



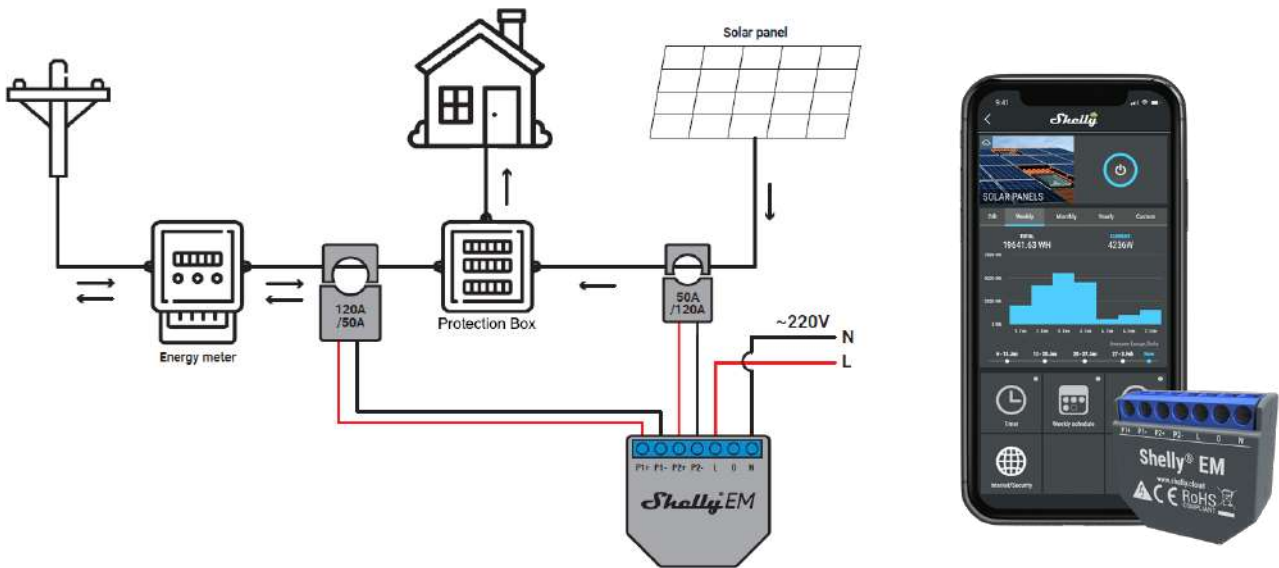
INSTALLATION MANUAL

INTEGRATION AND CONFIGURATION OF
SHELLY METER WITH TRYDAN

Electric Installation

Shelly single-phase model (*Shelly EM*)

This model allows us to simultaneously measure the consumption of our home and the power generated by our photovoltaic installation, in case we would need it. If we want Trydan to work in photovoltaic mode, we will need the following installation:



