



26/1-2026

Martin Berntsson



- 1 Organization
- 2 Inverters
- 3 Smart Meter
- 4 Storage
- 5 Backup Solutions
- 6 Further Information
- 7 Questions

Agenda



Stability for generations



Our main locations



Pettenbach



Sattledt



Thalheim bei Wels



Wels



Steinhaus

Fronius Sweden



Gustaf Frieberg

VD/managing Director

Solar Energy
Fronius Sverige AB



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Mathias Tallbo

Technical Support Sweden

Solar Energy
Fronius Sverige AB



Fronius TimeSupport

Technical Support International

Solar Energy
Fronius International AB

SnapINverter

Discontinued production from end of 2025

01



Fronius
Symo

- 3-phase
- Output classes: 3.0 - 8.2 kW
- 2 MPPT

02



Fronius
Symo Advanced

- 3-phase
- Output classes: 10.0 - 20.0 kW
- 2 MPPT

03



Fronius
Eco

- 3-phase
- Output classes: 25.0 - 27.0 kW
- 1 MPPT

Fronius Symo GEN24 Series



- Power classes: **3.0 / 4.0 / 5.0 kW**
- PV Point
- Small housing
- 2 MPPT inputs: **12,5 A / 12,5 A**
- 1 battery input: **12,5 A**
- Feed-in start voltage: **80 V**



- Power classes: **6.0 / 8.0 / 10.0 kW**
- PV Point
- Big housing
- 2 MPPT inputs: **25 A / 12,5 A**
- 1 battery input: **22 A**
- Feed-in start voltage: **80 V**
- 3-phase back-up power



- Power classes: **12.0 kW SC**
- PV Point
- Big housing
- 2 MPPT inputs: **28 A / 14 A**
- 1 battery input: **22 A**
- Feed-in start voltage: **80 V**
- 3-phase back-up power
- AFCI

Fronius Verto



- Small housing
- Power classes: **15.0 / 17.5 / 20.0 / 25.0 KW**
- **3 MPPT** with **2/1/1** Inputs
- **SPD** on both **AC & DC** side
- AFCI



- Big housing
- Power classes: **27.0 / 30.0 / 33.3 KW**
- **4 MPPT** with **2/2/2/2** Inputs
- **SPD** on both **AC & DC** side
- AFCI

Fronius Verto PLUS

New Fronius Hybrid

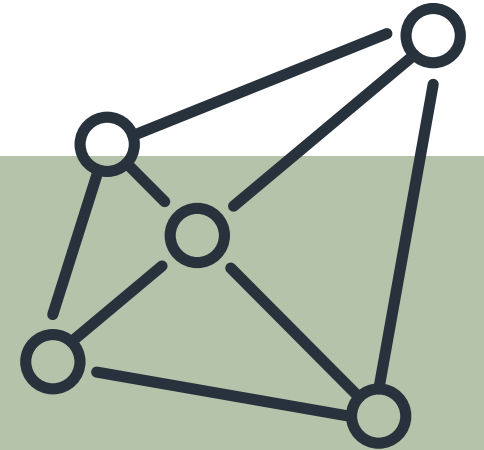
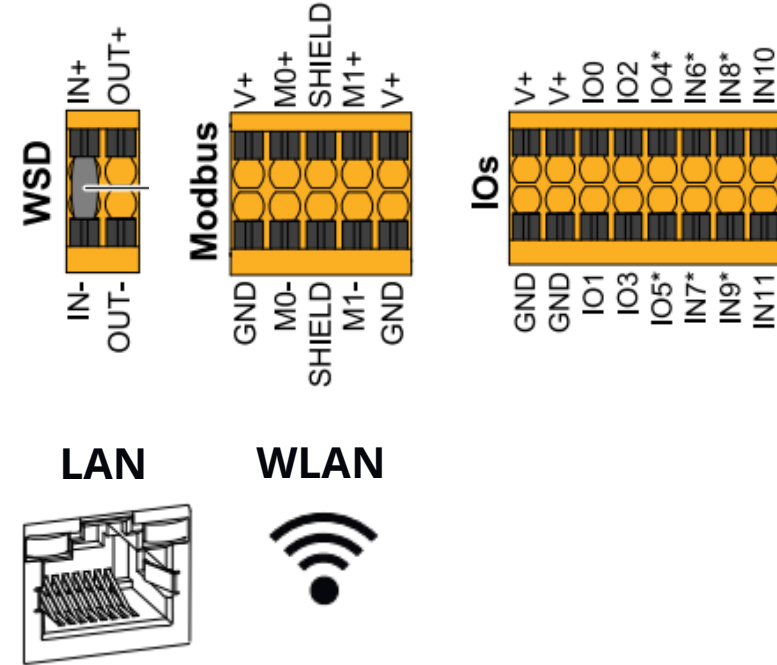


- Power classes: **15.0 / 17.5 / 20.0 / 25.0 / 30.0 / 33.3 KW**
- Same housing for all classes
- **3 MPPT** with **2/2/2** Inputs – **6** Strings – MC4
- Feed-in start voltage **150V**
- SPD **on** both **AC & DC** side
- AFCI
- Battery input: 50 A
- Full Backup with Backup Power Boost
- Enhanced Power Harvest

Interfaces

Fronius Pilot

- Well-known commissioning with Solar.start App or Web User Interface
- Monitoring via Solar.web
- Energy management with I/Os
- Connection to Fronius Smart Meter
- Open interfaces



Arc Guard (AFCI)

Arc Guard technology is a self-learning arc detection system that interrupts serial DC arcs before they become a problem

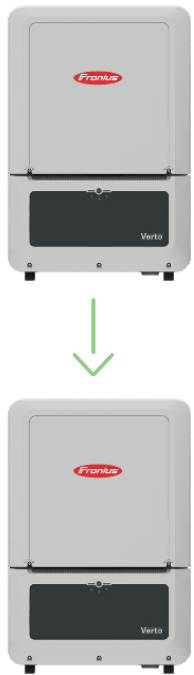
————> **Increased protection against
fire hazards**



Asymmetric Generation

Systematic asymmetric power generation

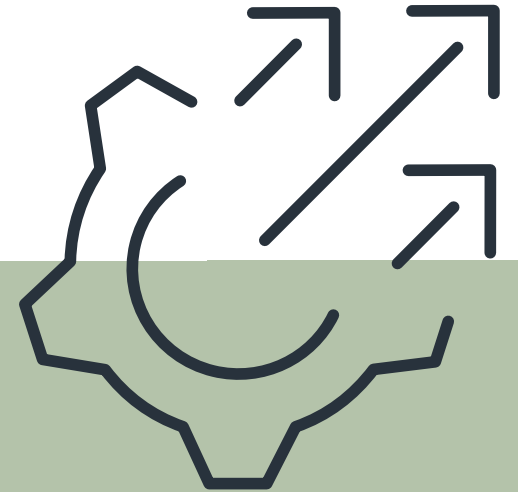
in combination with Fronius Smart Meter



Relevant in grids with phase-exact
energy measurement



**Physically reducing
energy imports from the grid**
by shifting power to phases with local consumption



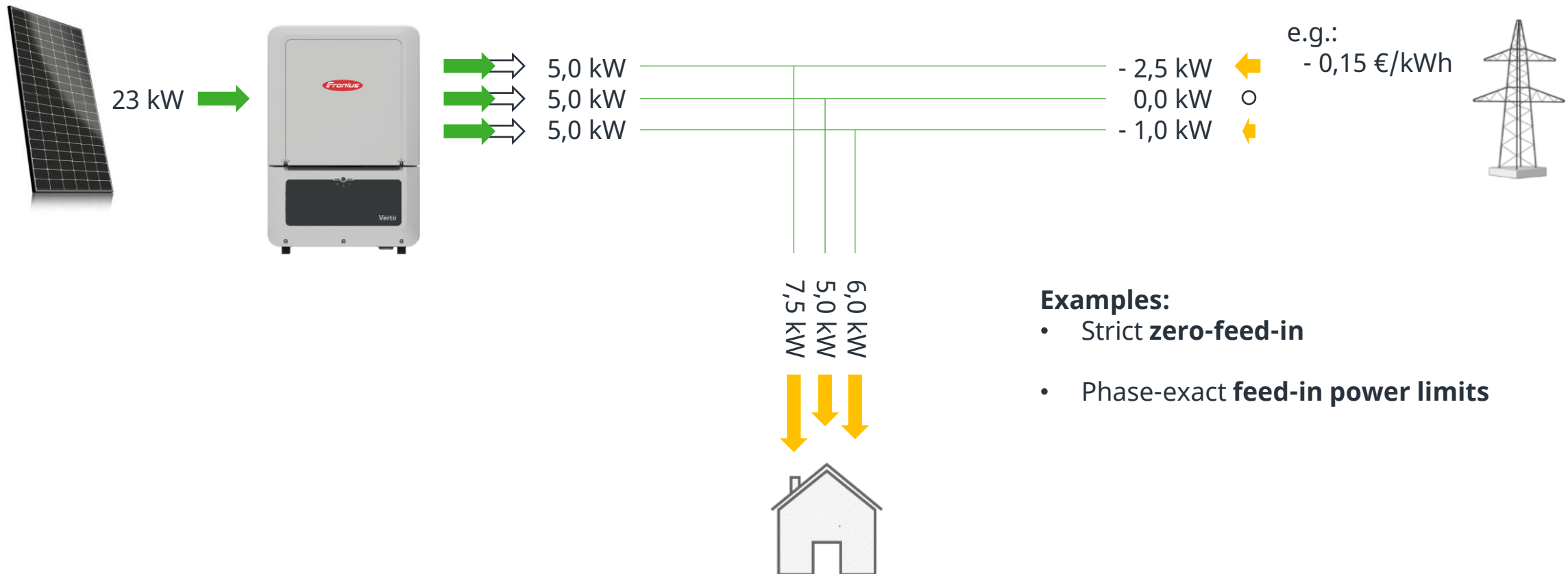
Limitations:

- As of SW 1.32
- max. 25 A asymmetry
- N.A. with 480V

Strict Feed-In Policies

Problem:

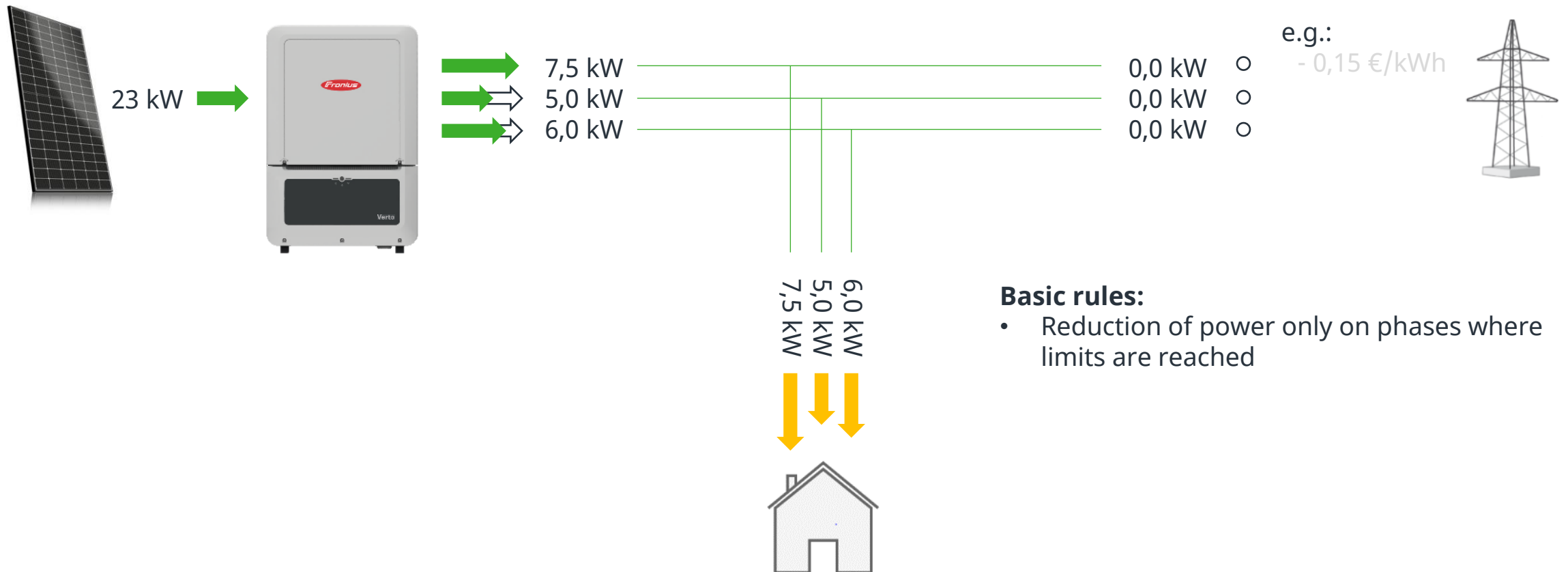
Lost revenues due to „weakest phase“ approach



Strict Feed-In Policies

Solution:

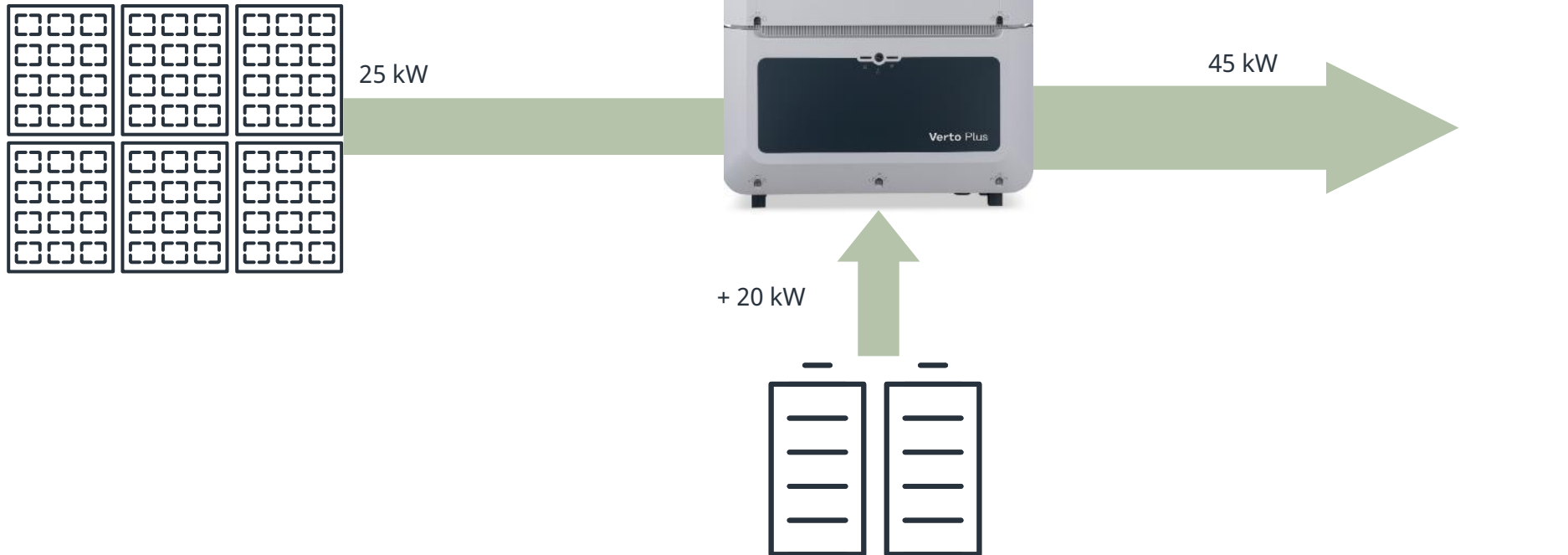
Asymmetric Generation



Backup Power Boost

Example:

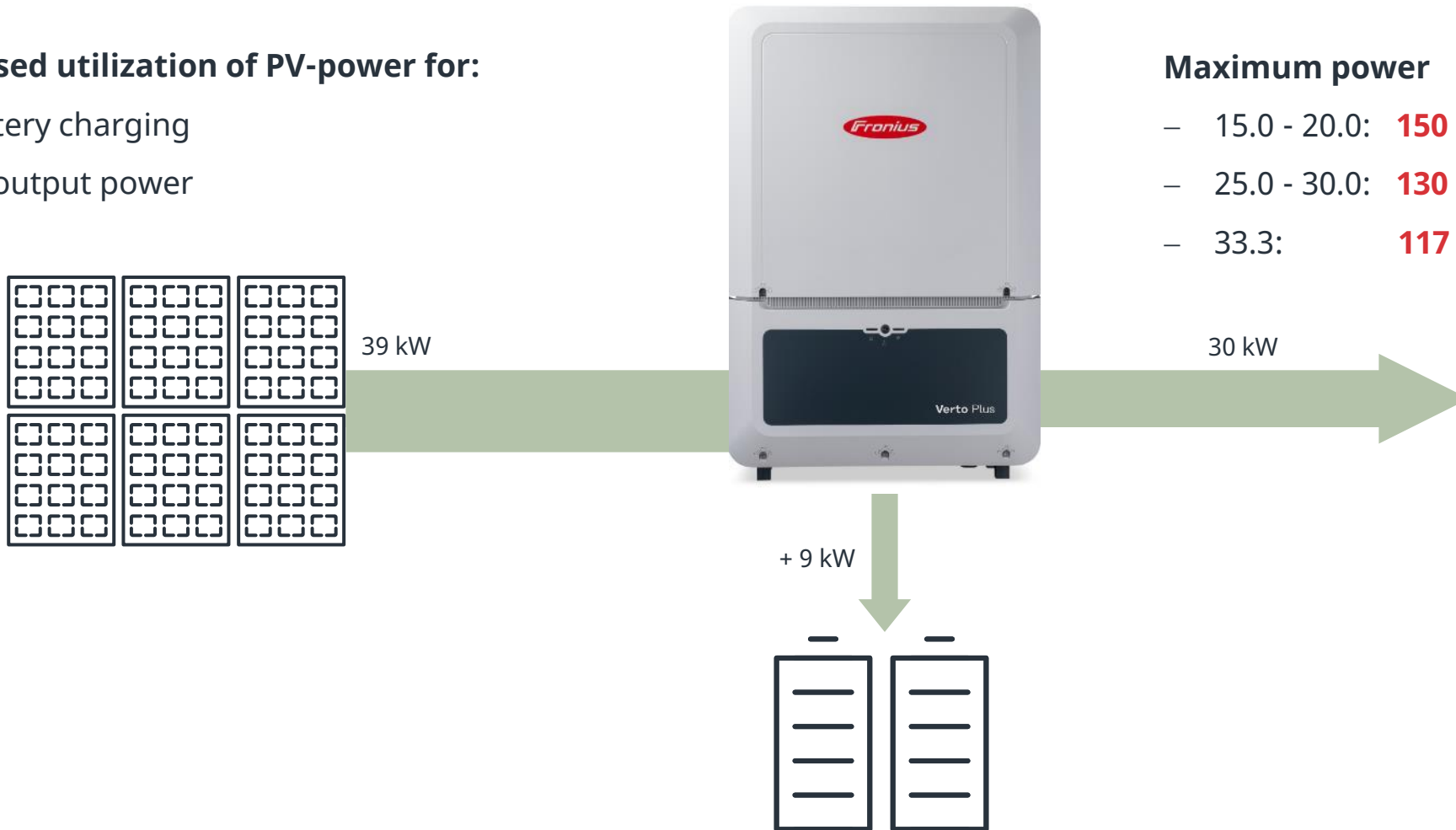
- High start-up power of larger electric motors



Enhanced Power Harvest

Increased utilization of PV-power for:

- Battery charging
- AC output power



Maximum power

- 15.0 - 20.0: **150 %** → 22,5 - 30 kW
- 25.0 - 30.0: **130 %** → 32,5 - 39 kW
- 33.3: **117 %** → 39 kW

Fronius Tauro

Fronius Tauro Eco D/P

- 1 MPPT
- Power classes: 50 / 100 kW
- DC input voltage: 580-1000 V

Fronius Tauro D/P

- 3 MPPT
- Power classes: 50 kW
- DC input voltage: 200-1000 V

Higher input current on D-Variante possible – 30 A option



Fronius Argeno

Designed to empower.



10

MPP-Tracker

2

Strings
per MPPT

125 kW

30 A

per MPPT

Max DC Voltage 1100V

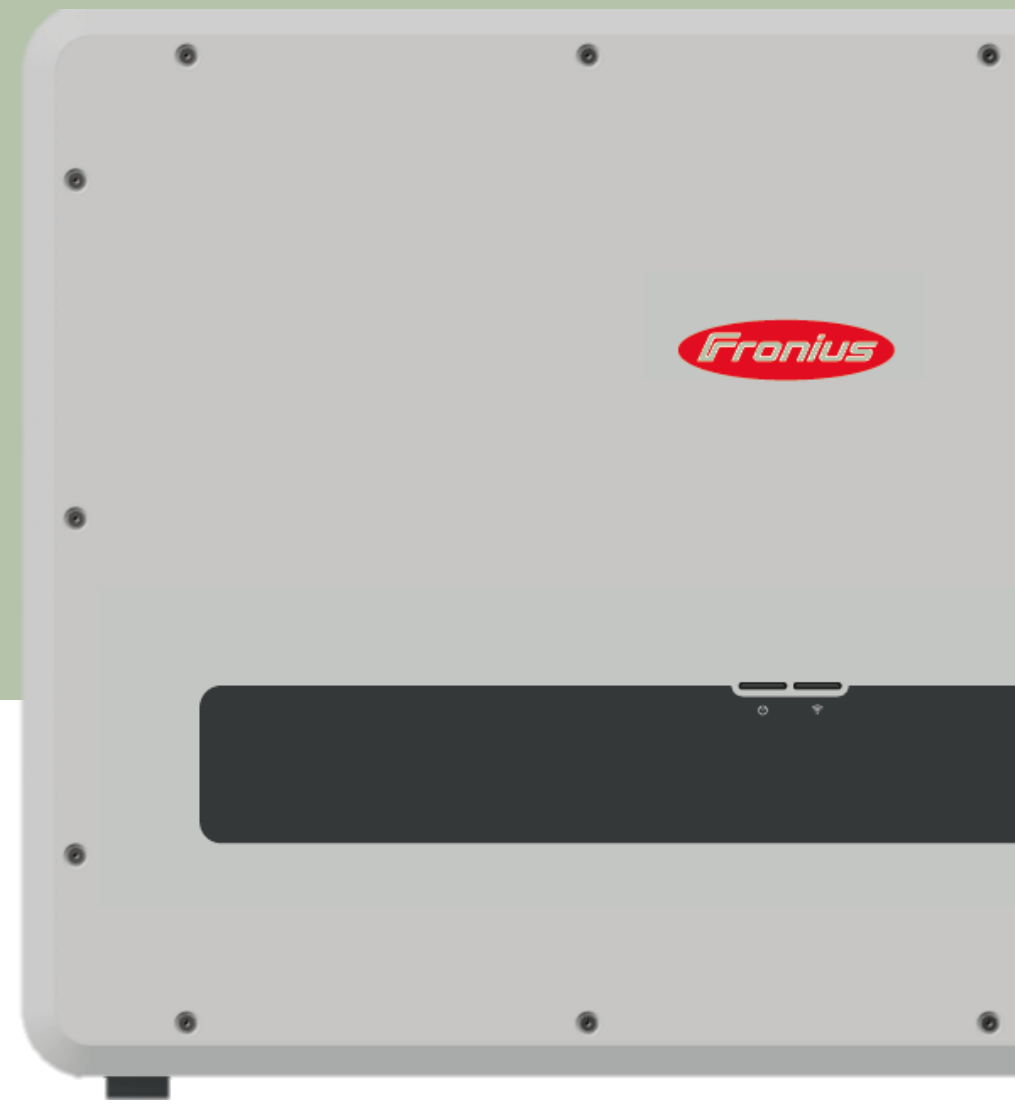
550 – 850 V

MPPT voltage range

Fronius

99,1 %

Peak efficiency



To measure is to know

Analysis and visualisation of consumption data

Fronius Smart Meter

Typologien Fronius Smart Meter TS



100A-1

- For residential systems
- 1-phase
- AC cable cross section 1-16 mm²



65A-3

- For residential systems
- 3-phase
- AC cable cross section 1-16 mm²



5kA-3

- For commercial use
- 3-phase
- External current sensors
- AC cable cross section 0,05-4 mm²



