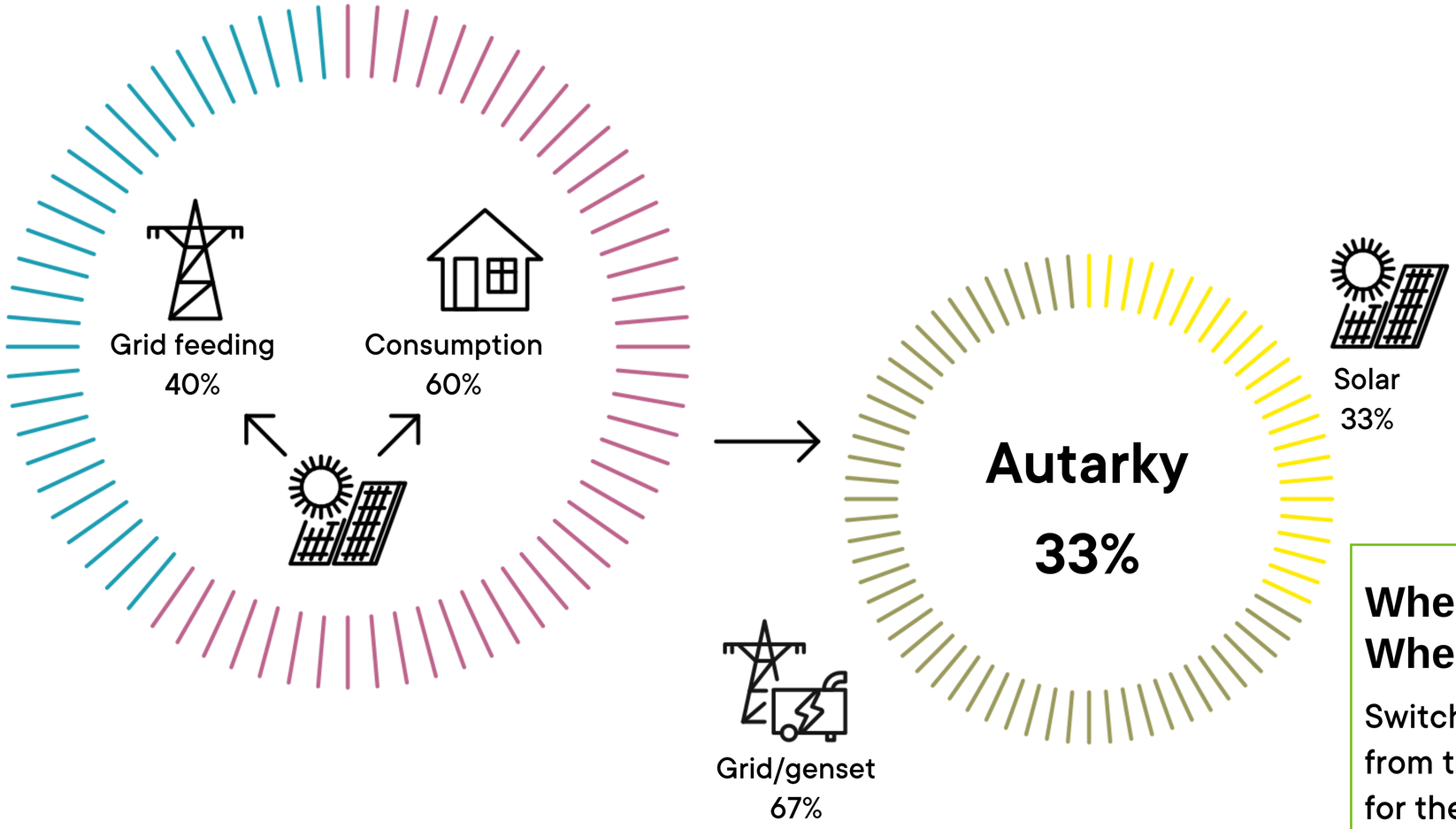
pv magazine spotlight

STUDER

Ready for solar autarky

High reliability swiss made power since 1987

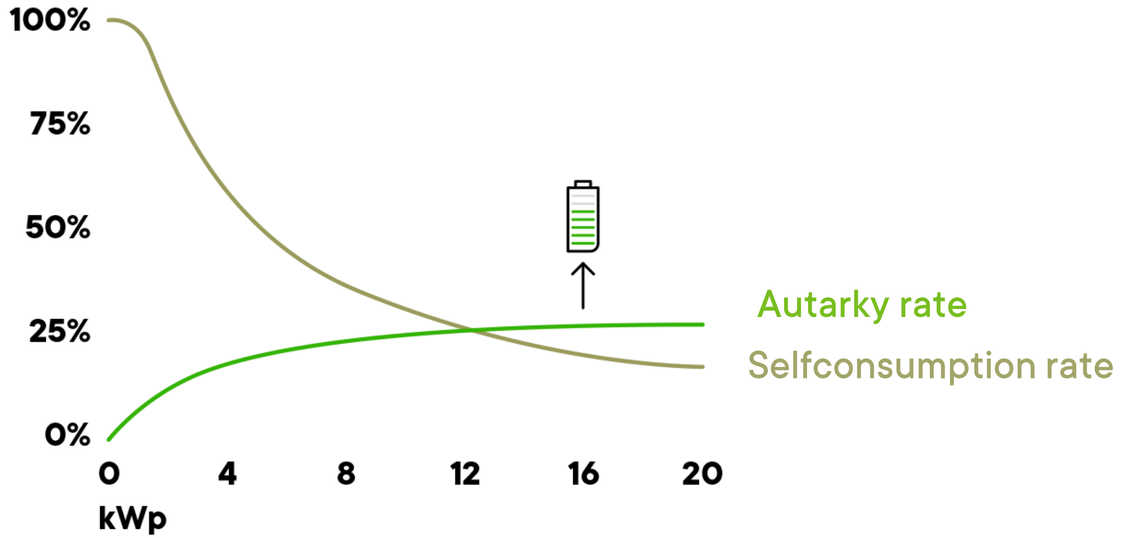