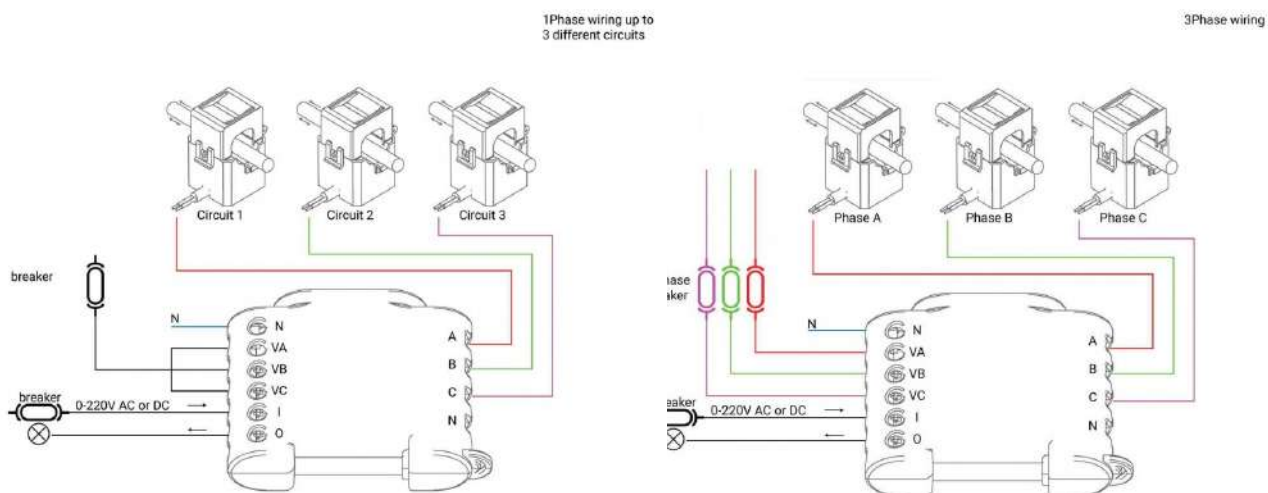
The **first** clamp should be placed on the **PHASE** of the general line of the household **coming** from your meter, with the arrow pointing in the direction of the current (towards the protection box). After that, we must connect the clamp to the pins **P1+ and P1-** of our single-phase Shelly. If we do not have a solar installation, we do not need to connect more clamps.

The **second** clamp should be placed on the **PHASE** of the PV supply line before entering the protection box, with the arrow pointing to it. We will connect the clamp to the **P2+ and P2-** pins of Shelly. This line normally comes out of an inverter that transforms the direct current of your plates into alternating current to be able to inject it into the network or to use it in your home.

There is no need to worry too much about the direction of the clamps, because after configuring Shelly we can see their measurements and make sure that they are correctly positioned. If they are not, we will place the clamp with the correct direction to solve the problem. Therefore, it is recommended not to seal the Shelly installation until we are sure that the measurements are correct.

Shelly three-phase model (*Shelly 3 EM*)

This model allows us to measure the consumption of a single three-phase line. If we want to use the photovoltaic mode, we need to complement it with the **V2C 1.0 slave**. The following diagram shows how to correctly connect both the three-phase Shelly and the **V2C 1.0 slave** in photovoltaic installations.



We can opt for two types of installation. The first one chooses to connect in the **VA, VB** and **VC** pins the same **PHASE** taking as reference the voltage of this one to make the calculations of the measurements of the three phases of the installation. The second one chooses to connect each of the **PHASES** that we want to measure in the pin corresponding to each clamp:

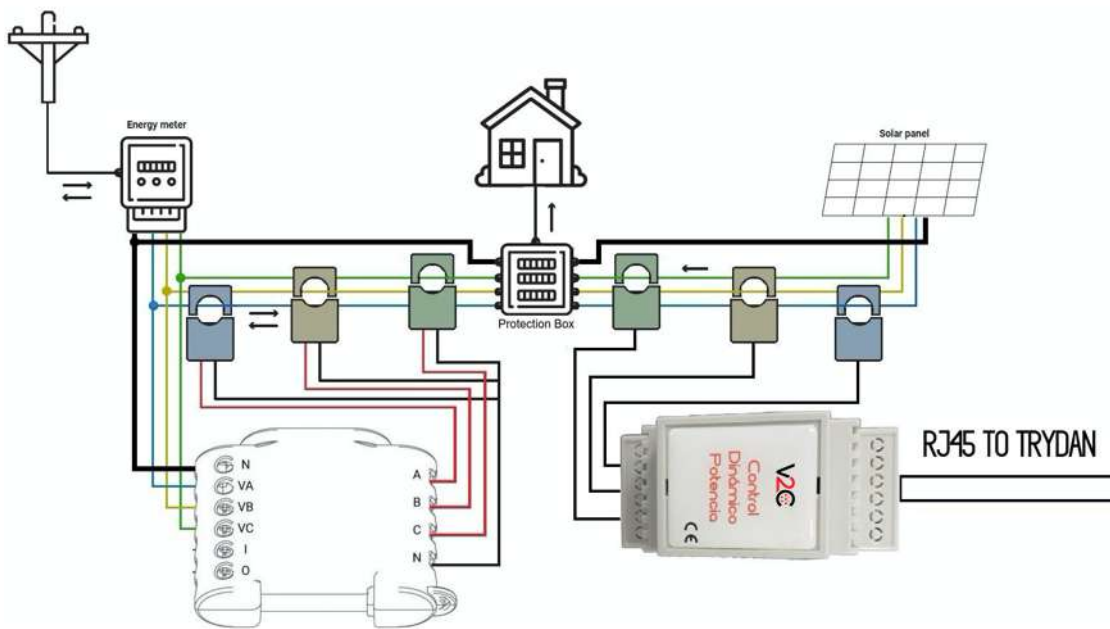
1. Phase of clamp **A** on pin **VA**
2. Phase of clamp **B** on pin **VB**
3. Phase of clamp **C** on pin **VC**