Fronius Smart Meter CT A

- Factor is printed on sensor
- E.g. $100/5 = \underline{20}$ is the factor to set!

Fronius Smart Meter CT A

Primary/Secondary Current Accuracy class

– 100A/5A	0.3
– 150A/5A	1
– 200A/5A	1
– 250A/5A	2.5
– 400A/5A	5

Installation type

- Split-core



Fronius Smart Meter IP

Communication via
LAN (Modbus TCP)



Communication
via RS485
(Modbus RTU)

Communication
via WLAN
(Modbus TCP)

WAGO Clamps for easy
installation

Fronius Smart Meter CT V

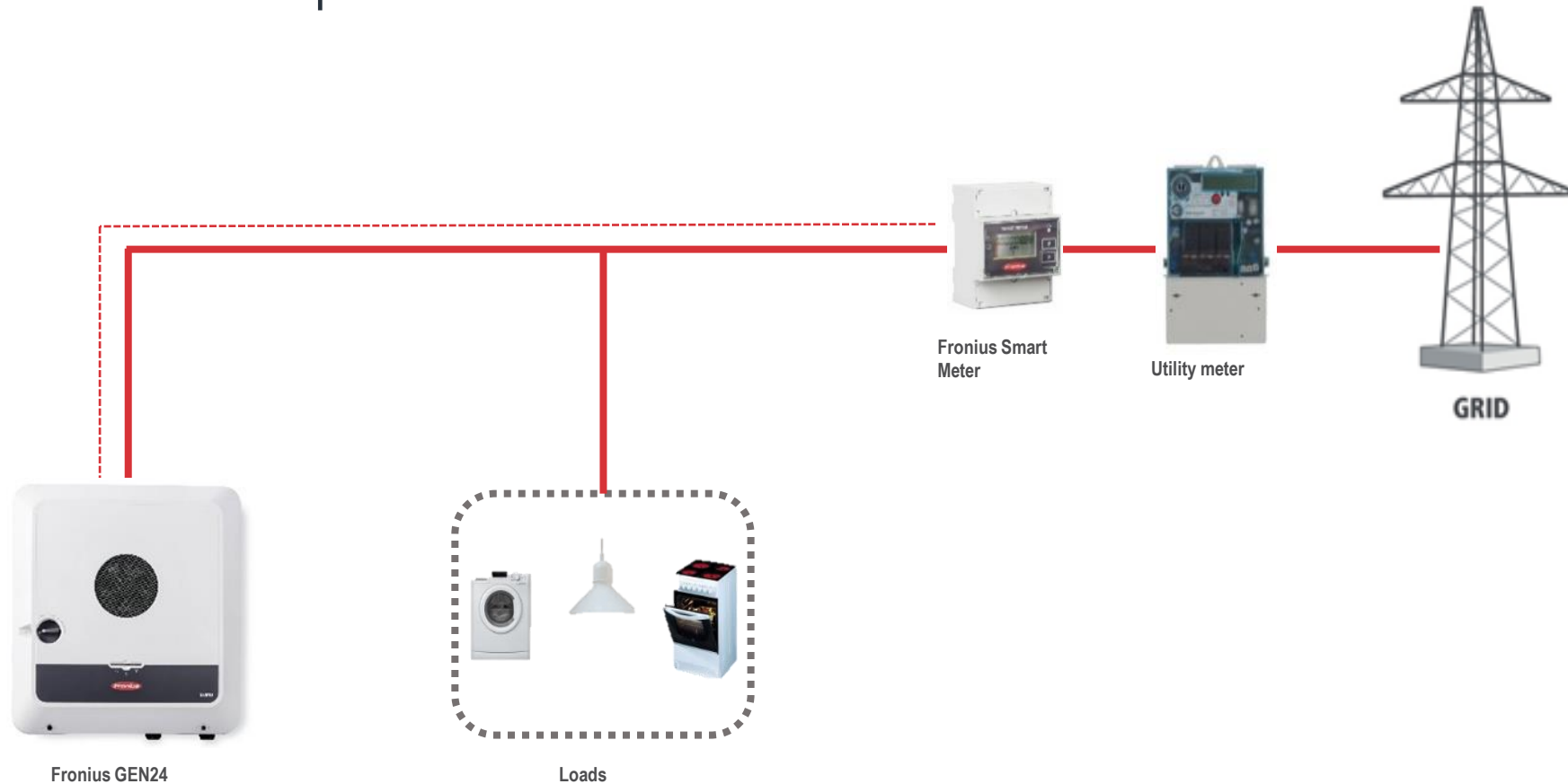
- Fronius Smart Meter **CT V**
 - Secondary 333mV
 - 100A / 250A / 400A
 - Article No.
 - 41,0010,0104 / 41,0010,0105 / 41,0010,0232

Fronius Smart Meter CT V		
100A / 333mV	250A / 333mV	400A / 333mV
1		
Split-core		
46 x 31,5 x 31,5mm	66,5 x 45 x 34,4mm	81,5 x 57 x 38,4mm
16mm	24mm	36mm
1m		
-40°C to +65°C		

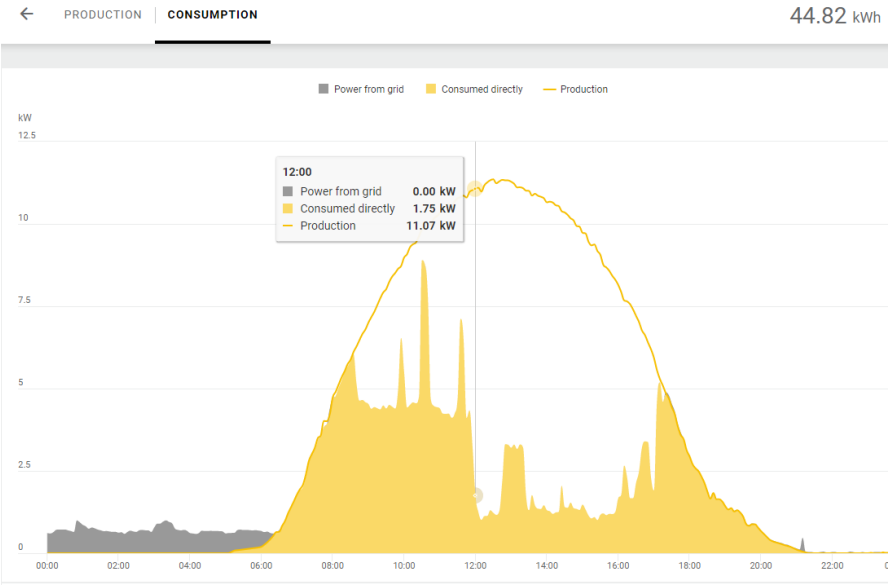
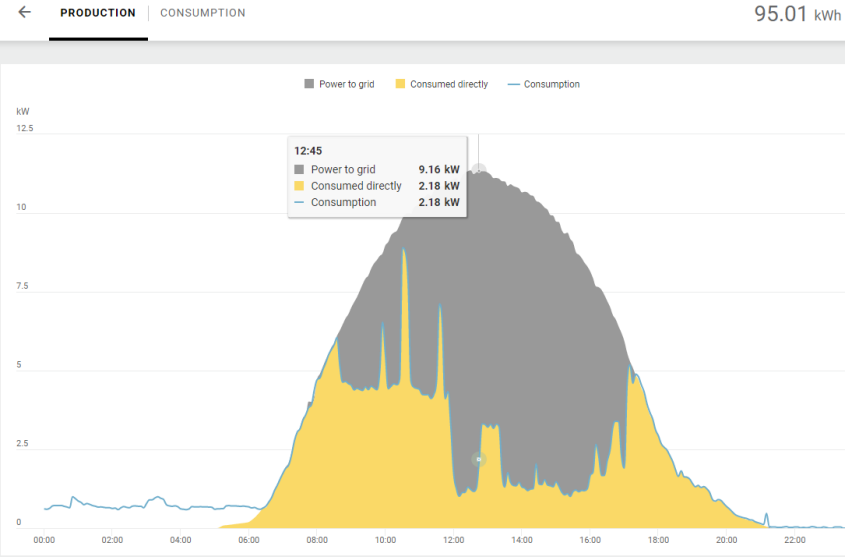
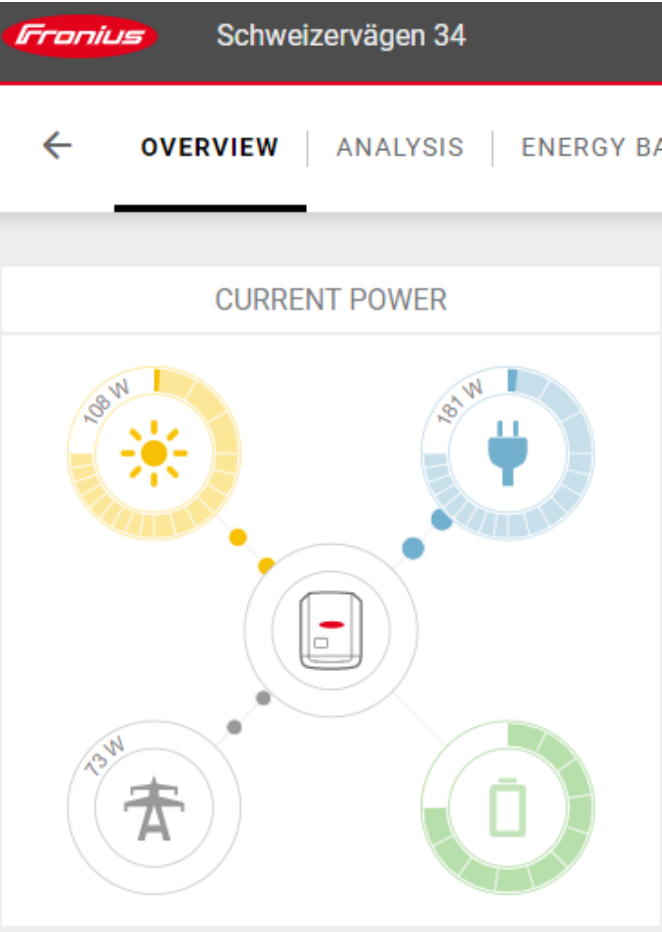


