

Fronius Wattpilot

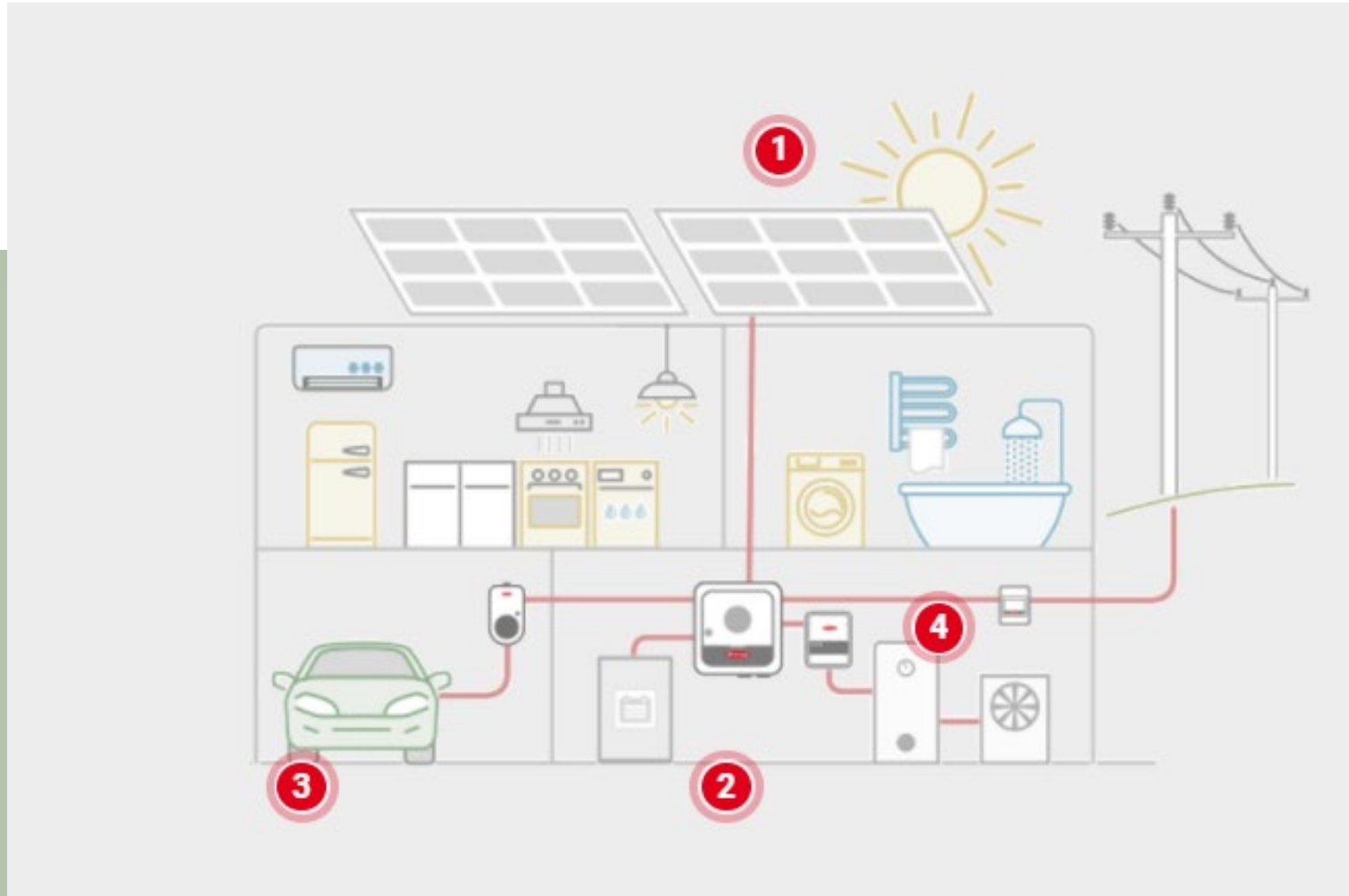


Clean Energy of
the future!!!!





Current or Future needs?



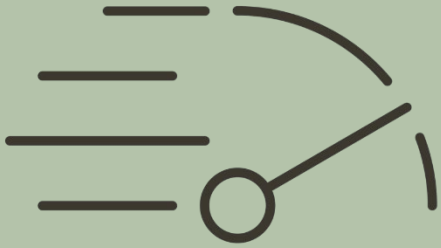
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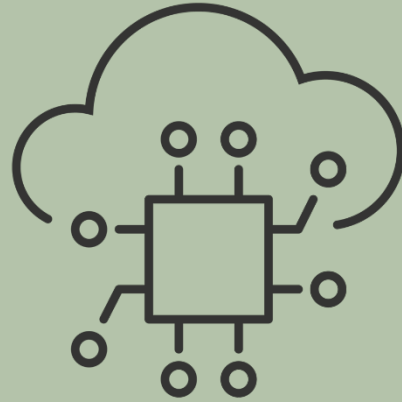
Product selection



Requirements of Electric Car Owners



Quick charging



Intelligent charging



Cost-efficient charging

Intelligent charging solution with/ without PV system



Wattpilot

- Charging Power: 11kW or 22 kW
- A host of features and functions
 - PV surplus charge
 - *Charge with variable electricity tariffs**
 - Intelligent charging modes
 - Dynamic Load Balancing
 - RFID authentication
- Standalone app
 - Commissioning, operation and visualisation



** Currently ONLY available in Germany and Austria*

Wattpilot variants

(for Australia & NZ)

	Wattpilot Home 11 J	Wattpilot Home 22 J	Wattpilot Go 22 J AUS
Connection Type	Fixed	Fixed	Portable
Max. charging power	11 kW (16A)	22 kW (32A)	22 kW (32A)
Mains connection	5-core cable 180 cm incl. neutral conductor	5-core cable 180 cm incl. neutral conductor	3-phase 5-pin plug 32A (AUS/NZ) 30 cm incl. neutral conductor
Nominal current	6-16 A 1-phase or 3-phase	6-32 A 1-phase or 3-phase	6-32 A 1-phase or 3-phase

All Wattpilots are both 1 & 3 Phase

Wattpilot variants

(for Australia & NZ)

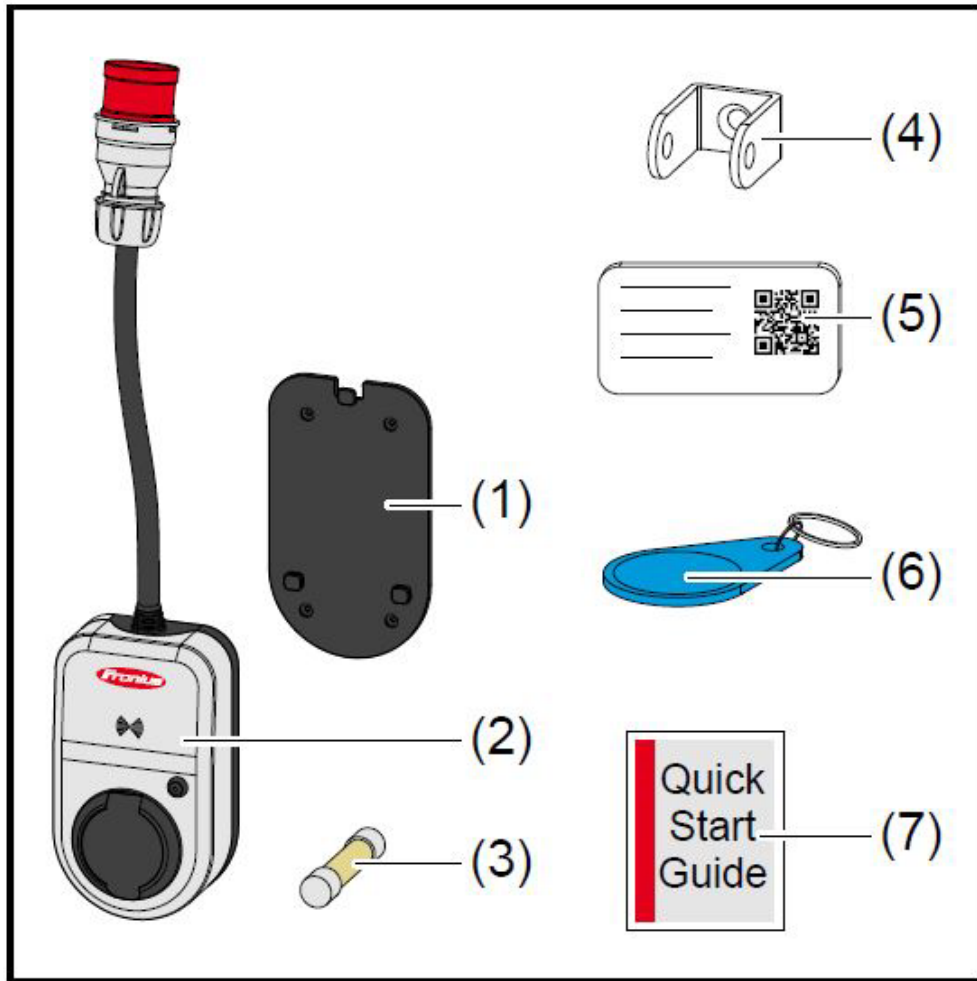


Home

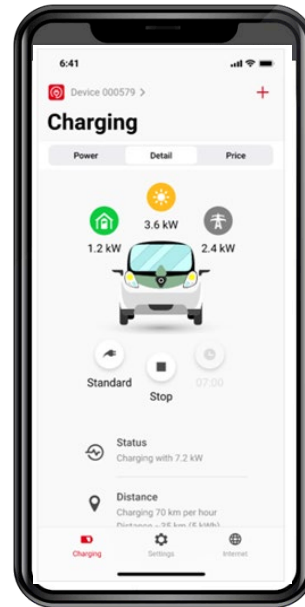


Go

Standard delivery



1. Mounting bracket incl. screws and dowels
2. Watterpilot Go/Home
3. Fine-wire fuse (replacement) - use only original fine-wire fuse!
4. Metal bracket for anti-theft device (bracket only)
5. RFID reset card
6. ID chip
7. Quick Start Guide
8. *Solar.Watterpilot App*