In any case, the **NEUTRAL** of the installation must be connected to the **N** pin above the **VA** pin and the clamps must be connected to the general line after the meter with their arrows pointing in the direction of the current.

The **V2C 1.0 slave** must connect its three clamps to each phase of the **PV** supply line coming from the inverter before of the junction box with the arrows pointing to the junction box.

The clamps of the **Shelly** should be connected to each phase of the general line coming from the meter before the junction box and with the arrows pointing to the junction box.

The following diagram shows in detail the joint wiring of the three-phase Shelly and the V2C 1.0 slave:



As we can see, the **V2C 1.0 slave** must be wired to Trydan with **RJ45** connectors, since it uses the **RS485** communications protocol.

Communication Configuration

This section will show step by step how to configure Shelly to establish communication with Trydan and allow to send the measurements data to Trydan. The V2C 1.0 slave does not need to be configured, just plug it into the e-Charger and the communication between them will be established.

Shelly Configuration

Once the installation is done, we will be able to configure Shelly's communication thanks to the Wi-Fi signal it generates. This process is exactly the same for both Shelly models. This configuration can be executed both from a smartphone and from a PC, since Shelly generates a local web page similar to that of a conventional router. We will use the configuration from the mobile app as an example.

To configure our Shelly, we must download the Shelly Cloud app and install it on our device. As an example we will use an android device: <https://play.google.com/store/apps/details?id=allterco.bg.shelly&hl=es&gl=US>



