How to use solar charging with Zaptec Sense

Zaptec app

Solar charging allows your Zaptec charging station to use surplus power from your own solar production when charging your car. It is intended for homes that already use Zaptec Sense for dynamic load and power management and want to use locally generated solar energy for electric vehicle charging.

This guide explains:

- What you need for solar charging to work.
- How to enable it in the Zaptec app.
- What “Surplus only” and “Surplus + grid” mean in practice.
- What to check if the modes do not appear or your car does not charge as expected.

Check whether your installation is compatible

Solar charging is currently available only for Home installations in selected markets and with specific hardware. Your installation must meet all of the following requirements:

- The installation is configured as “Home” in the Zaptec system, not Pro or another type.
- The installation is located in Germany, the Netherlands, Belgium, Luxembourg or Switzerland.
- The grid type is TN, single-phase or three-phase. IT grids are not yet supported.
- You have Zaptec Sense Generic or Zaptec Sense P1.
- Zaptec Sense HAN and TIC do not yet support this feature.
- Zaptec Sense measures power at the main connection, is online and runs the latest firmware.
- You have a Zaptec Go, Zaptec Go 2 or Zaptec Pro that is part of the Home installation.
- Your home has solar production that sometimes generates more power than the household consumes.
- You use the latest version of the Zaptec app.

If one or more of these conditions are not met, solar charging will not appear in the app.

How to enable solar charging in the Zaptec app

You enable solar charging in the Zaptec app. The steps differ slightly depending on whether Zaptec Sense is new or already installed.

For new installations

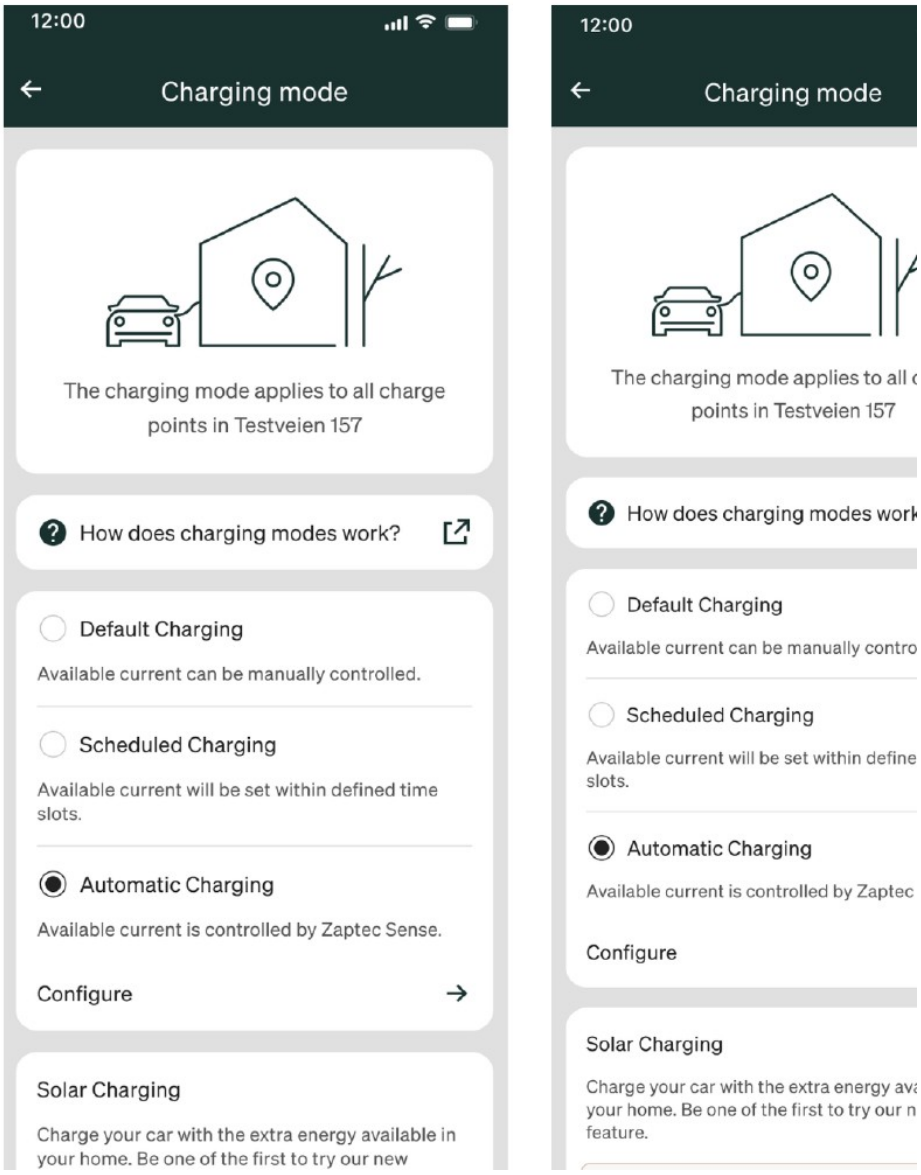
Ask your installer to:

1. Install and configure Zaptec Sense Generic or Zaptec Sense P1 in a Home installation with a TN grid.
2. Make sure the site is connected to solar production and that Zaptec Sense can measure this production.
3. Bring Zaptec Sense online so it can receive the latest firmware.

Then complete the following steps in the Zaptec app:

4. Open the Zaptec app and select your installation.
5. Go to Charging mode, then Automatic charging.

6. Under the new Solar charging feature, tap Get started. This prepares an update for Zaptec Sense.
7. Once the update is complete and Zaptec Sense has detected local production, return to Automatic charging and select Surplus + grid or Surplus only.
8. Connect your car as usual.



You can change the mode at any time. The new mode is applied the next time the charging station evaluates how the available power should be used.