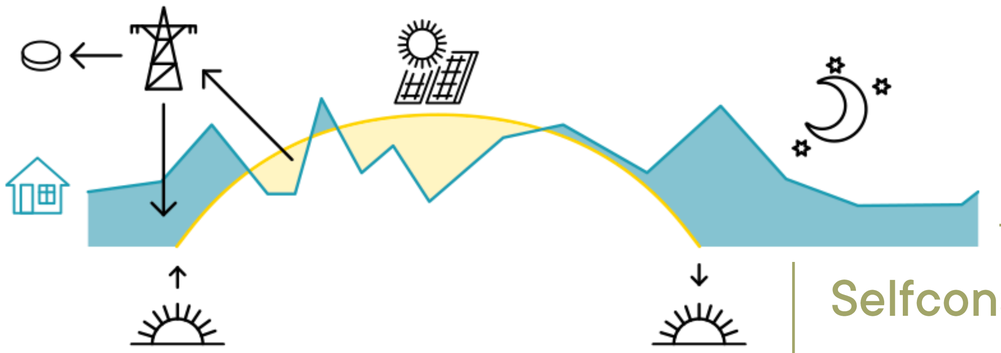
Where your solar energy goes to?
Where your energy comes from?

Switch the point of view
from the production to the consumption
for the energy transition