Optional accessories

- Additional mounting plate for Go units
- ID chips - 10 pcs.
- Type 2 cable (5m, 32 A - 22kW)

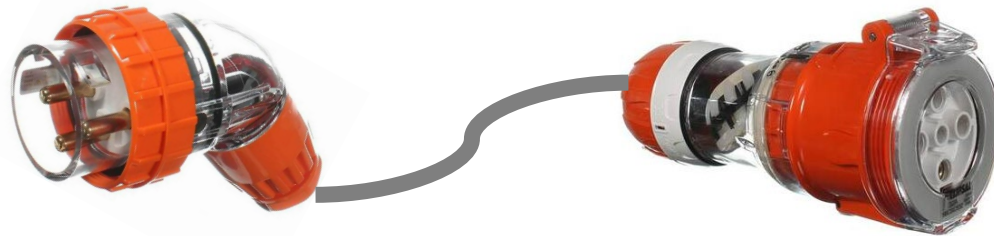


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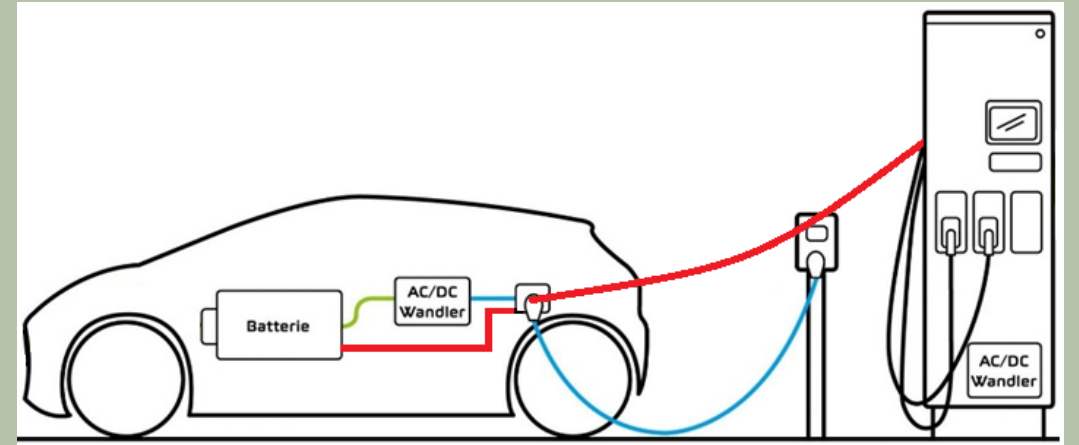


Wattpilot Go 22J on 1-Phase

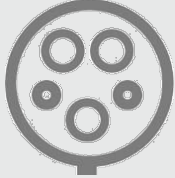
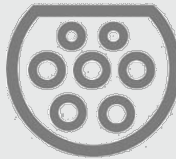
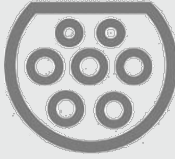
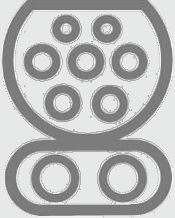
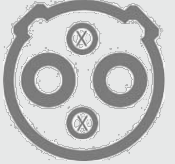
- Adaptor will be needed
- Install 32A, 1-Ph, 3 pin socket outlet
- Make up adaptor lead with:
 - 32A 3 pin plug
 - 32A 5 pin socket
- Fronius looking into bringing in an adaptor set



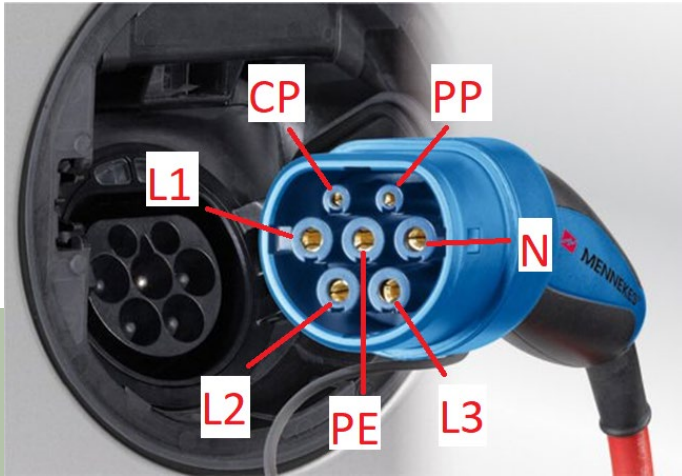
EV Charging Basics



Charging standards

					
Type	Type 1	Type 2	Tesla Supercharger	CSS	CHAdeMo
Charge type	AC	AC	DC	DC	DC
Phase number	1-phase	1,2,3-phase			
Maximum transmission power	230 V / 32 A 7,4 kW	400 V / 32 A 400 V / 63 A 22 kW privat 43 kW public	250 kW	350 kW	175 kW
Mainly found in	Amerika / Asia	Europe/ AUS / NZ	International	International	Asia

Charging plug



Type 2 plug

Alternating current AC

- Charging power 1-2-3-phase
1.38 - 43 kW (6 to 63 A)
- Typical charging powers: 2.3 kW, 11 kW, 22 kW



CCS plug

CHAdeMO plug

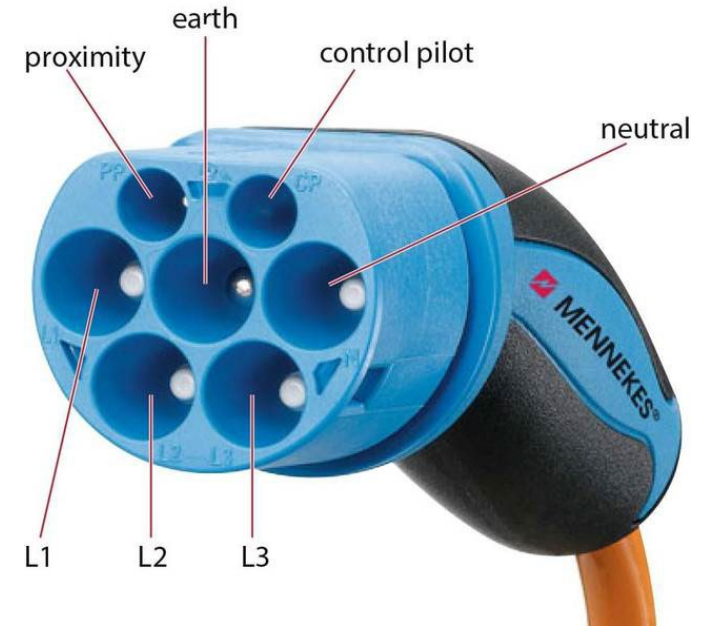
Direct current DC

- Charging power 20- 350 kW (400 V or 800 V)
- Typical charging powers: 50 kW, 150 kW

Type 2 Standard

Type 2 charging plug - EU standard since 01/2013

- **Control Pilot** → PWM signal
 - E-car status
 - Charge (Start / Stop)
 - Maximum charging current
- **Proximity pilot** → determines the maximum current carrying capacity of the cable
 - Resistance coding (100-1500 Ohm)
- No further communication between e-car and charging device during AC charging!
- Information such as state of charge (SOC) is not communicated!