Installation Smart Meter in feed-in point

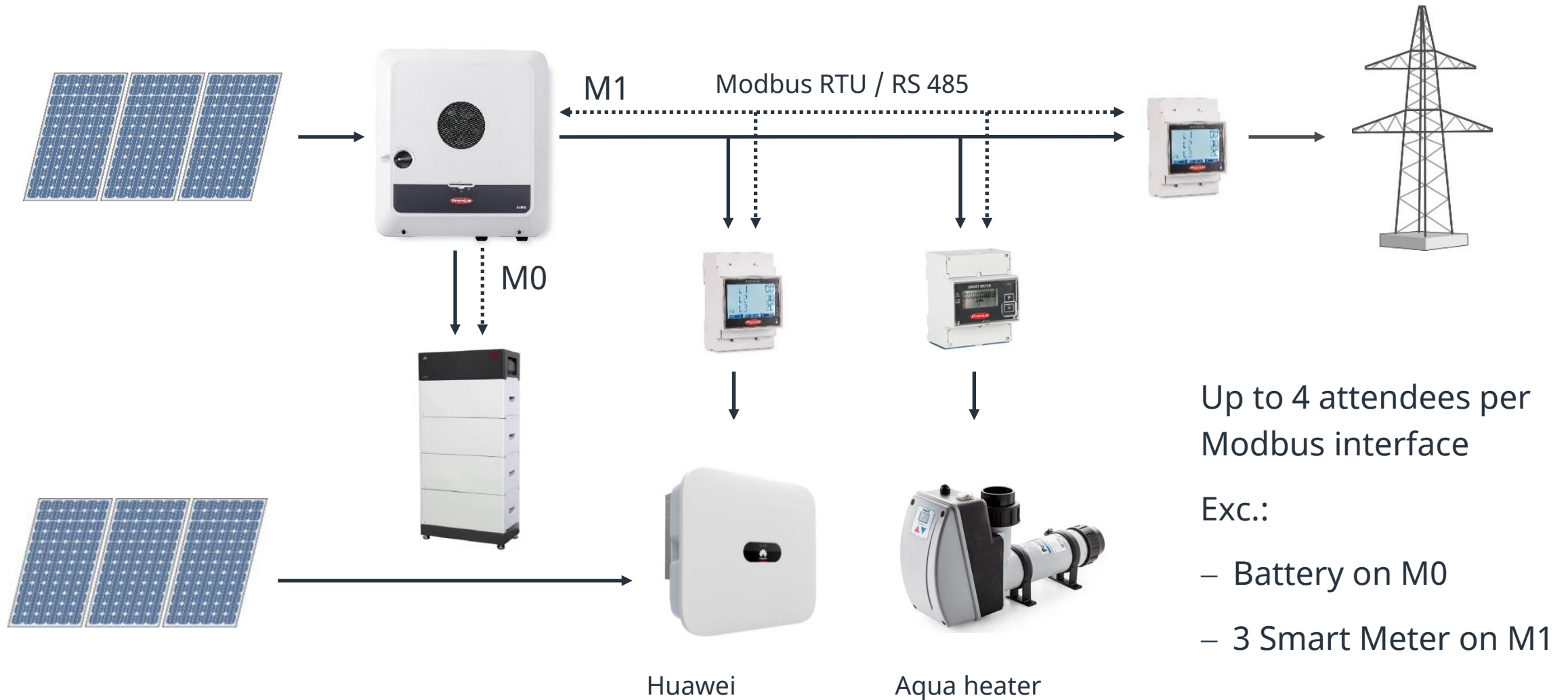
- Primary meter at feed-in point



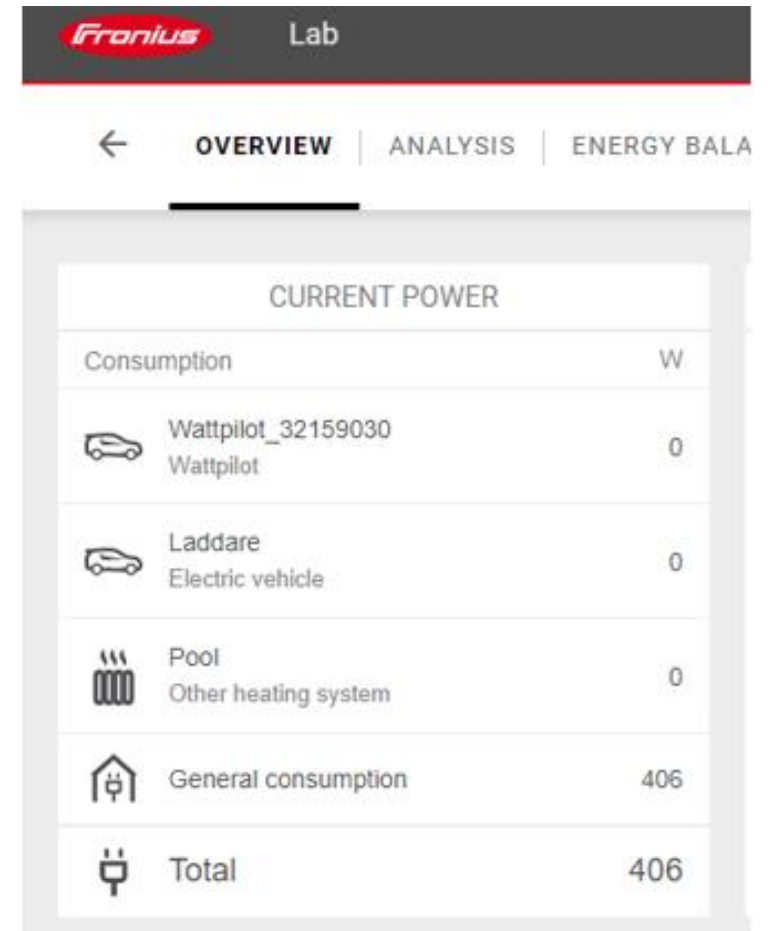
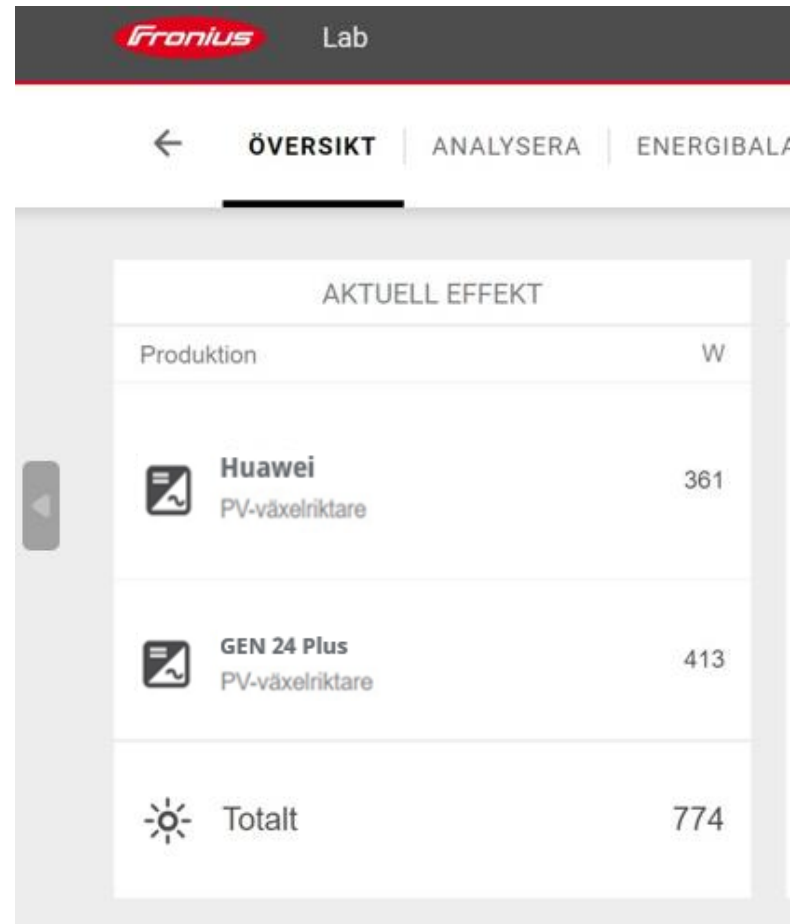
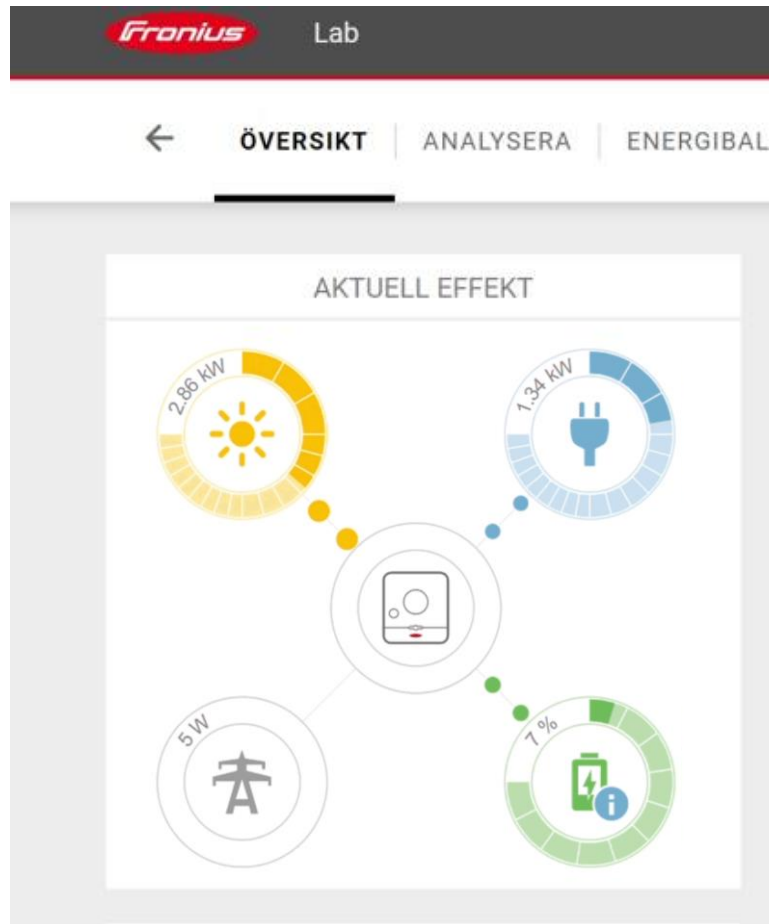
Visualization e.g with Smart Meter



