  
Belgium

following the provision of the following EC Directives:  
- 2006/95/EC The Low Voltage Directive  
- 2004/108/EEC The Electromagnetic Compatibility Directive

hereby declare that the product:  
Smappee monitor-e1

is in conformity with the applicable requirements of the following documents

\* Emissions:

Radiated Emission EN 55022 (Class B)  
Conducted Emission EN 55022 (Class B)  
EN 61000-3-2  
EN 61000-3-3

\* Immunity:

EN 55024  
EN 61000-4-2  
EN 61000-4-3  
EN 61000-4-4  
EN 61000-4-5  
EN 61000-4-6  
EN 61000-4-1

\* Safety:

EN61010-1 Ed 3.0 (2010-06),  
EN61010-2-032 Ed 3.0 (2012-09)

Authorized signatory



Hans Delabie  
Chief Operating Officer