Limiting factors for the charging capacity

The maximum achievable charging power (kW) depends on 4 factors:

- Supply line (connection) or house connection – Over-current protection rating
- Wallbox or mobile charging cable (Wattpilot version)
- Typ 2 charging cable
- Onboard charger in the vehicle
- (1- 2- or 3- phase, 6-32 Amps)

The weakest link in the chain is always the decisive factor for the charging power that can actually be achieved



Charging with Fronius Wattpilot



Easy charging

- Charging with a preset current e.g. 16 A fixed
- The customer can choose the current level he wants to charge e.g. slowly and gently or as quickly as possible
- Surplus or flexible electricity tariffs are not taken into account in this charging mode:
Charging with grid connection if necessary

Level 1	10 A	- +
Level 2	16 A	- +
Level 3	20 A	- +
Level 4	24 A	- +
Level 5	32 A	- +
Absolute max. Wallbox	32 A	

App interface for setting the charge current

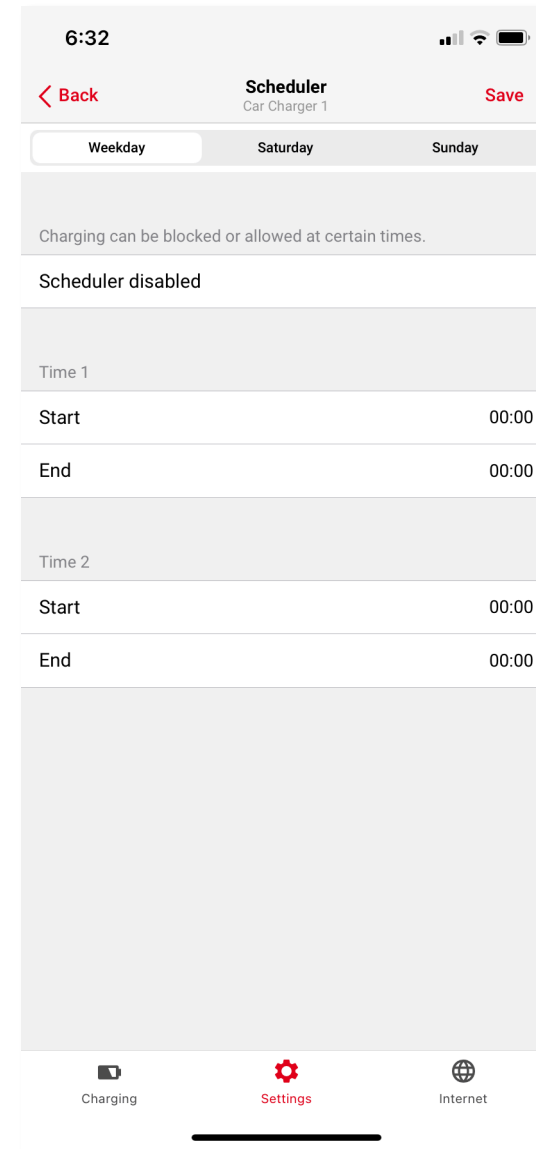


Button for setting the charge current

LED ring (Visualization of Amperage)

Scheduler

- Allow OR block charging at certain times of the day
- 2 x separate times can be entered
- Weekday, Saturday & Sunday options

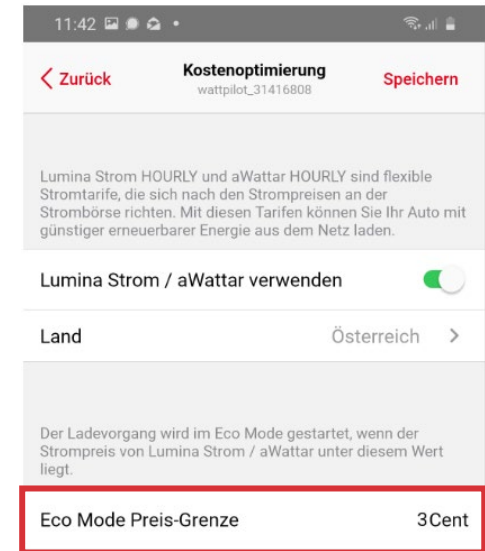
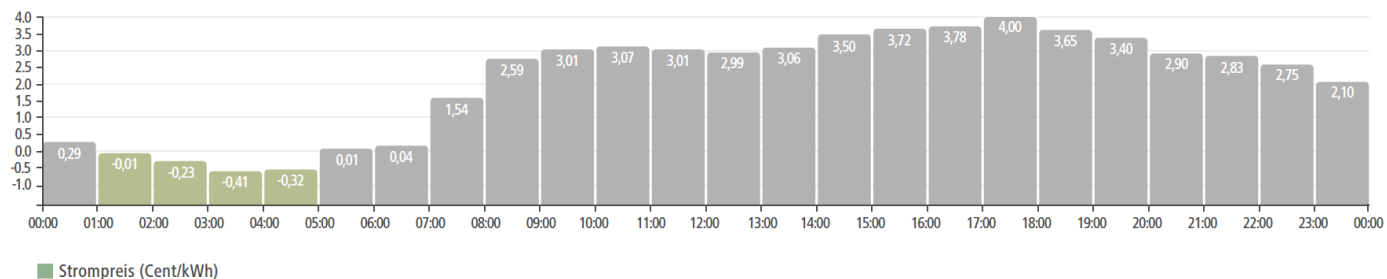


Affordable & environmentally friendly charging

With variable energy tariffs*

Even if there is no available PV energy, the electric car can charge cost efficient over night with variable electricity tariffs.

- Set up the desired electricity price thresholds for charging with the app
- With that it's possible to charge, when the electricity price is cheap or even negative
- Available energy tariffs with SOS: Lumina.Strom (DE) and aWattar Hourly (AUT)



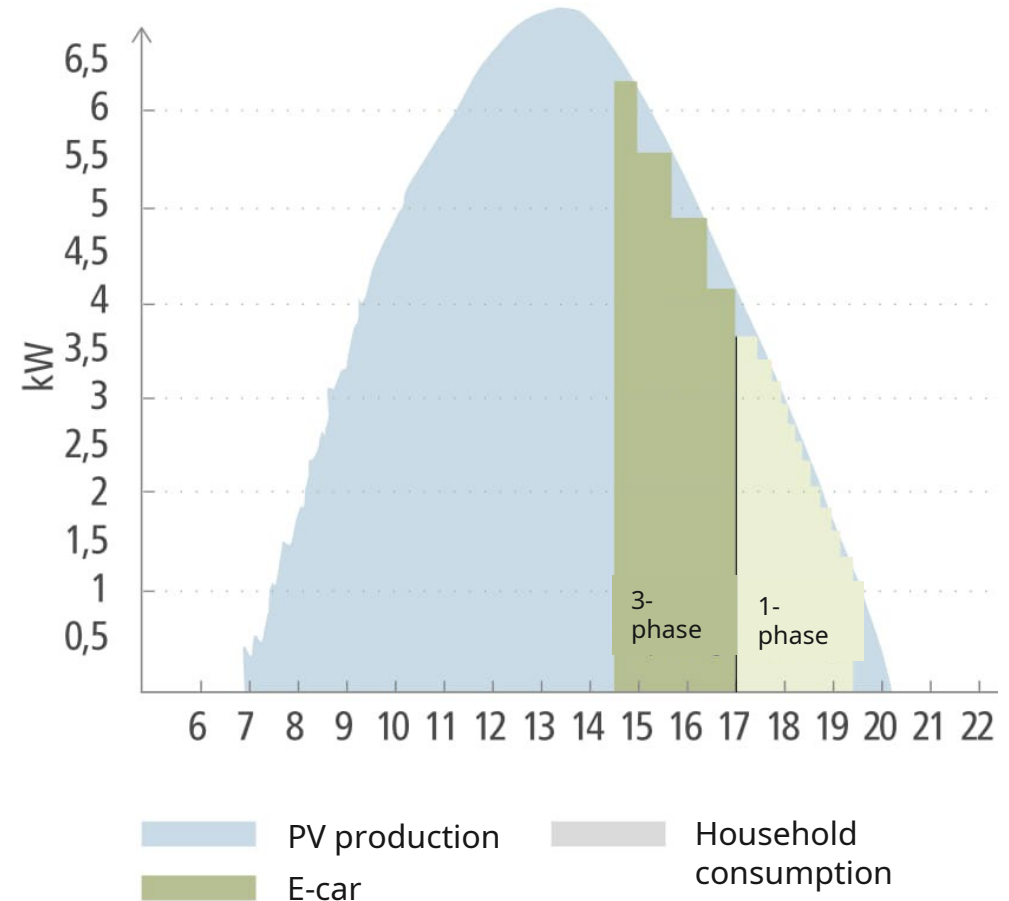
*possible from market launch in Germany and Austria

Fill up on your own solar power

PV surplus charging

Intelligent use of energy surplus rather than feeding it into the grid

- The charging process is controlled in **1A steps**
- Use the PV surplus from **1,38 kW - 22 kW**
- Fully automatic **1- / 3-phase** switchover



Surplus charging: How it works

- Is part of *"Eco Mode"* and *"Next ride"* mode
- Defines the threshold value for the start of the respective charge (1-phase or 3-phase)
- Switching between 1- and 3- phase charging is possible
- Regulation of 1A steps = 230 watt 1-phase and 690 watt 3-phase

Charging current	6 Amps	8 Amps	10 Amps	12 Amps	14 Amps	16 Amps	20 Amps	24 Amps	32 Amps
1-phase	1,38 kW	1,84 kW	2,3 kW	2,76 kW	3,22 kW	3,68 kW	4,6 kW	5,52 kW	7,3 kW
3-phase	4,14 kW	5,52 kW	6,9 kW	8,28 kW	9,66 kW	11 kW	13,8 kW	16,56 kW	22 kW