Use of multiple Smart Meters



Visualization with multiple Smart Meters

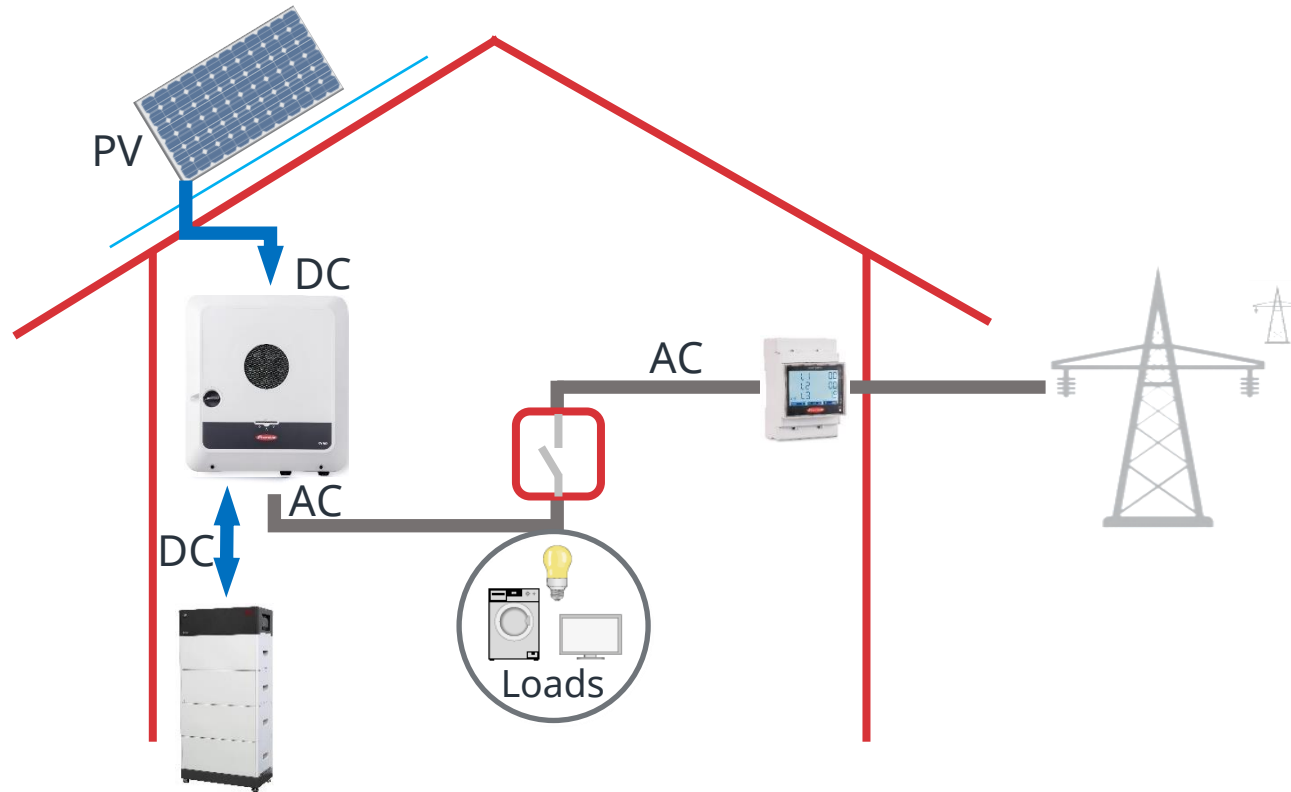




Battery storage

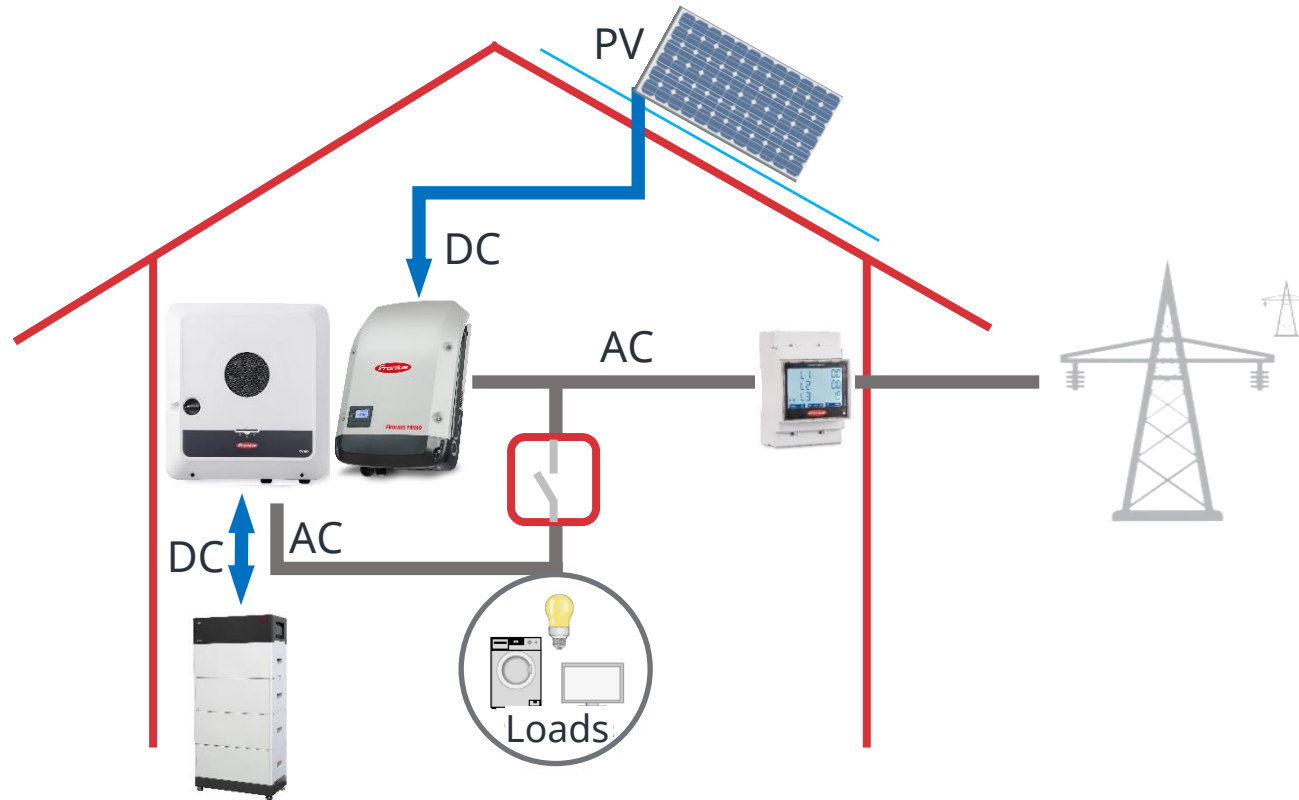
Highest efficiency

DC coupling

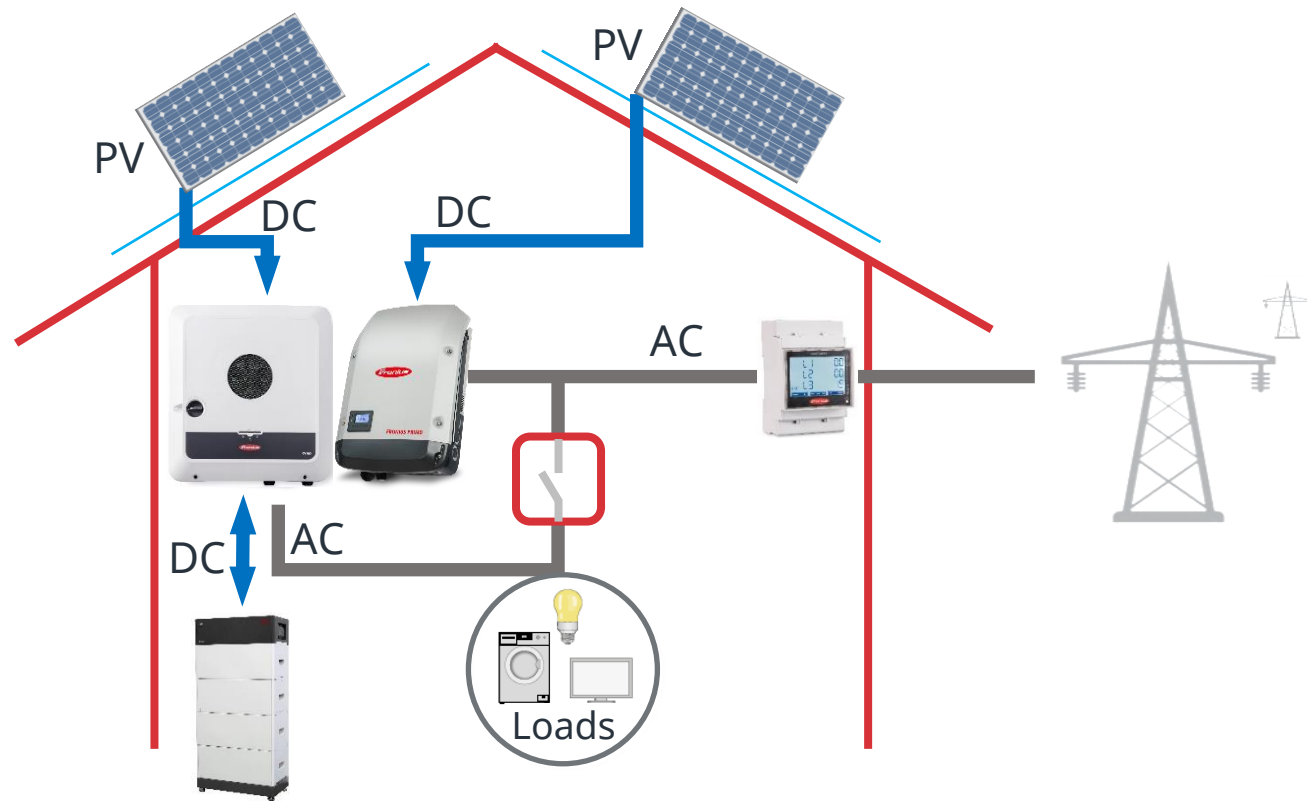


Easy retro-fit

AC coupling



AC- and DC coupling



Fronius Reserva



Fronius Reserva



Reserva 6.3

- Capacity: 6,31 kWh
- 2 battery modules
- Dimensions (HxWxD):
860 x 780 x 176 cm
- Weight: 86,5 kg

Reserva 9.5

- Capacity: 9,47 kWh
- 3 battery modules
- Dimensions (HxWxD):
1100 x 780 x 176 cm
- Weight: 120 kg

Reserva 12.6

- Capacity: 12,63 kWh
- 4 battery modules
- Dimensions (HxWxD):
1360 x 780 x 176 cm
- Weight: 153,5 kg

Reserva 15.8

- Capacity: 15,79 kWh
- 5 battery modules
- Dimensions (HxWxD):
1610 x 780 x 176 cm
- Weight: 187 kg

More Energy!

- Parallel connection of up to 4 towers!
- Maximum 63 kWh capacity
- NO combiner box necessary!