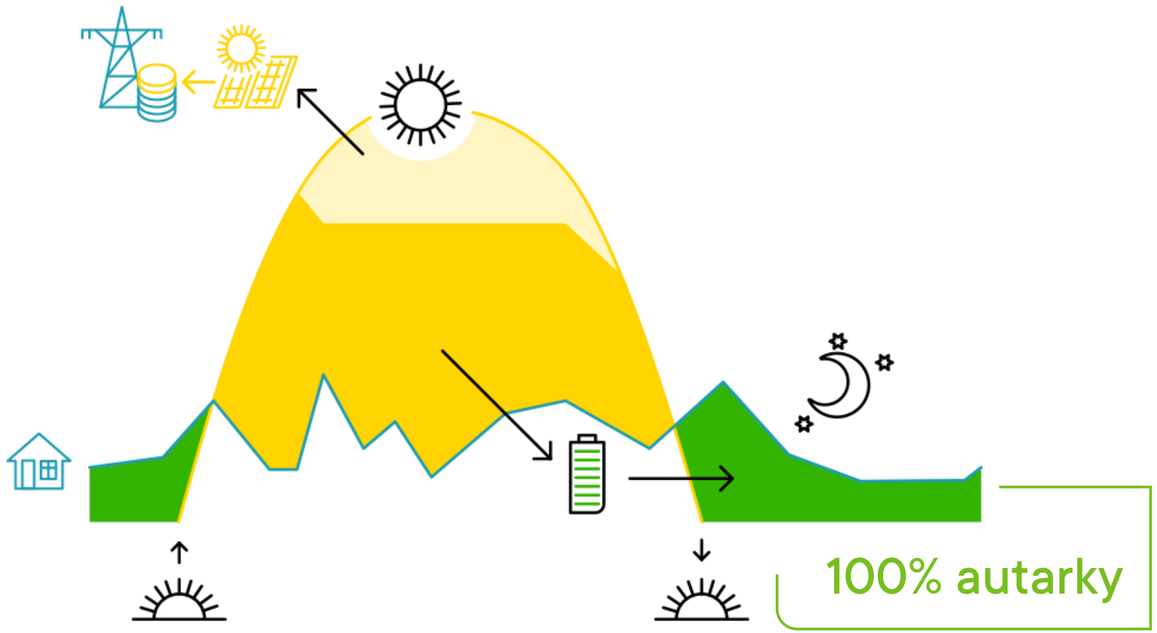
From self consumption to autarky

Autarky



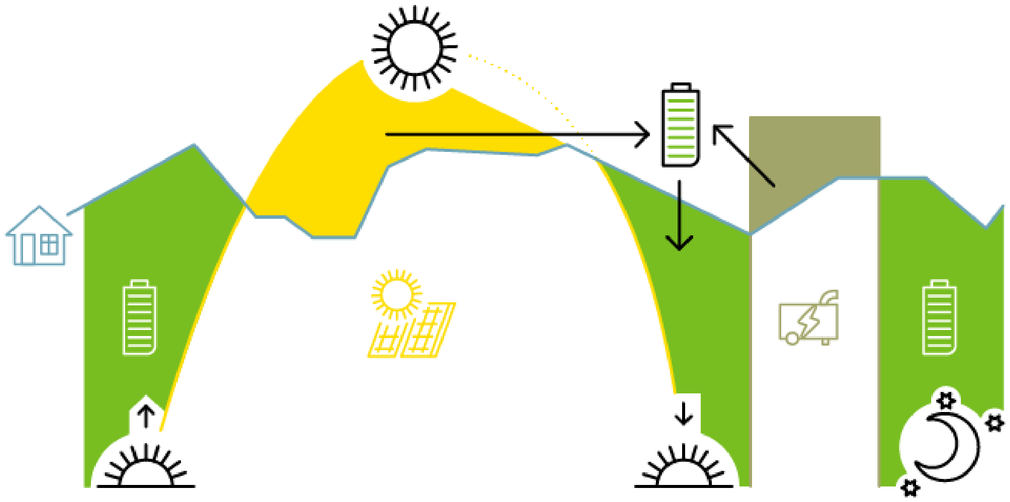


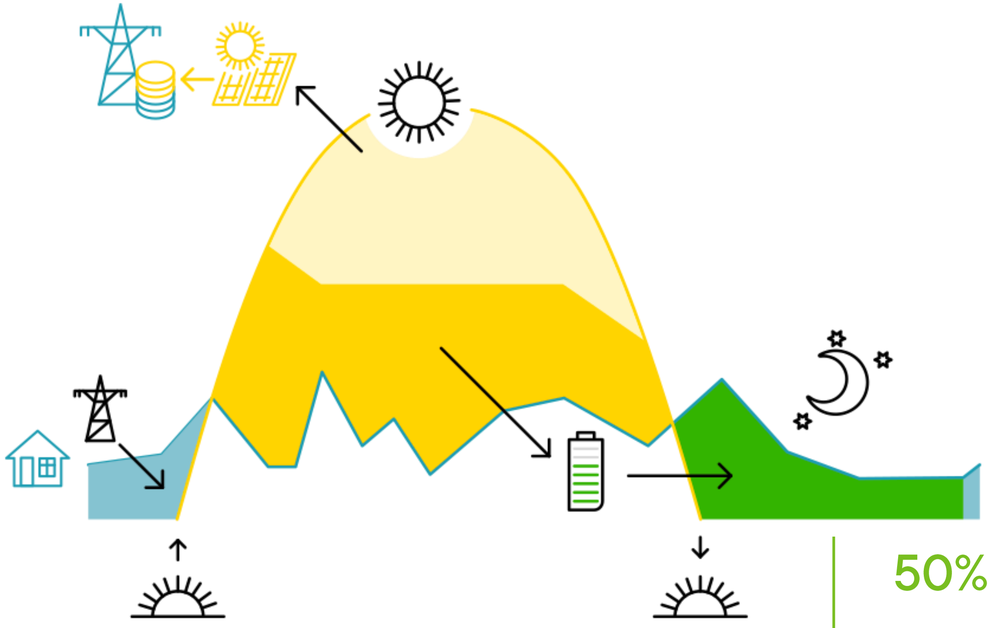
Selfconsumption



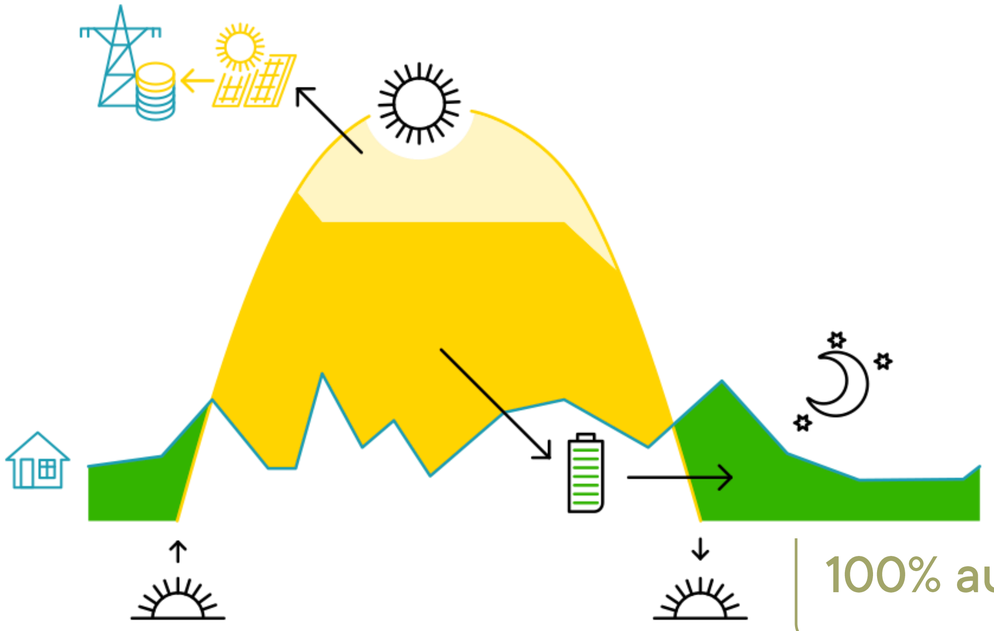
100% autarky

Fully solar in offgrid





50% autarky



100% autarky

AC flex

2nd AC source or AC loads

AC source

3 x 80A AC input, grid ready EU LV

AC loads

3-Phase 16kVA (up to 30kVA, 5sec)