↑
Min. charging power

Automatic switchover from
1- to 3-phase charge

Wattpilot Charging modes

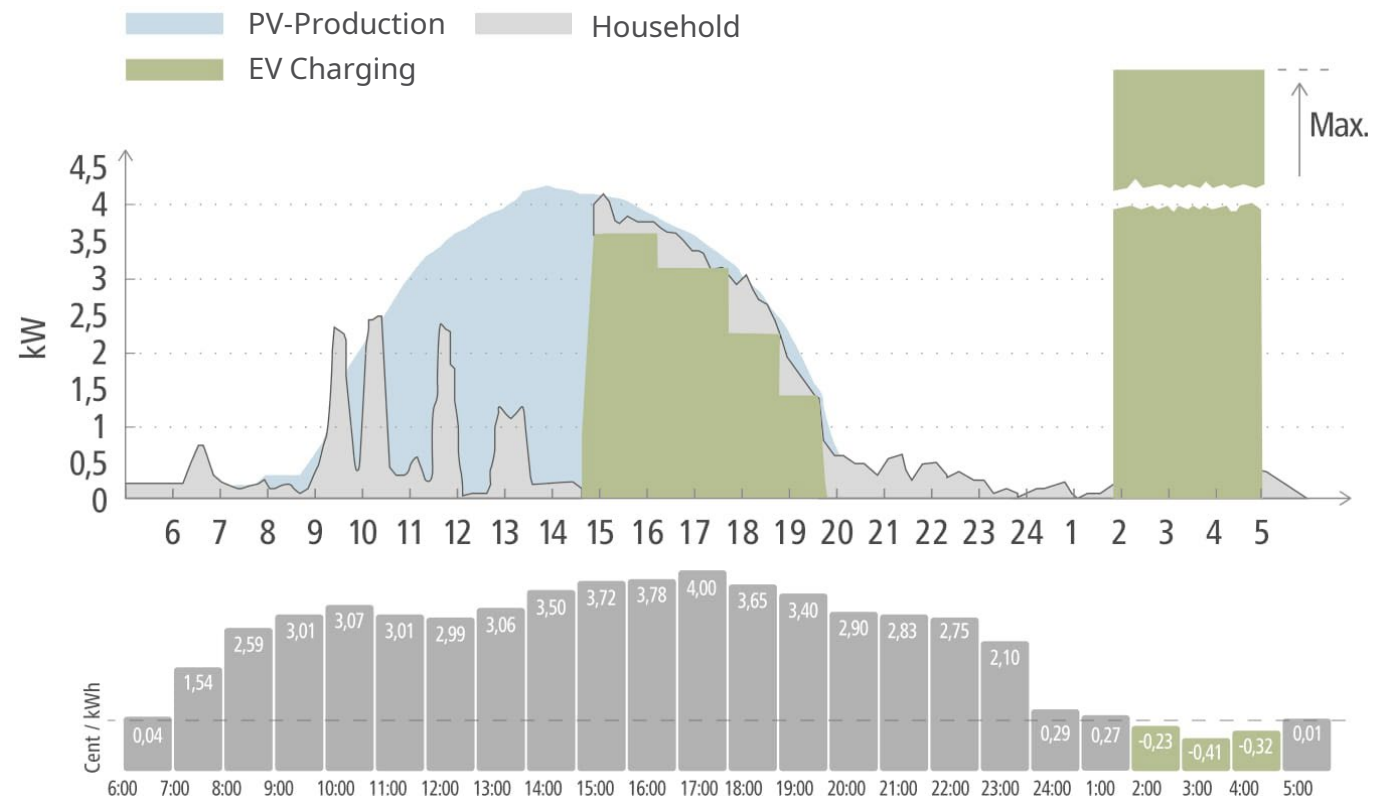


ECO Mode

Combination of PV surplus charge and charging with variable energy tariffs*

High self-consumption rates of PV, faster amortisation and cheapest energy for the electric vehicle

*Available in Germany and Austria



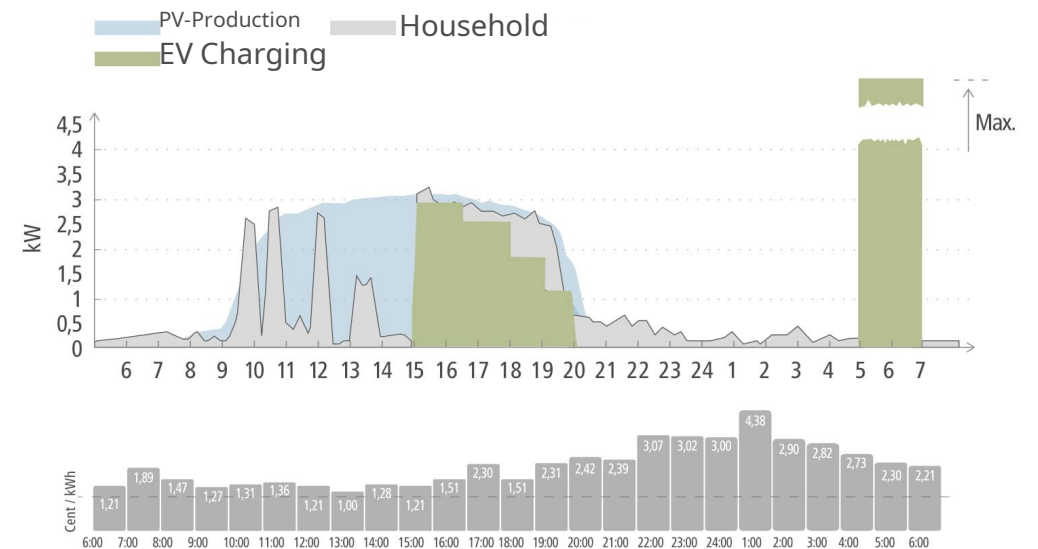
Next Trip Mode

- The Watterpilot charges a defined distance (converted into kWh) into the e-car.
- Primarily, the PV surplus energy or the variable electricity tariff* is used.
- To ensure charging, the e-car is always charged with the desired amount of energy, even if there is no cheap electricity available.

Always the desired state of charge by the desired time at the lowest cost

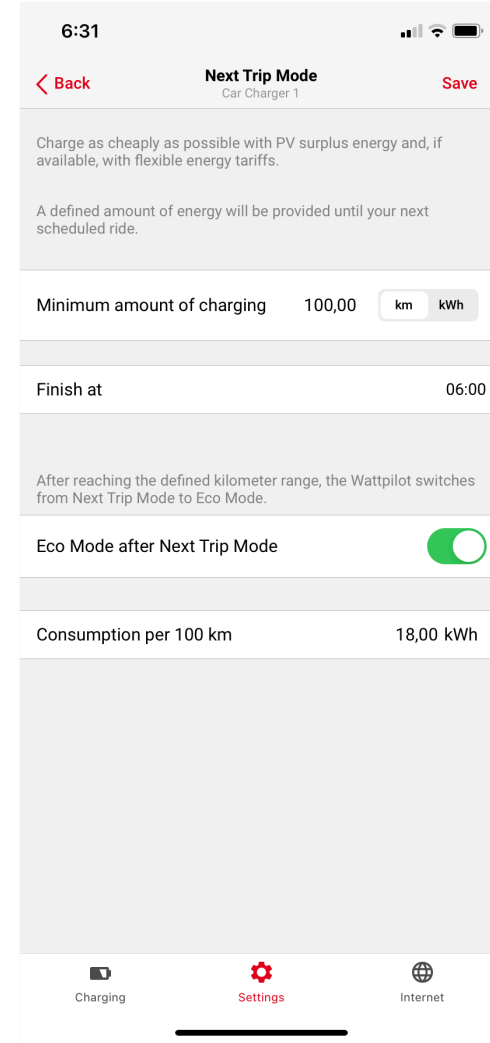
Saves the battery of the e-car, as it does not always have to be fully charged.

**Only available in Germany and Austria*

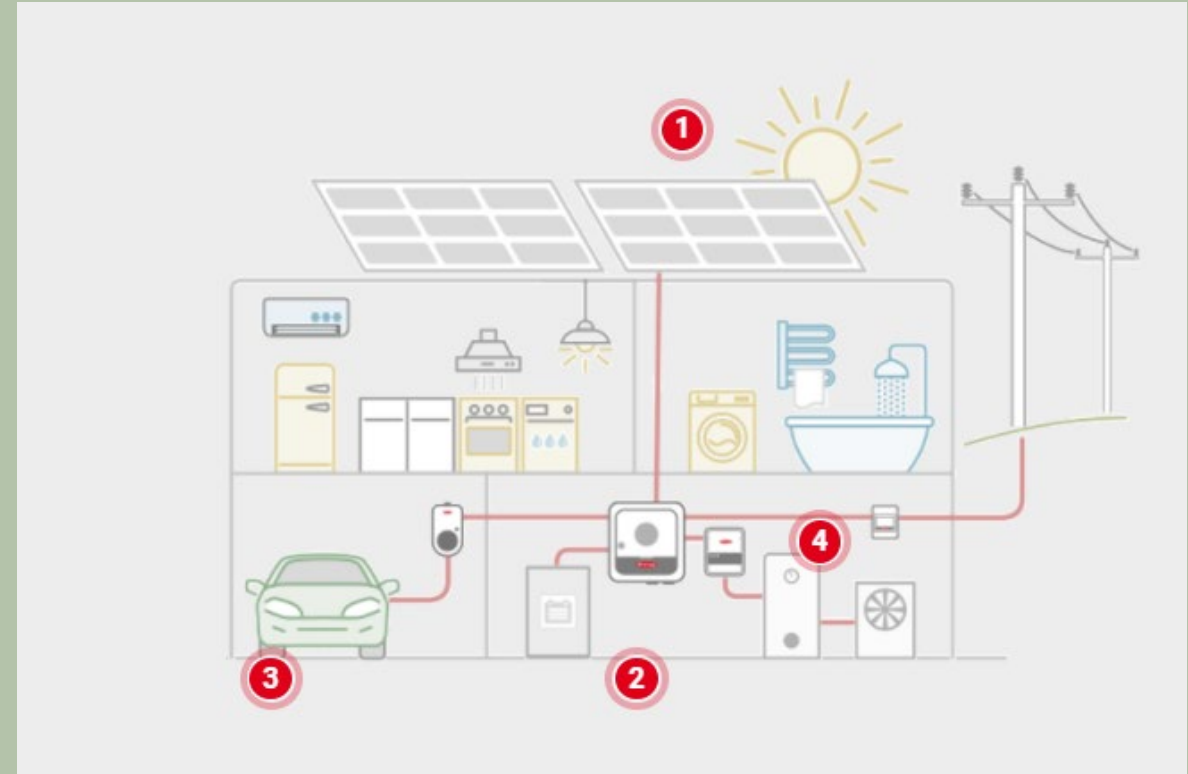


Next Trip Mode

- Set cars consumption per 100km
- Set min. amount of charge
- Set “finish by” time