Nominal DC-charge/discharge power [kW]

with Fronius hybrid inverters*

	Reserva 6.3	Reserva 9.5	Reserva 12.6	Reserva 15.8
Symo GEN24 3.0 Plus	2.56 kW	3.0 kW	3.0 kW	3.0 kW
Symo GEN24 4.0 Plus	2.56 kW	3.84 kW	4.0 kW	4.0 kW
Symo GEN24 5.0 Plus	2.56 kW	3.84 kW	5.0 kW	5.0 kW
Symo GEN24 6.0 Plus	4.5 kW	6.0 kW	6.0 kW	6.0 kW
Symo GEN24 8.0 Plus	4.5 kW	6.75 kW	8.0 kW	8.0 kW
Symo GEN24 10.0 Plus	4.5 kW	6.75 kW	9.01 kW	10.0 kW
Symo GEN24 12.0 Plus SC	4.5 kW	6.75 kW	9.01 kW	11.26 kW
Verto Plus 15.0	6.55 kW	9.83 kW	13.1 kW	15.0 kW
Verto Plus 17.5	6.55 kW	9.83 kW	13.1 kW	16.38 kW
Verto Plus 20.0	6.55 kW	9.83 kW	13.1 kW	16.38 kW
Verto Plus 25.0	6.55 kW	9.83 kW	13.1 kW	16.38 kW
Verto Plus 30.0	6.55 kW	9.83 kW	13.1 kW	16.38 kW
Verto Plus 33.3	6.55 kW	9.83 kW	13.1 kW	16.38 kW

Fronius Reserva PRO



Parallel Connection

- **Parallel connection up to 4 identical towers!**
- **Max. 128 kWh Capacity**
 - 32 / 64 / 96 / 128 kWh
- **No Combiner-Box required!**



Charging- Discharging power

Fronius Reserva Pro	Battery Module	Primo GEN24 Plus	Symo GEN24 Plus	Charge/-Discharge Power GEN24 12.0 SC	Charge/-Discharge Power Verto Plus
12	3	✓	✓	Up to 4.7 kW	Up to 10.6 kW
16	4	✓	✓	Up to 6.2 kW	Up to 14.2 kW
20	5	✓	✓	Up to 7.8 kW	Up to 17.7 kW
24	6	-	✓	Up to 9.4 kW	Up to 21.3 kW
28	7	-	✓	Up to 10.9 kW	Up to 24.8 kW
32	8	-	✓	Up to 12.5 kW	Up to 28.3 kW

Other Battery storage systems

Fronius GEN24 Plus



Primo 3-6 kW AC
Symo 3-12 kW AC



LG Flex 8.6 – 17.2 kWh



BYD Battery-Box Premium
HVS 5.1-12.8 kWh
HVM 11-22.1 kWh

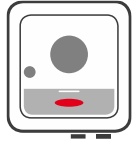
Compatibilities and maximum charge/discharge power:

Nominale DC-Lade-/ Entladeleistung mit GEN24 Plus [kW] *	LG FLEX		
	8.6	12.9	17.2
Symo GEN24 3.0 Plus	2,94	3,15	3,15
Symo GEN24 4.0 Plus	2,94	4,18	4,18
Symo GEN24 5.0 Plus	2,94	5,20	5,20
Symo GEN24 6.0 Plus	5,17	6,22	6,22
Symo GEN24 8.0 Plus	5,17	7,74	8,26
Symo GEN24 10.0 Plus	5,17	7,74	10,30
Symo GEN24 12.0 Plus SC	5,17	7,74	10,30

* This data refers to the DC charge and discharge power. The DC discharge power varies from the AC power that reaches the loads in the home, since the efficiency rate of the inverter must also be included here.



BYD: PARALLEL OPERATION



FRONIUS
GEN24 PLUS

STORAGE CASCADING

Parallel operation of up to 3 storage units

HVS 38,4 kWh - HVM 57.96 kWh*

Realisation of small commercial systems

Full backup power capability



* Attention:
The combination of 3x HVM
22.1 is not possible!

Compatibilities and maximum charge/discharge power:

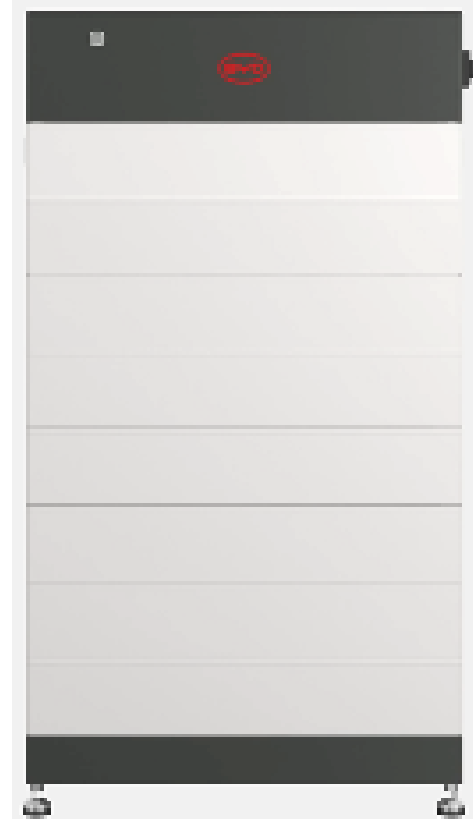
Nominal DC charge/ discharge power with GEN24 Plus [kW] *	BYD Battery-Box Premium								
	HVS				HVM				
	HVS 5.1	HVS 7.7	HVS 10.2	HVS 12.8	HVM 11.0	HVM 13.8	HVM 16.6	HVM 19.3	HVM 22.1
Symo GEN24 3.0 Plus	2.56	3.15	3.15	3.15	2.56	3.15	3.15	3.15	3.15
Symo GEN24 4.0 Plus	2.56	3.84	4.18	4.18	2.56	3.20	3.84	4.18	4.18
Symo GEN24 5.0 Plus	2.56	3.84	5.20	5.20	2.56	3.20	3.84	4.48	5.20
Symo GEN24 6.0 Plus	4.51	6.22	6.22	6.22	4.51	5.63	6.22	6.22	6.22
Symo GEN24 8.0 Plus	4.51	6.76	8.26	8.26	4.51	5.63	6.76	7.88	8.26
Symo GEN24 10.0 Plus	4.51	6.76	9.01	10.30	4.51	5.63	6.76	7.88	9.01
Symo GEN24 12.0 Plus SC	4.51	6.76	9.01	11.26	4.51	5.63	6.76	7.88	9.01
Verto Plus	5.10	7.70	10.20	12.80	10.20	12.80	15.35	17.90	20.45

[illegible]

BYD HVB

BYD HVB (Blade)

- up to 29,6 kWh | 25,6 kW
up to 89,7 kWh | 25,6 kW.



System control

Time of use feature – GEN24

Time of use feature - WebUI GEN24

Available as of July 2022 with firmware 1.21

Charging and discharging of the battery at a defined date and time

Charging and discharging power can be set.



Fronius Energy Cost Assistant

Designed to assist.



How it works

Inclusion of 4 parameters

- Forecast of production
- Forecast of consumption
- Flexible electricity tariff
- Battery state of charge (current and forecast)

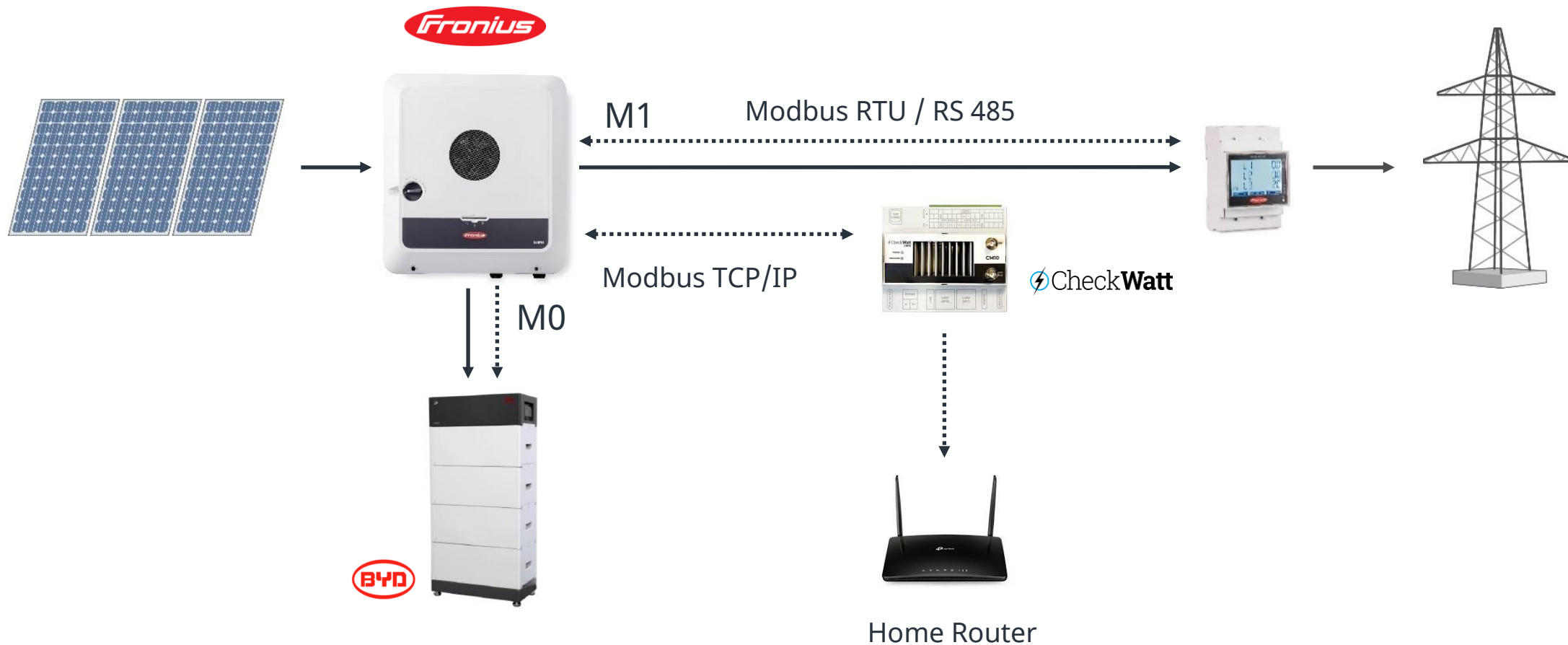


- Limits the discharge of the battery when high consumption is expected
- Charges the battery when the tariff is favorable

Checkwatt



GEN24 with Checkwatt CM10



ENEQUI





Nytt samarbete: Fronius och Enequi!

Enastående effektivitet, betydande
kostnadsbesparingar. Det är vad Fronius GEN24 Plus
och Enequi Core står för.





Other control systems
in the market



IntelliCharge.AI

<https://www.intellicharge.ai>

MARKEDROID

<https://www.markedroid.com>

 **Spotpilot**

Personal energy trader

<https://www.spotpilot.io/sv-se>

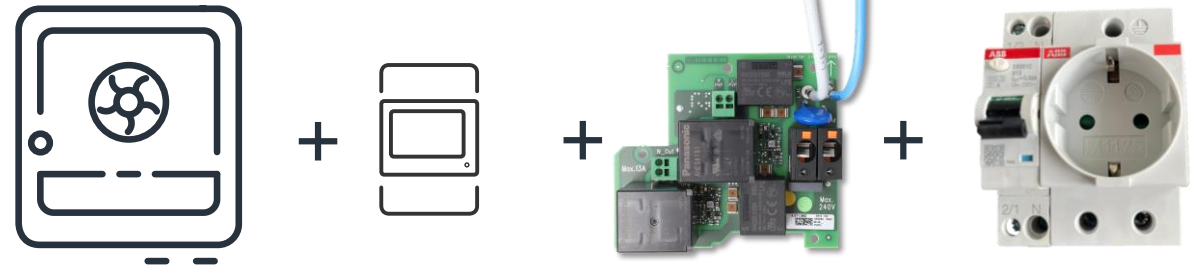


Fronius Backup
Solutions!