Solar PV

2 MPPT inputs 2 x 8 kW

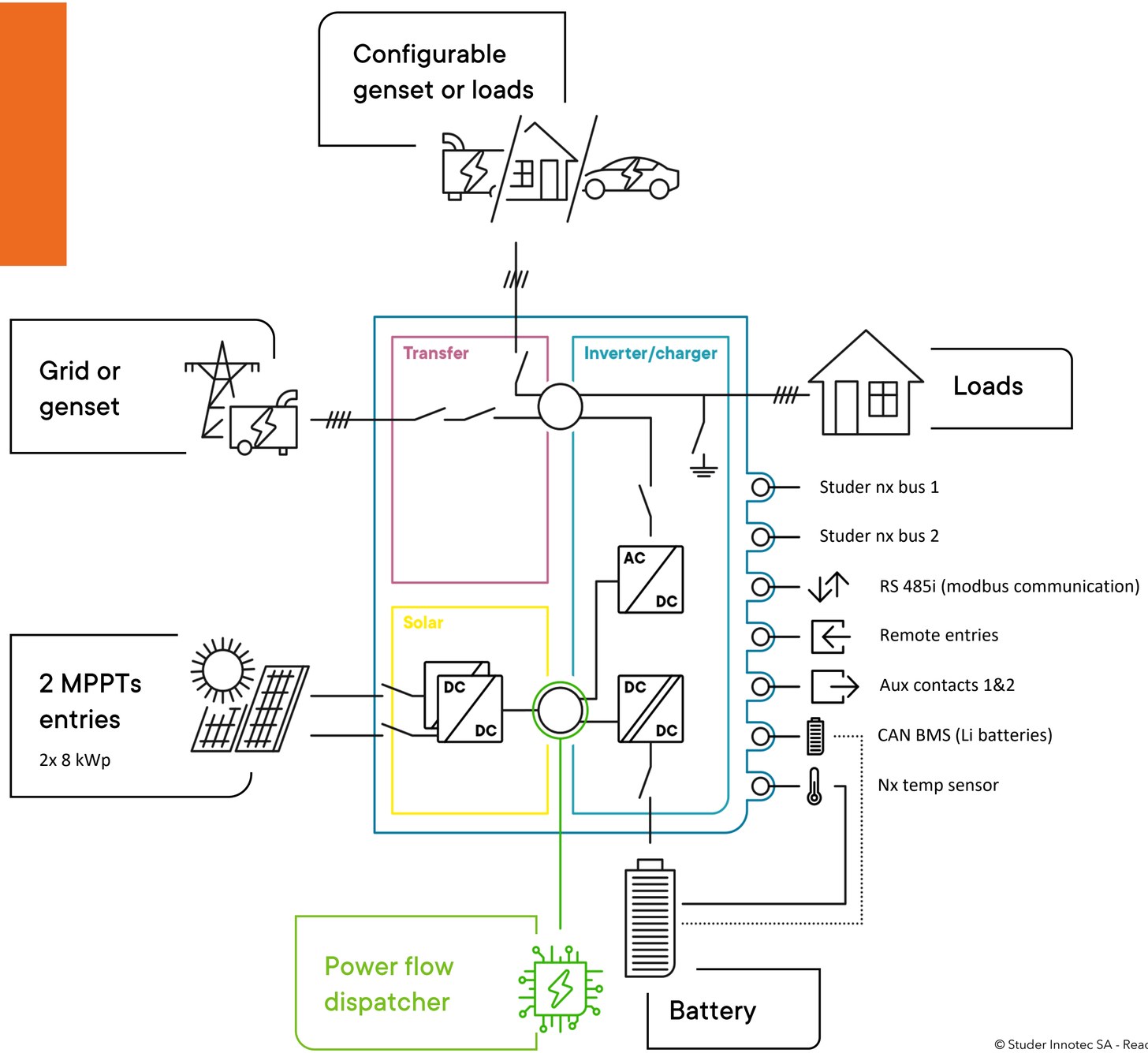
nx interface

nextOS platform

Battery

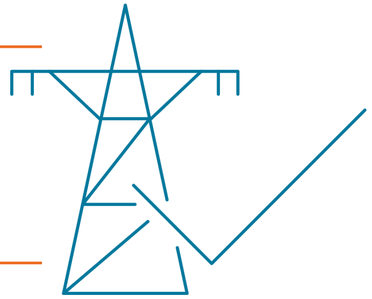
48V Lead-acid or lithium battery

Internal architecture



Special features

Full grid interactive

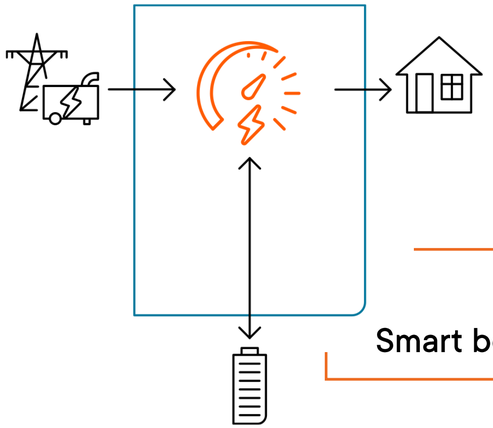


Surge power:

30kVA with solar

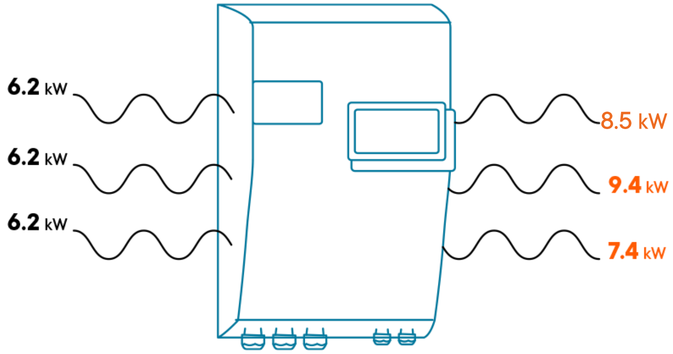
25kVA on batt

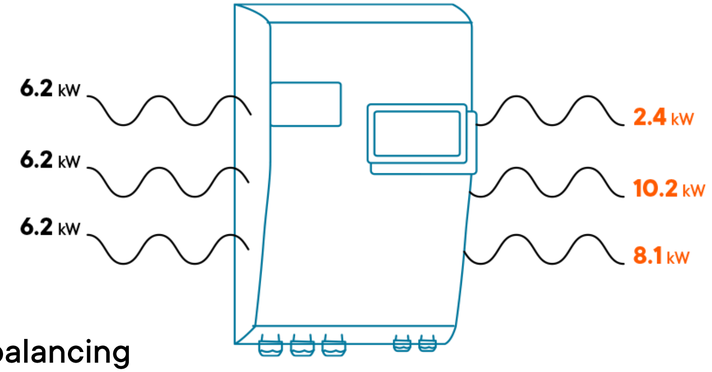
10kVA on 1phase



Smart boost

Peak shaving

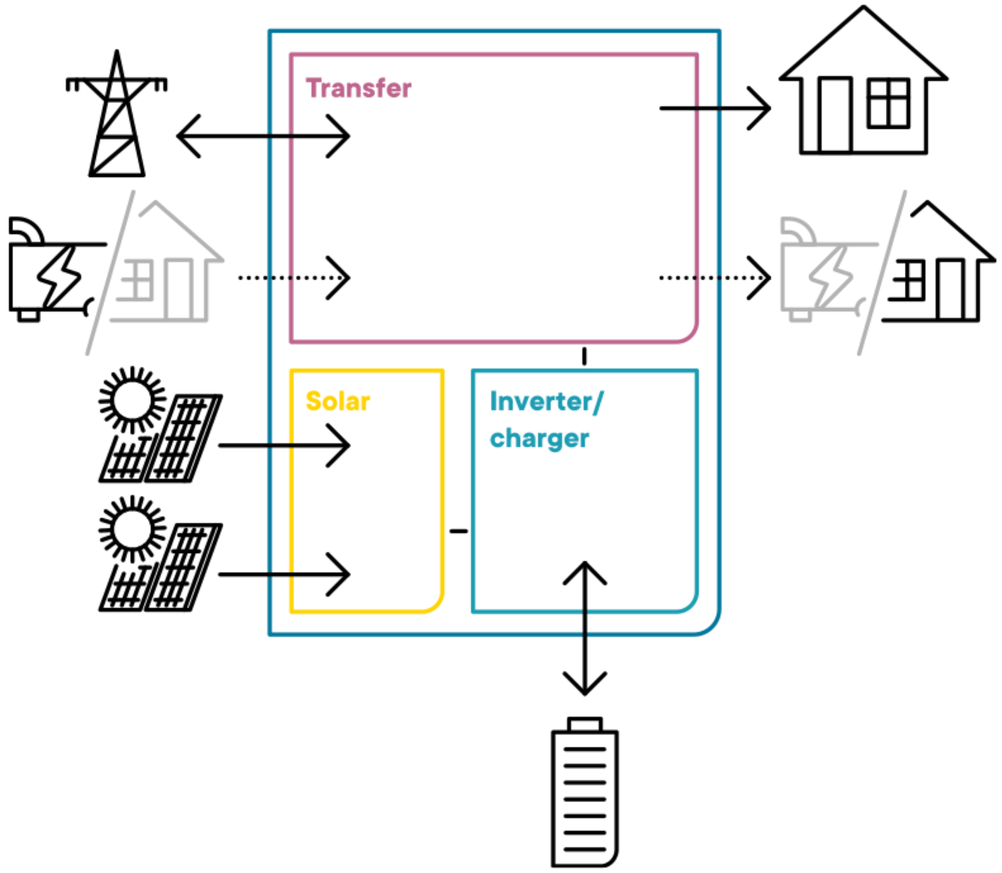




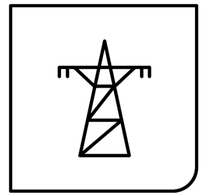
Phase balancing

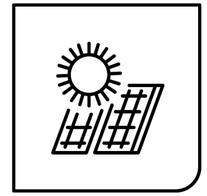
AC flex, solar mobility

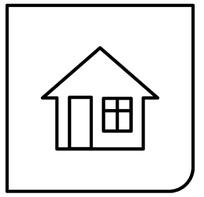
Advanced AC sources and loads management



AC flex, solar mobility







Advanced AC sources and loads management

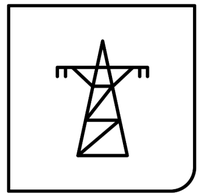
AC flex is interesting for energy monitoring

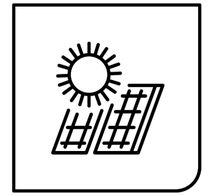
Separated measurement and monitoring

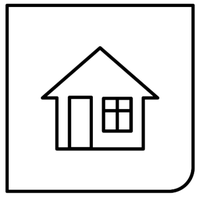
AC flex is interesting for energy monitoring