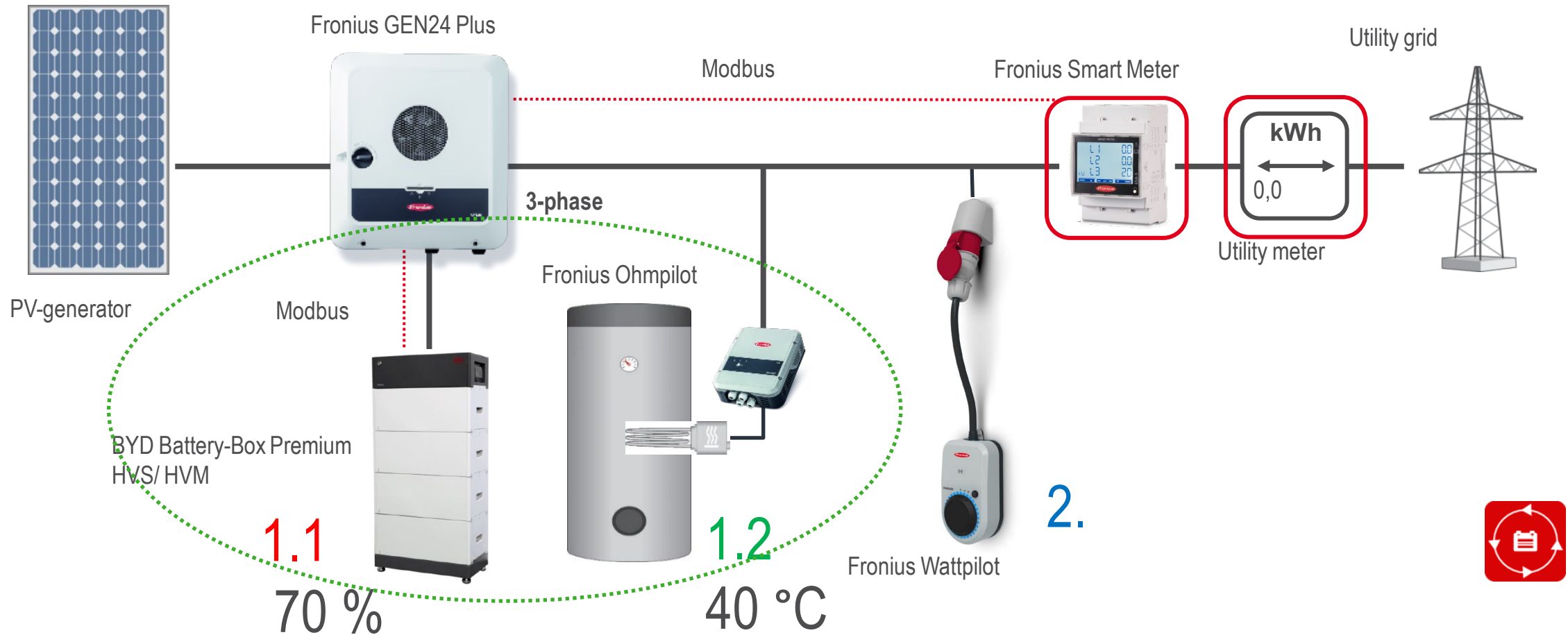


Sector coupling



Fronius Ecosystem

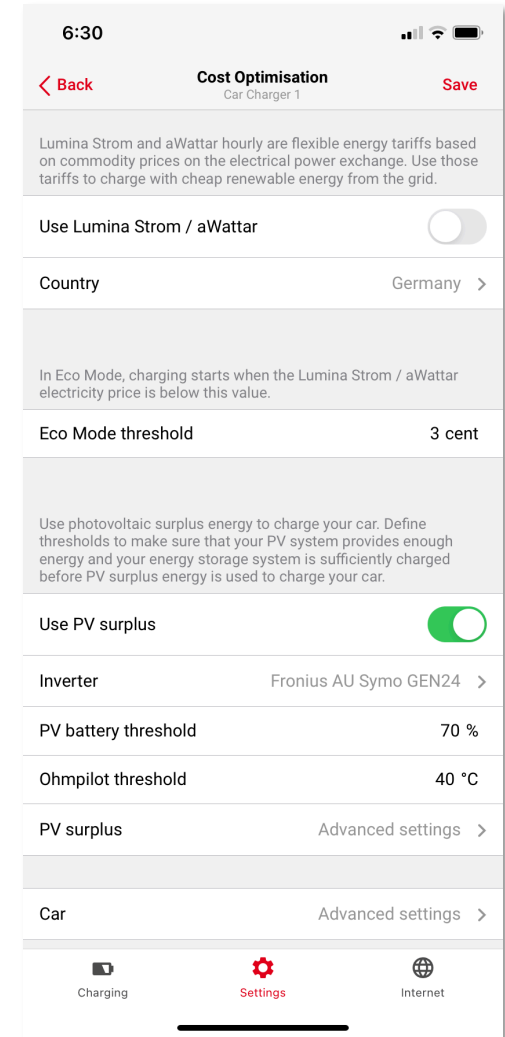
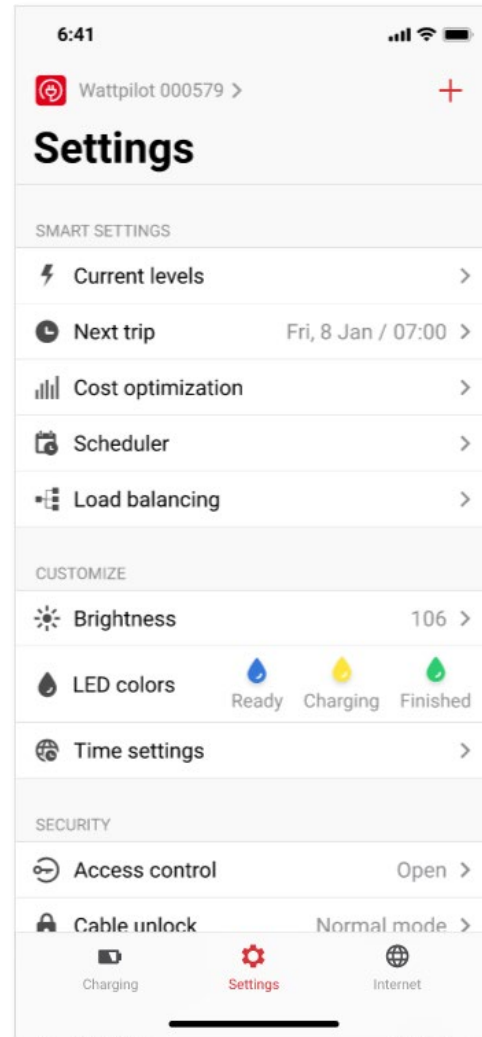
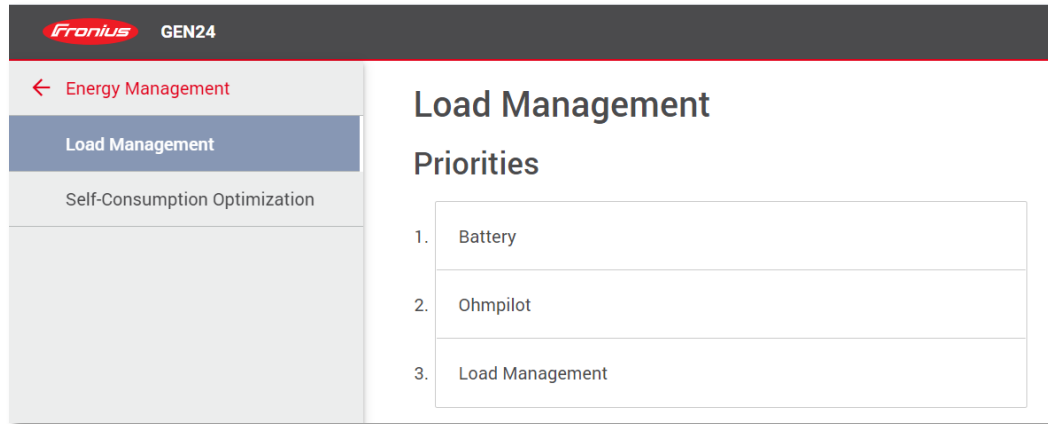
Intelligent **energy management** considering **electricity, heat and mobility**