Shelly Cloud

Allterco Robotics EOOD Estilo de vida

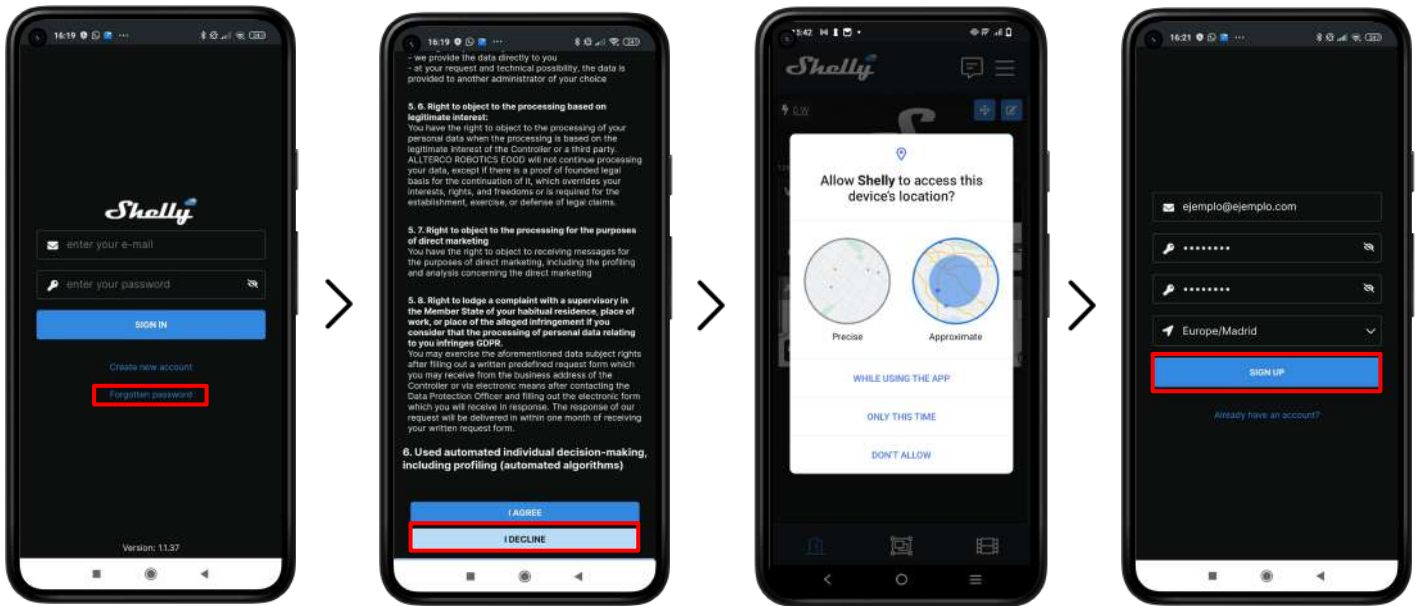
★★★★★ 3,975

Para todos

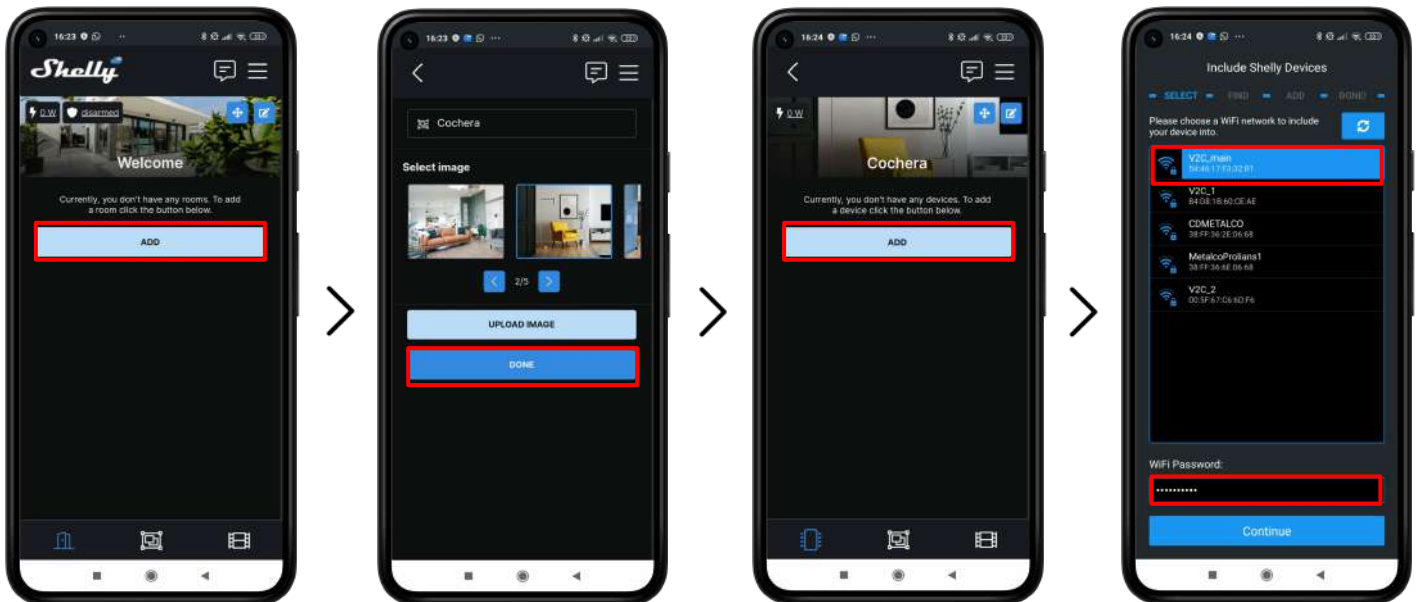
Esta aplicación está disponible para algunos de tus dispositivos