Separated measurement and monitoring

AC flex, critical loads

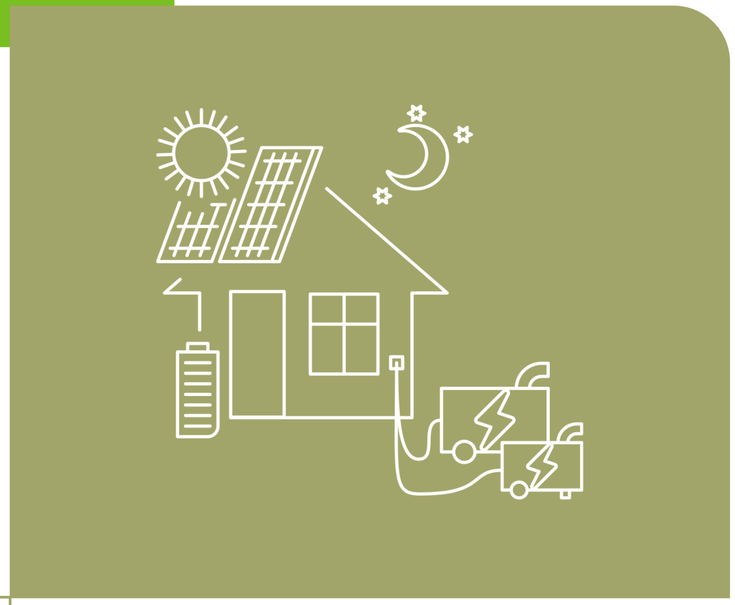


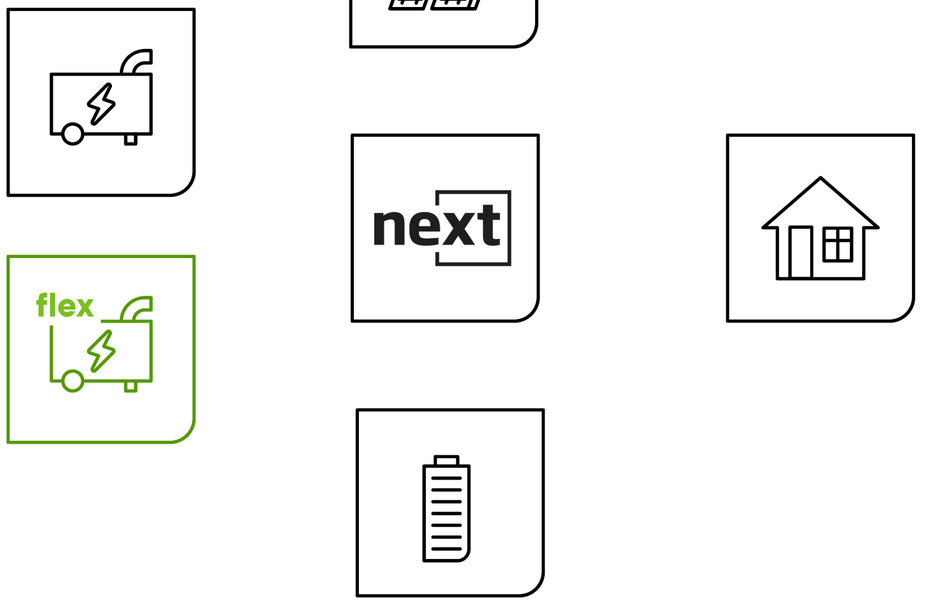




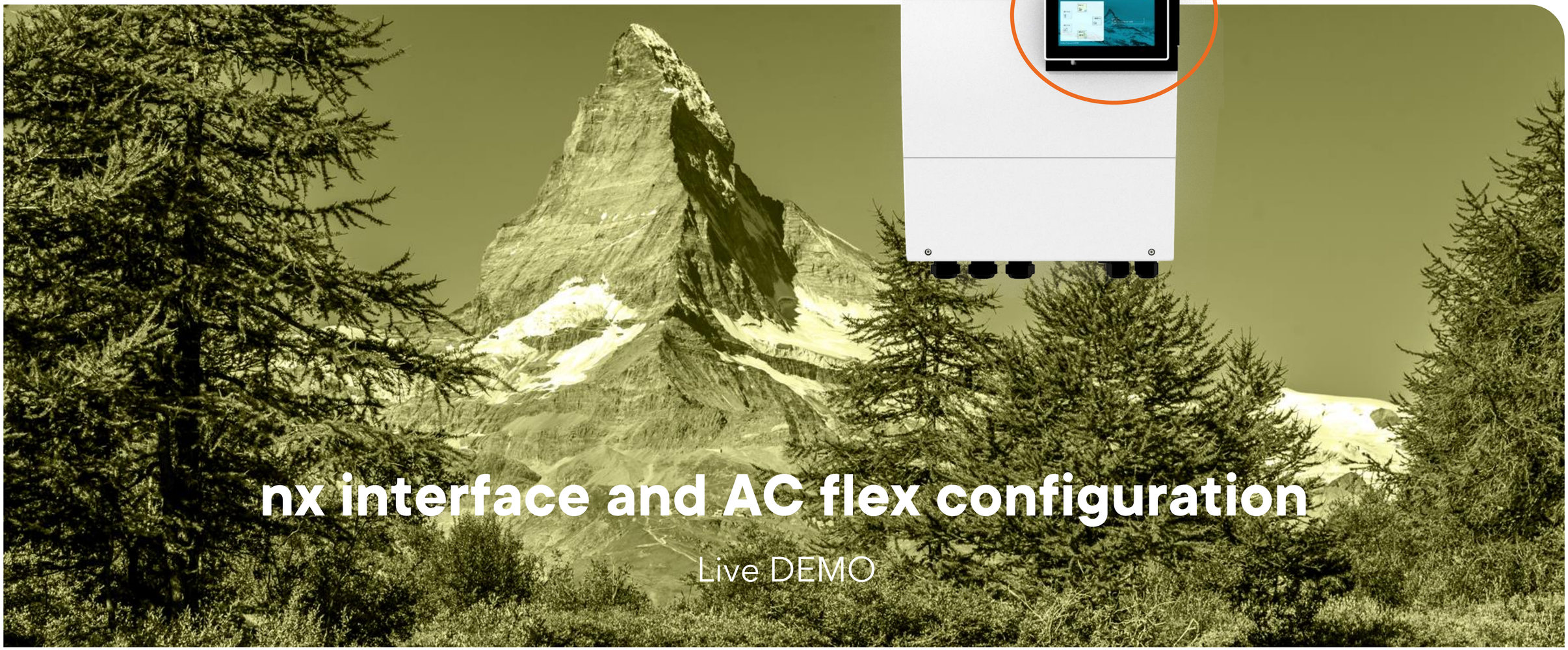
Advanced AC sources and loads management