Control Priorities

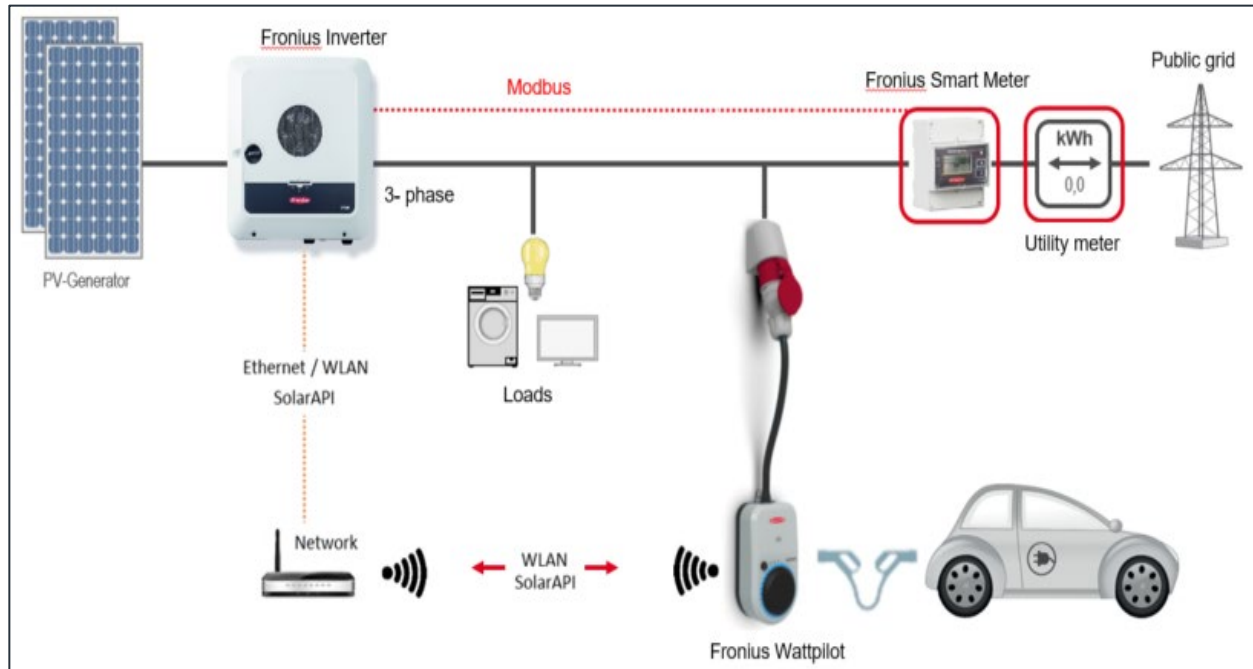
Battery, Ohmpilot, Wattpilot priority settings

- Advantages of DC coupled batteries



Export limitation

Zero export limitation is possible.



< Back **PV surplus** Save
Car Charger 2

You can set a starting power level that has to be reached with excess PV power before the Wattpilot begins charging your car.

Starting power level 1,40 kW

If Zero feed-in is activated in the inverter, it must also be activated here.

Zero feed-in

Control behaviors

Electric cars can only be controlled in power steps which can result in some deviation when using PV surplus energy. With "Prefer consumption", "Default" and "Prefer feed-in" the control behavior can be chosen.

Prefer power from grid

Default

Prefer power to grid

Wattpilot allows both consumption and feed-in.

PV power EV charging Default power

Charging Settings Internet

Dynamic load balancing

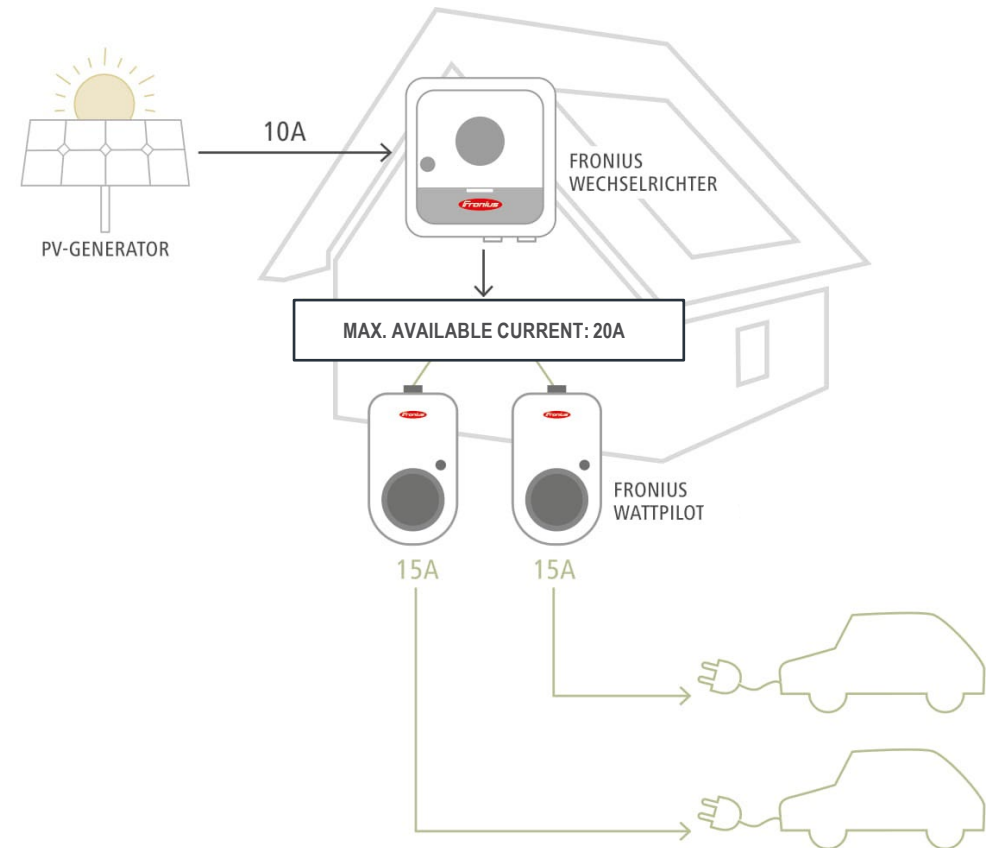


Dynamic Load Balancing

(Coming Q4 2022)

Available electricity can be dynamically distributed between multiple Watterpilots*

- Dynamic load balancing means energy from a PV system can be integrated when charging
- The household consumption is also taken into account during charging
- Additional use of the PV power
- Higher charging capacities can be realised
- Maximum use of the connected point through measurement at the grid connection point



* Fronius Smart Meter required

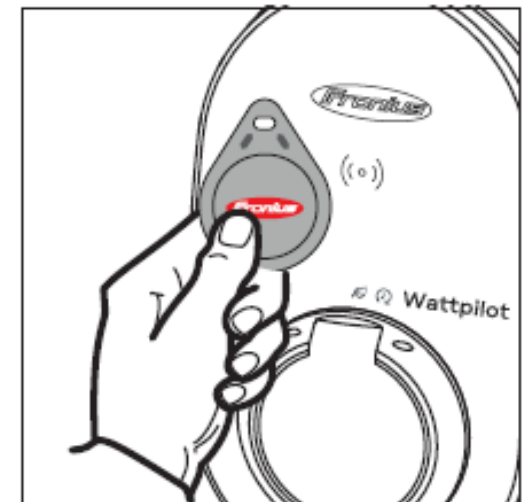
RFID authentication



Authentication via RFID

Personalized Access using an RFID Card or Chip

- The energy charging level can be assigned to the registered RFID card by an integrated electricity meter
- Up to **10 RFID** cards can be created for each Wattpilot
- Option of issuing charging authorisations (e.g., in public areas)
- Option of simple personalised billing
- Monitor and analyse charging using CSV file



Communication

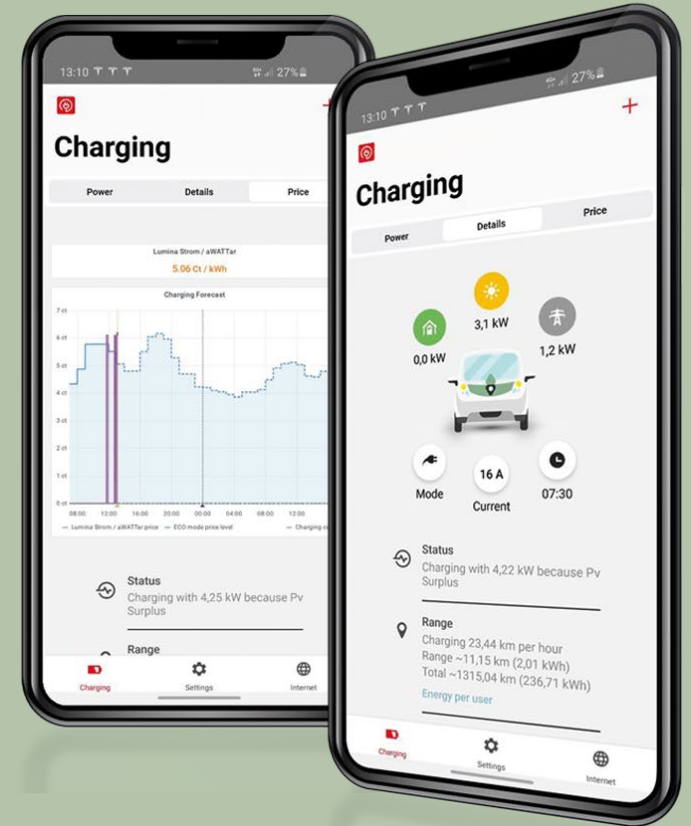


Communication

- No hardwired comms connection
- WLAN (Wi-Fi) connection only
- Watterpilot reads Inverter & Meter data from Inverter via local Solar API
- OCPP (available in Q4 2022)