If you do not see the Get started screen, you either already have the feature or your installation does not meet the requirements, such as country or TN grid type.

For existing installations

If Zaptec Sense is already installed in a compatible TN installation and measures your solar production:

9. Open the Zaptec app and select your installation.
10. Go to Charging mode, then Automatic charging.
11. Under Solar charging, tap Get started. This prepares an update for Zaptec Sense.

12. Once the update has been approved and installed, the solar charging options will appear in the app.
13. Return to Automatic charging under Charging mode and select Surplus + grid or Surplus only.

You do not need to change the existing hardware installation as long as Zaptec Sense already measures your home solar production. If the installation is compatible and local production has been detected, solar-related options will appear under Automatic charging and Charging mode. Otherwise, consult the troubleshooting sections below.

Two modes

Solar charging offers two modes. Both consider how much power your home consumes and how much your panels produce. The difference is how they use additional grid power.

1. Surplus + grid

- Uses your own production first, meaning surplus solar energy.
- Can add grid power to cover the remaining requirement when solar alone is insufficient to keep charging, for example the default 3.9 kW depending on your installation.

This provides a more predictable charging process, especially when the weather changes or household consumption varies.

Choose Surplus + grid if:

- You want your car to charge reliably even when production is not optimal.
- You are comfortable using some grid power as long as your own production is used first.

2. Surplus only

- Uses only surplus production from your panels and does not add grid power.
- Charging waits until enough surplus is available to reach the minimum current required by your car and charger.
- If production falls or household consumption rises, charging may slow down or pause.

Choose Surplus only if:

- You only want to use your own production to charge the car.
- You accept that charging speed and timing depend on the weather and other household loads.

If you are unsure which mode to use, start with Surplus + grid. After observing the system for a few days, you can switch to Surplus only if you want to reduce grid use further.

How to test whether solar charging works

14. Choose a clear, sunny period around midday.
15. If possible, switch off or minimise large household loads.
16. Set the mode to Surplus + grid and connect the car.
17. Once you have confirmed that this works, switch to Surplus only under the same conditions.

If the car does not charge in either mode under good conditions, or behaves very differently from the description above, contact your installer or Zaptec Support. They can check the grid configuration, Zaptec Sense firmware, meter compatibility and wiring.

If you do not see an immediate response

Even when everything is configured correctly, you may notice that:

- Charging does not react immediately when the sun comes out.
- Changing the mode in the app does not immediately change charging.
- Charging power does not follow every small peak or dip in solar production.

This is expected for two reasons.

1. Averaging over time

Zaptec Sense looks at average power over a time window and adjusts charging approximately every 15 minutes. Very short peaks and dips are smoothed out so charging remains stable instead of constantly changing.

2. Configuration delay

When you change settings for automatic or solar-based charging, it may take up to 15 minutes for Zaptec Sense and the charger to fully apply the new configuration.

If you have just changed a setting or conditions have changed quickly, wait for one full 15-minute cycle before assuming there is a problem.

If charging is paused or does not start

Even when solar charging is enabled and the installation is correct, there are situations in which charging will pause or not start.

Not enough surplus

- When Surplus only is active, the panels may not produce enough power to reach the minimum charging current.
- Large appliances such as ovens, heat pumps or water heaters may temporarily use all available power.

In this mode, it is normal for the car to wait or pause until enough surplus becomes available again. This is how the mode is designed to work.

Protection of the main fuse

- Zaptec Sense always protects the main fuse.
- If total household consumption approaches the main fuse limit, the system reduces or stops charging.
- This can happen in both modes and prevents the fuse from tripping.

Recent changes

- After a firmware update, mode change or limit adjustment, the current 15-minute window may not yet have ended.
- Wait for a full cycle and check whether the behaviour changes before investigating further.

If you cannot find solar charging in the app

Under Charging mode > Automatic charging, you should see solar-related options such as Surplus + grid and Surplus only when the installation meets the compatibility requirements and Zaptec Sense is online, updated and has detected local production at least once.

If everything appears correct but the options are still missing, contact Zaptec Support or your installer and provide:

- Installation name.
- Country.
- Grid type, if known.
- Zaptec Sense model: Generic or P1.
- Charging station model or models: Zaptec Go, Zaptec Go 2 or Zaptec Pro.

This information makes it much easier to identify what is blocking the feature.

If the car is connected but nothing happens

18. Check which mode is active. In Surplus only, charging will not start until enough surplus is available. The system may appear inactive while it waits for better conditions.
19. Try Surplus + grid. Switch modes and wait up to 15 minutes. If charging starts, the feature is working; there was simply not enough surplus for Surplus only.
20. Reduce other consumption and test again. Switch off large loads and repeat the test around midday on a clear day.

If the car still does not charge in Surplus + grid under good conditions, contact your installer or Zaptec Support. There may be a configuration, meter or wiring issue.

If charging starts but repeatedly stops

- Short starts and stops are normal when using Surplus only.
- They are also normal when the weather changes quickly or large household appliances switch on and off.

If this feels too unstable for your needs, use Surplus + grid instead. You will see fewer complete pauses, although charging speed may still vary. If charging in Surplus + grid still drops out for long periods under good conditions, contact your installer or Zaptec Support.

If your installation is not yet supported

- Solar charging will not appear if the installation is outside the supported countries.
- It will not appear if the home uses an unsupported grid type such as IT.
- It will not appear if you only have Zaptec Sense with a HAN or TIC connection.

Your existing Zaptec Sense load and power management will continue to work as before. You can still use external solar or energy management systems that integrate with Zaptec via OCPP or APIs.

Support for more grid types and scenarios will be added over time through software and firmware updates. When that happens, this guide will be updated with the new requirements and steps.