Instalada

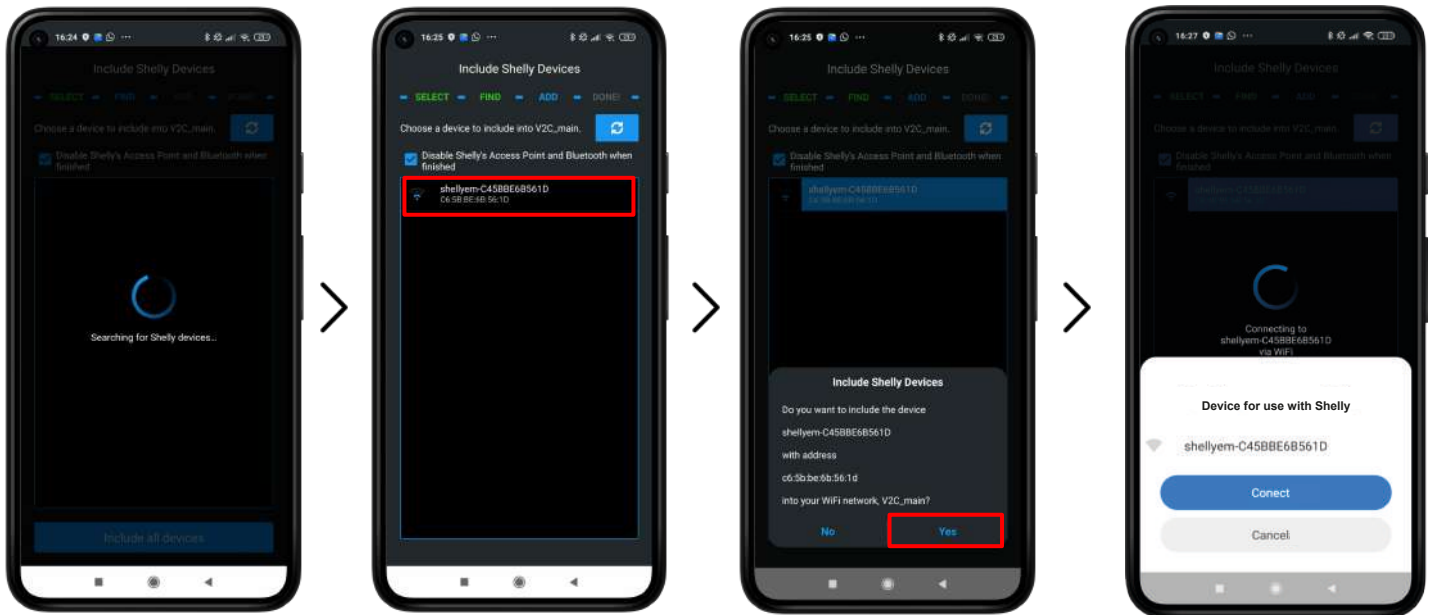
After installation, when we start the app, it will ask us for a username and password. We must create an account or enter our credentials if we already have one.



Click on **Create new account**, accept the conditions and permissions of the application and, finally, enter your email, password, and location.



Once we have entered the app, we must create a room by pressing **ADD**, choose a name and press **DONE**. The new room will allow us to include the Shelly by pressing **ADD**. The configuration menu will open where we will choose the **SAME NETWORK TO WHICH TRYDAN CONNECTS** and we will enter its password.