PV Point

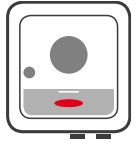
PV Point

PV Point Comfort
[already available]

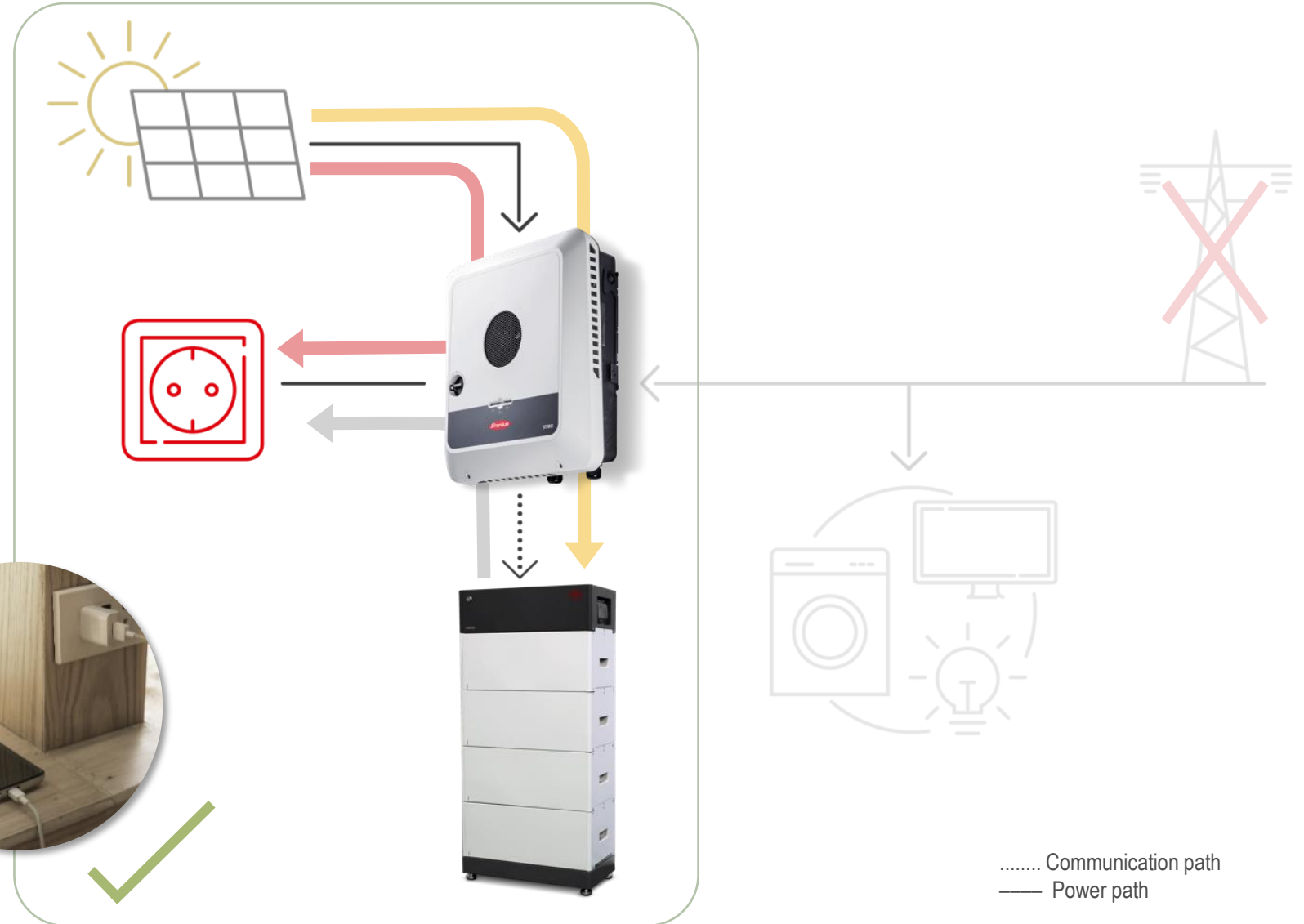


PV Point	Functions	PV Point Comfort
3 kW, single phase	Nominal output in backup power mode	3 kW, single phase
Integrated	Integrated/Retrofit	Retrofit PCB (4,240,315,CK)
Only in backup mode	Supply of loads	Permanant
RCD Type A 30 mA	Fusing	RCD Type A 30 mA + 13 A circuit breaker

Basic grid backup: PV Point



FRONIUS
GEN24 PLUS

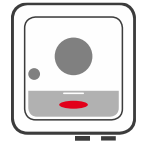


Symo GEN24

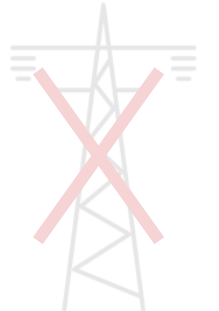
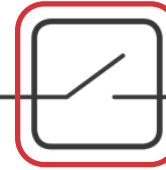
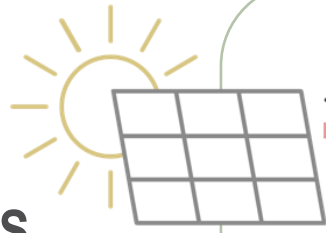
Full-Backup



Maximum backup power: Full backup



FRONIUS
GEN24 PLUS



..... Communication path
—— Power path

Full Backup

Manual switching



Fronius Backup Switch
63A: 15 – 33 kW

Automatic switching



Fronius Backup Controller
15 – 20 kW
3PN-35A



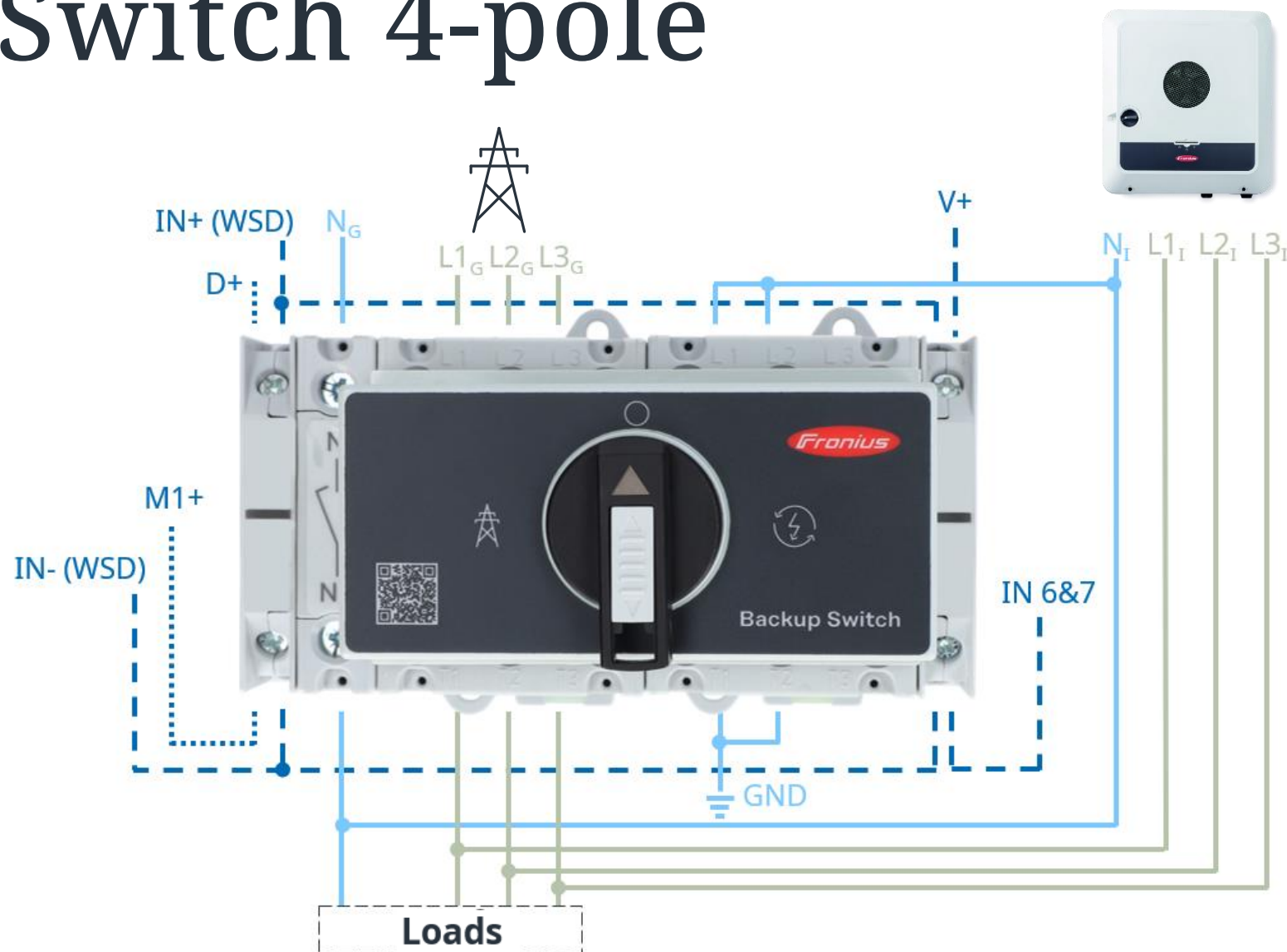
Enwitec
25 – 33 kW
PowerBackup 63 VERTO PLUS DE
[Link](#)