Standalone app: Solar.wattpilot

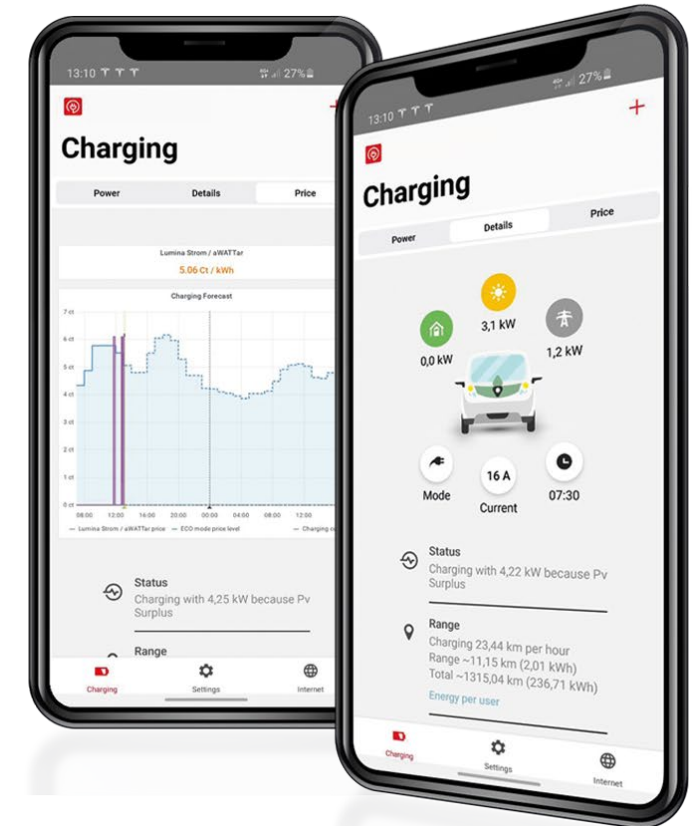


Standalone App: Solar.Wattpilot



The Solar.Wattpilot App for simple commissioning, visualization and operation of the wattpilot

- Connect the app with the Wattpilot via the charging box access point or via the Internet
- Numerous setting options: amperage, charging modes and electricity price thresholds
- Simple overview and visualisation of all data
- Change charging modes from anywhere



Wattpilot

Integration in Solar.web



Features

Integration in Solar.web

- Add manually
- Delete manually

Energy balance:

- Multiple Wattpilots are summed up.

Bubble Chart:

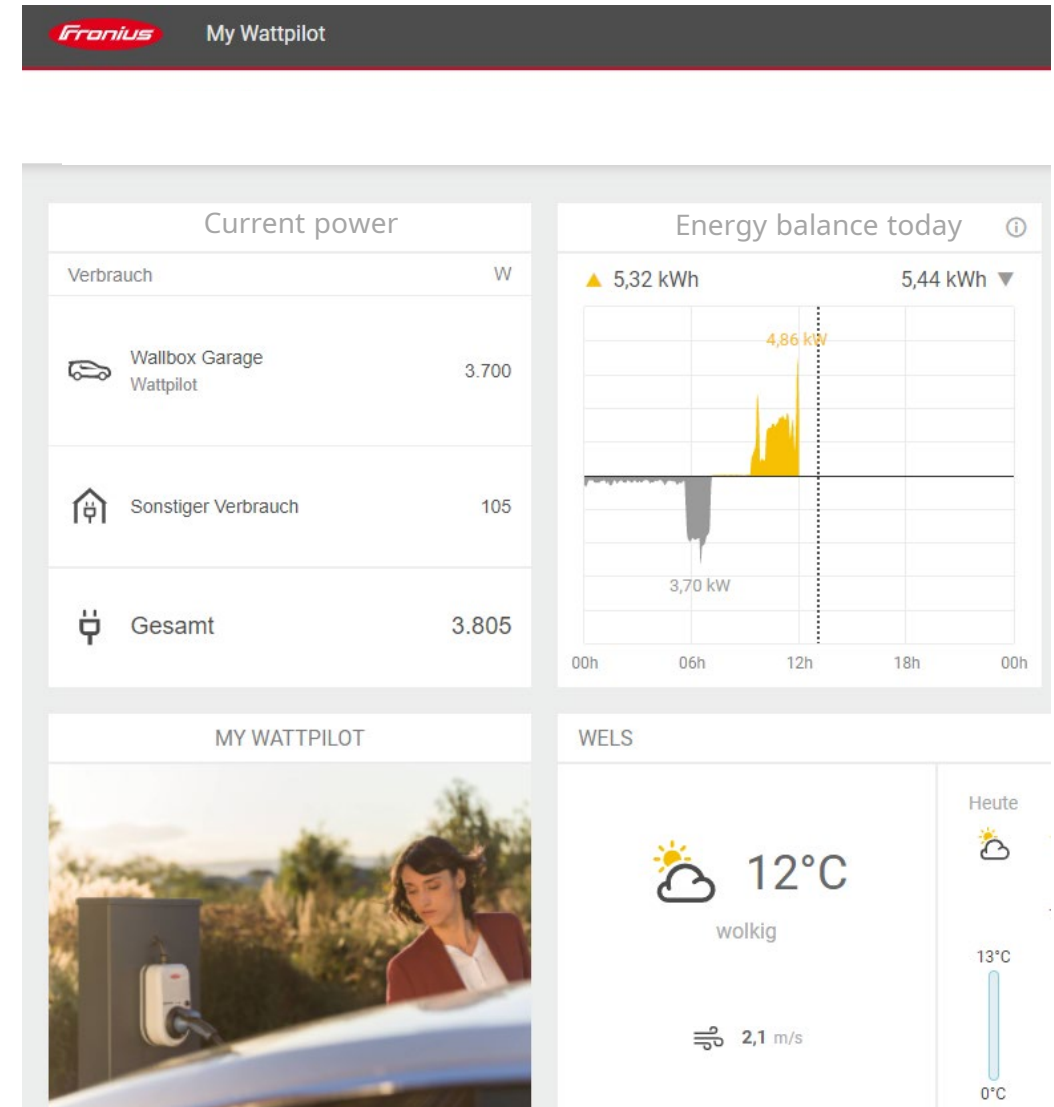
- Wattpilots are displayed separately in the consumption list.

History Chart:

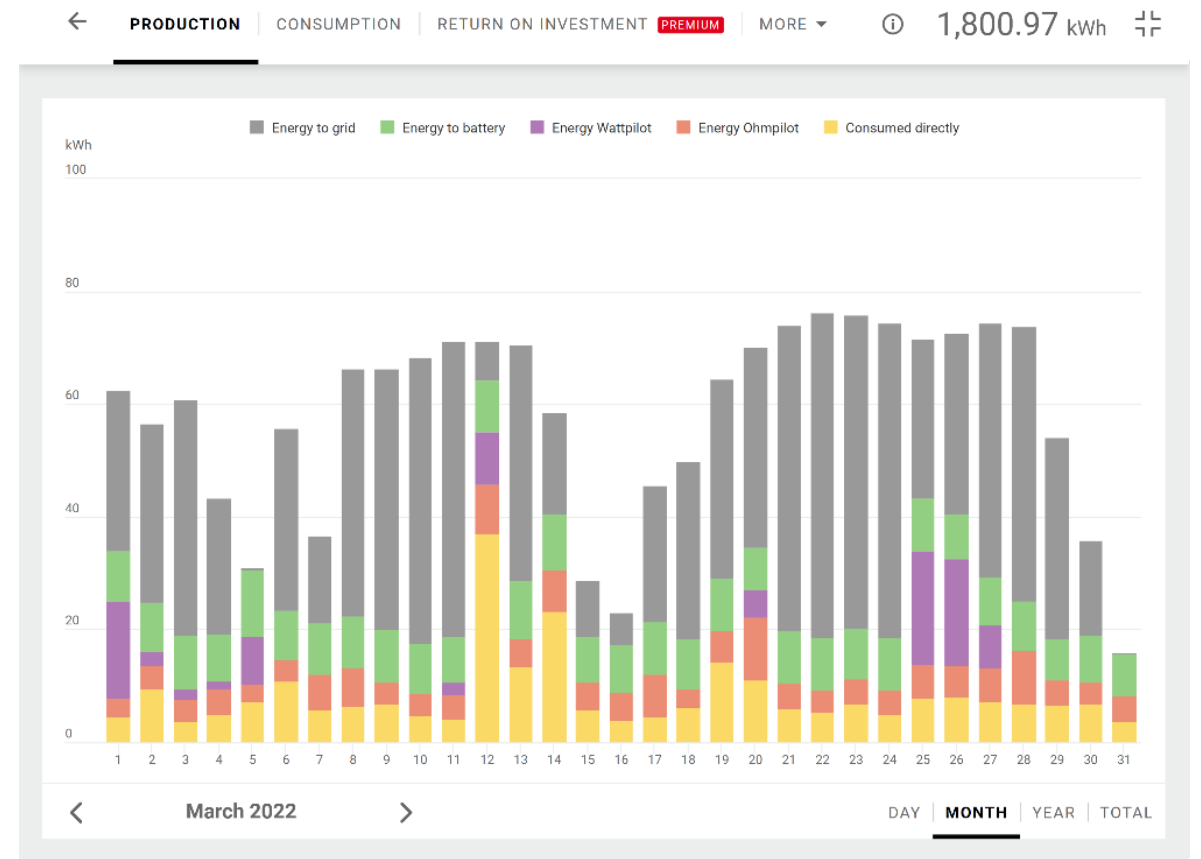
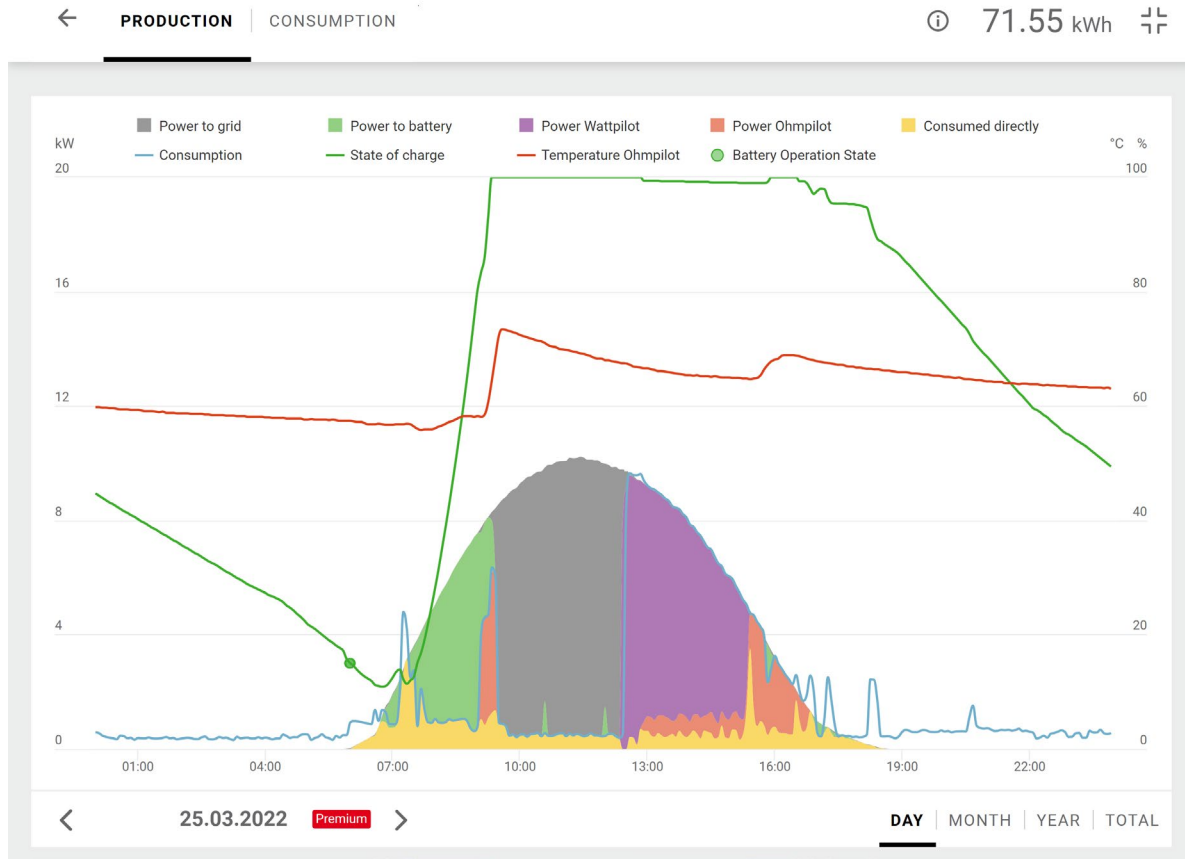
- Detail values can be visualized separately

Report Functionality:

- Personalized reports for Wattpilot data



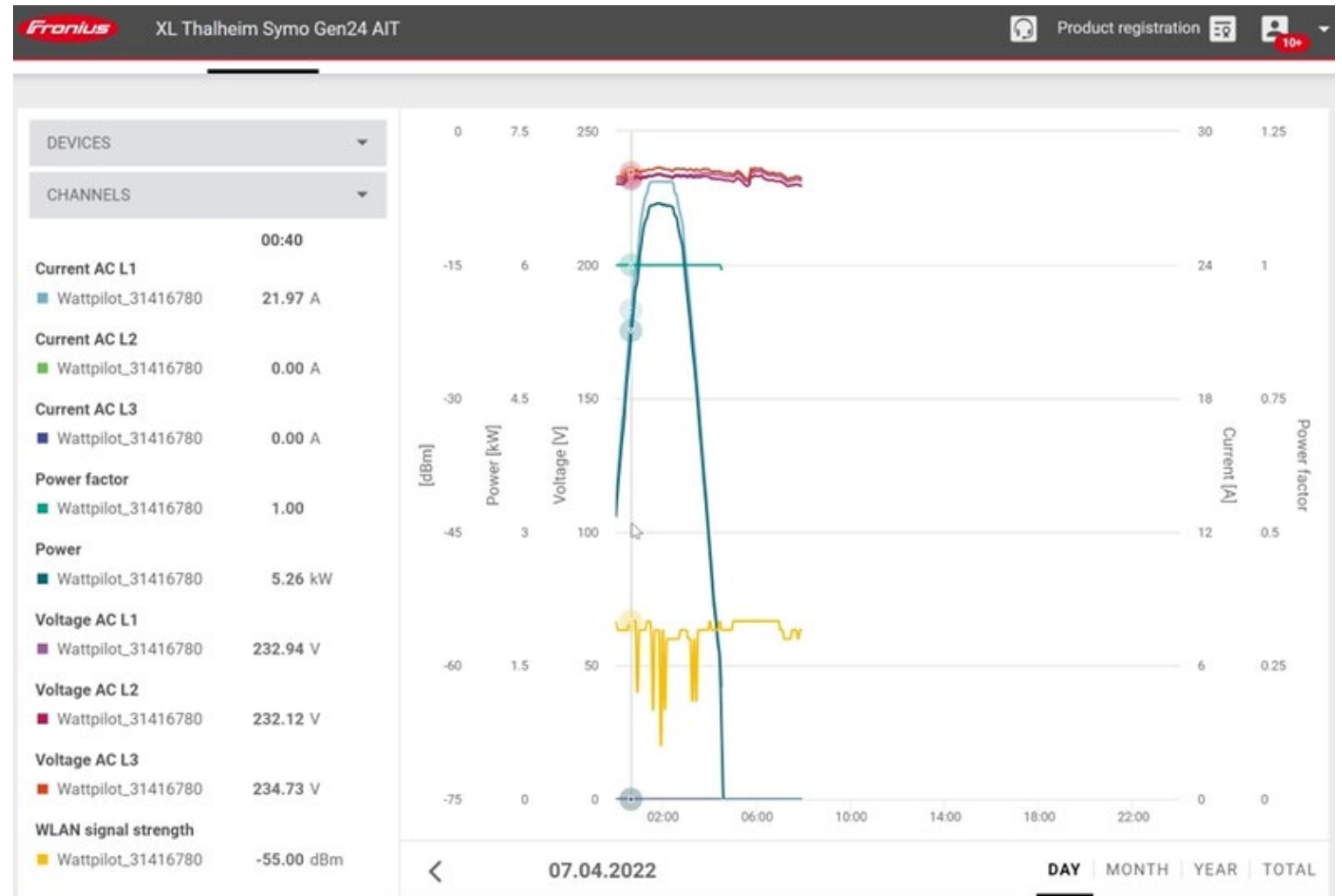
Energy Balance – Day & Month



Analysis - History

Detailed data:

- Voltage per phase
- Current per phase
- Power factor (cos phi)
- Device performance
- WiFi signal strength
- And much more!



Additional features

Wattpilot: Additional Features

Open Charge Point Protocol (OCPP) → Q4/2022

- Remote API for 3rd Party's to control Wattpilot

Residual current device with direct current detection

- Integrated 30 mA AC (Go), 6 mA DC
- Certified to IEC 62955, no upstream RCD type B required

Phase and voltage testing

- Accurate phase testing of the input voltage - no damage to the electric car if a phase is missing

Anti-theft device (Cable lock function)

- Connected type 2 cable cannot be unplugged (depending on setting), making it theft-proof

Additional theft protection for charging box

- The Wattpilot can be secured with an optional padlock to prevent theft of the Wattpilot Go

Temperature monitoring

- If the temperature is too high, the current is reduced to protect the Wattpilot

Where can
you purchase
the Wattpilot?



Contact an Authorised Sales Partner!

– Find a Fronius Authorised Sales Partner here:

<https://www.fronius.com/en-au/australia/solar-energy/installers-partners/contact/wholesalers>

Fronius Wattpilot
Designed to
Move.





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