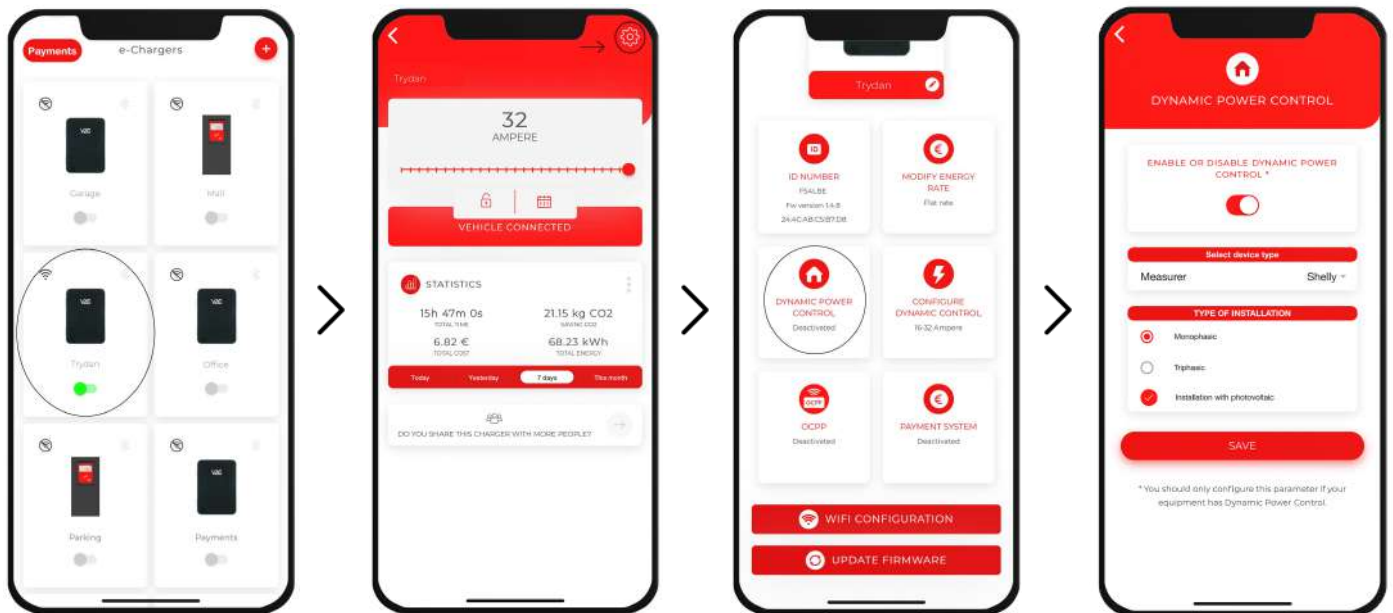
Once the correct Wi-Fi connection data has been entered, the application will search for nearby Shelly devices and display them on the screen. We will choose the device we want to configure, confirm and press connect. This last step may vary depending on the smartphone, in the current case it is Xiaomi. We must wait 2 to 3 minutes for the Shelly to restart and connect to our network.



This is how the app should look like when the installation is complete. We can observe that both the home ("**Shello**") and solar ("**2) Shello**") meters show a positive and reasonable consumption. If we see that the measurements are negative or too low, we should check the direction of the clamps.

Trydan Configuration

Once Shelly is configured, we open the V2C app where we can access our charger.



Enter the desired e-Charger and click on the configuration icon at the top right. Enter the **DYNAMIC POWER CONTROL** section and choose the Shelly as the slave type. After choosing whether our network is single-phase or three-phase and whether it includes a photovoltaic installation, we save the configuration. The Trydan will save the configuration and restart to apply these changes.

Final result

When Trydan finishes its startup, it will connect to Shelly and obtain the necessary measurements to vary the load intensity dynamically depending on the mode we have chosen. On the Trydan screen we will be able to see the measurements obtained:



Trydan will display an error message if it fails to connect to Shelly, check your connection and make sure that the two devices are connected to the same network. If the connection is correct, it will display the measurements.

CHARGING UP

YOUR TOMORROW

www.v2charge.com