Wiring-Connection area

Backup Switch 4-pole

Backup Switch
1PN/3PN-63A

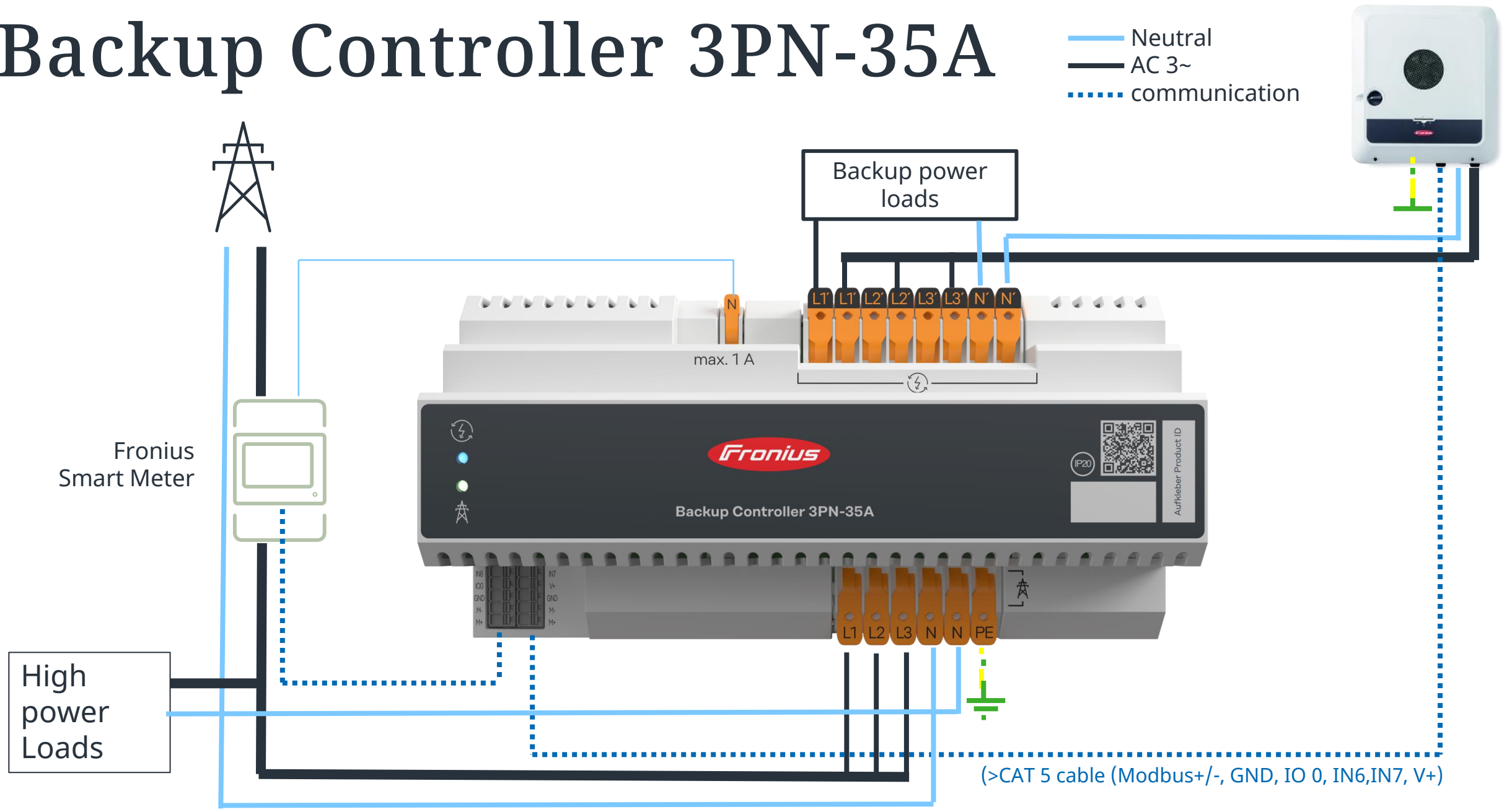
3PN-separation



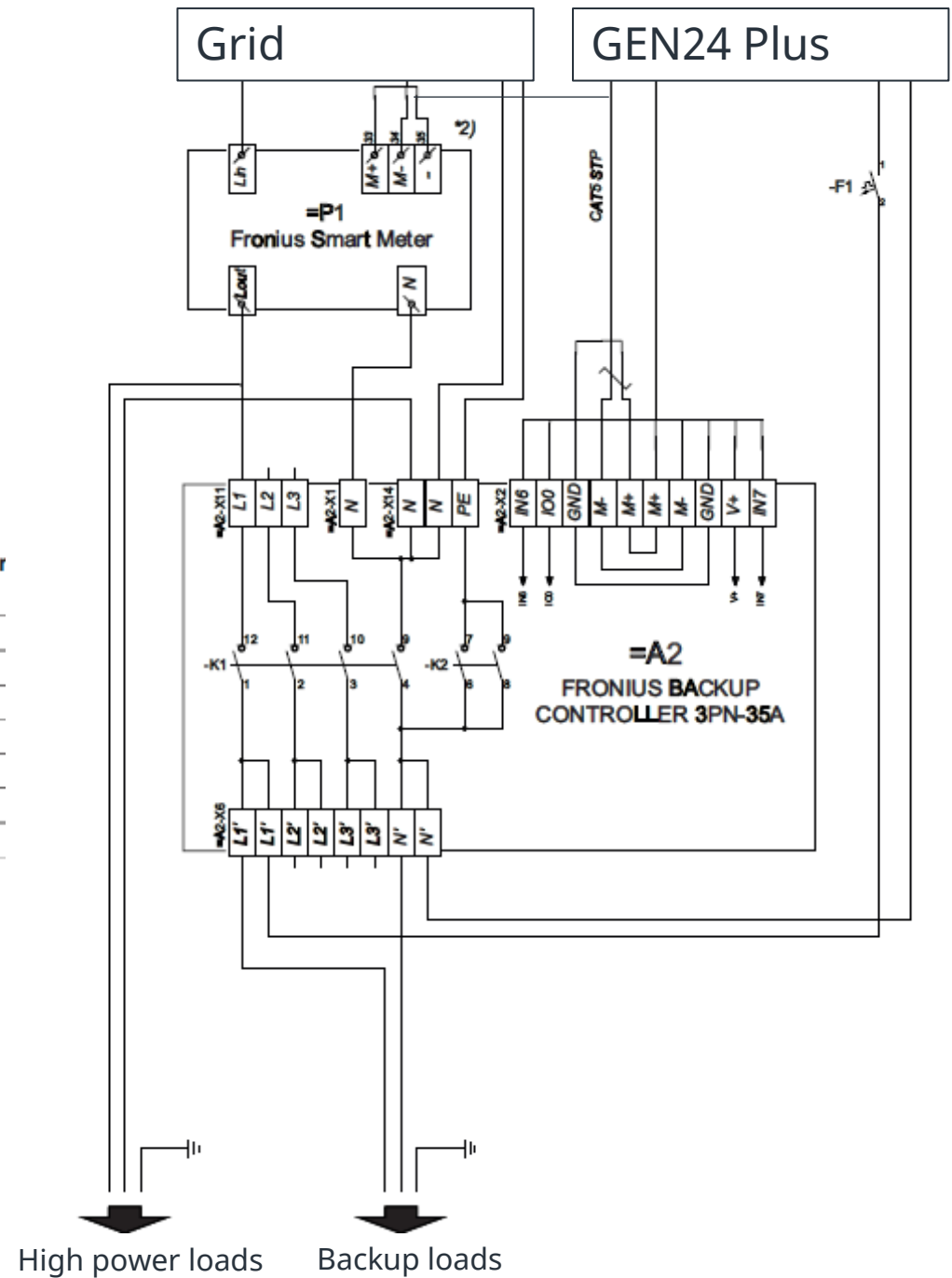
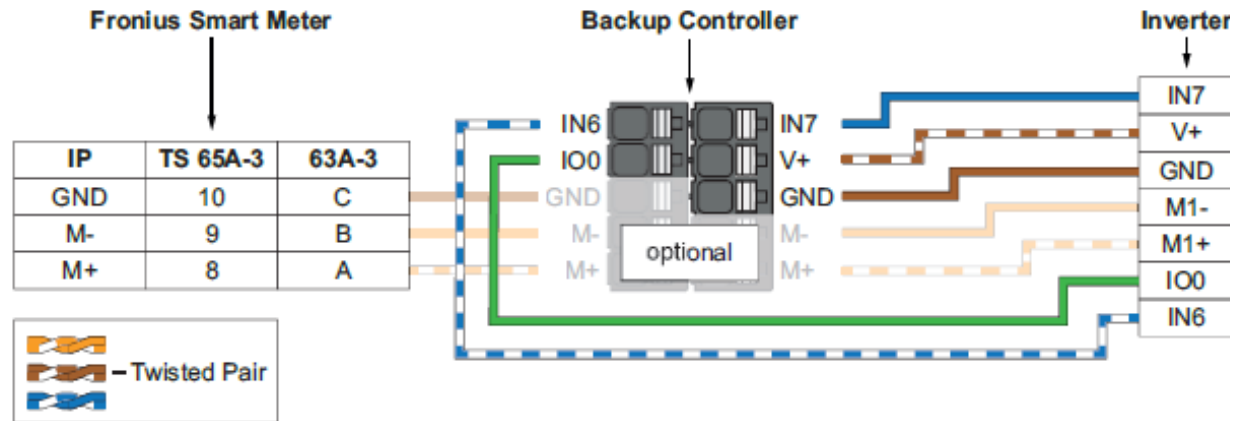
- Neutral
- AC 3~
- Modbus RTU
- - - 12V control signal

Backup Controller 3PN-35A

- Neutral
- AC 3~
- ... communication



Wiring diagrams



Commissioning GEN24 Plus



← Device Configuration

Components

Functions and I/Os

Inverter

Functions and I/Os

V+/GND		IO			I		
V+	V+	0	2	4	6	8	10
GND	GND	1	3	5	7	9	11

Backup Power

CONFIGURATION

Backup Power Mode
Off

Backup Nominal Voltage
230 V

SoC warning level
7 %

Reserve Capacity
7 %

I/Os

Note
No pin configuration required!

Activation PV-Point or Full Backup →

Further Information

Data security

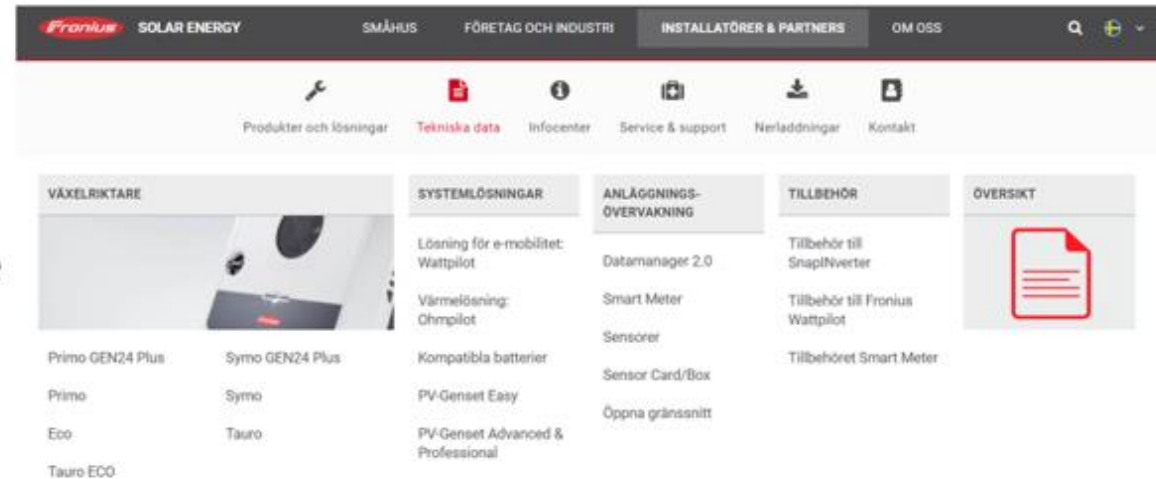
Sustainably safe with Fronius



- Data locations: Fronius uses its **own servers in Austria and European clouds** for data security
- ISO 27001 certification: Fronius has received ISO 27001 **certification for information security**
- Data protection and separation: Customer data and system data are **stored separately** to prevent cyberattacks
- Awareness: **Regular cybercrime awareness training** for employees

More information

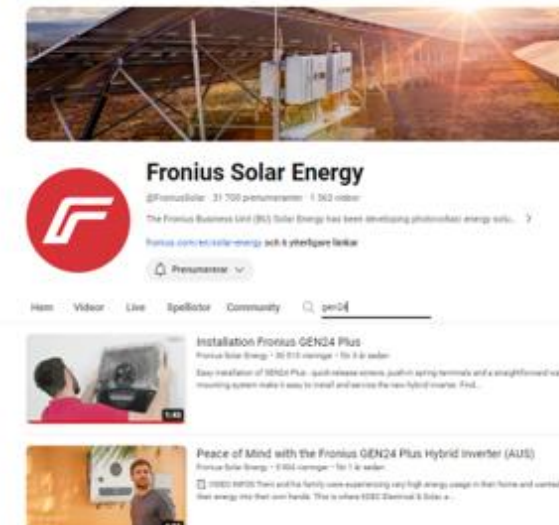
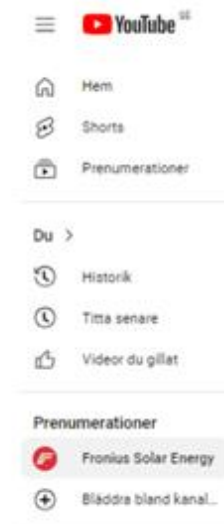
Information center for installers – directly retrievable on our homepage
www.fronius.com



Fronius YouTube channel

- How-to-videos
- Webinars

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