AC flex, second genset





Advanced AC sources and loads management



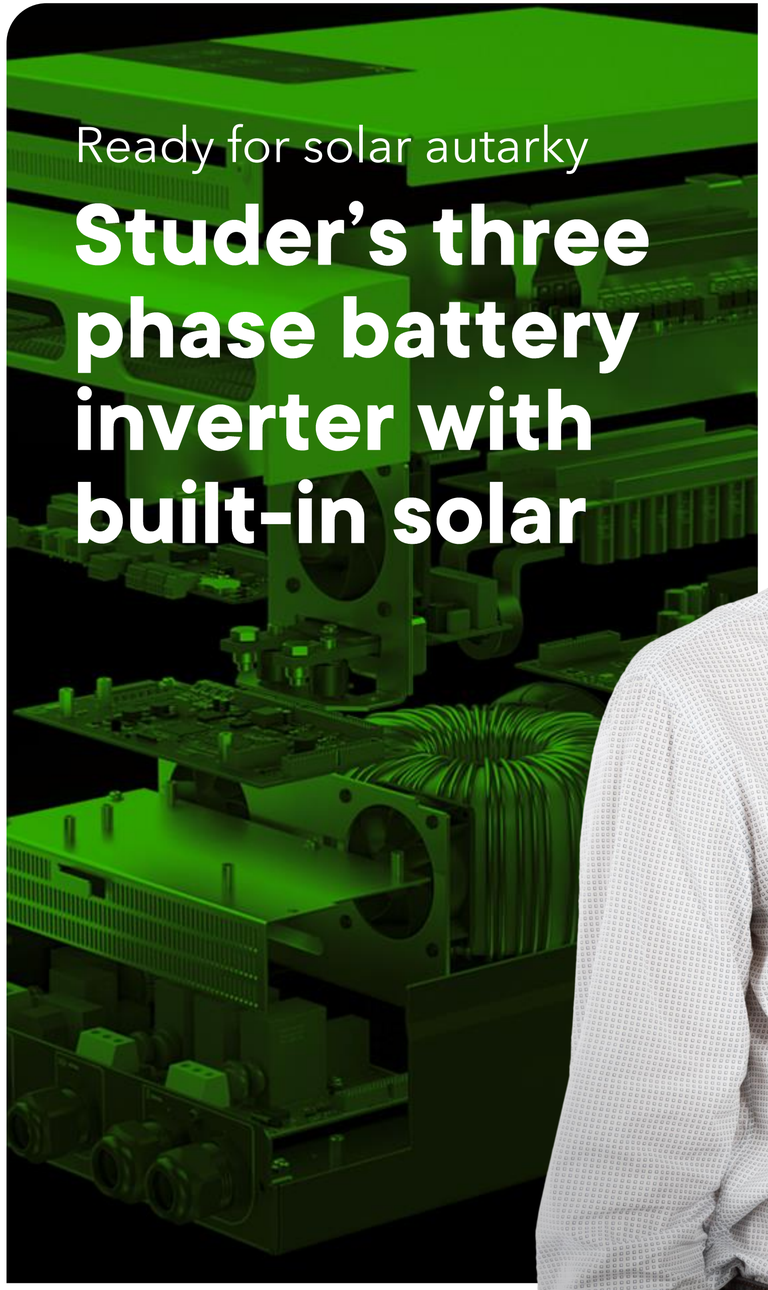
nx interface and AC flex configuration

Live DEMO

Autarky from the Swiss Alps to your house

Conclusion

Mountain hut
at 3256m



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STUDER

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CTO + board member

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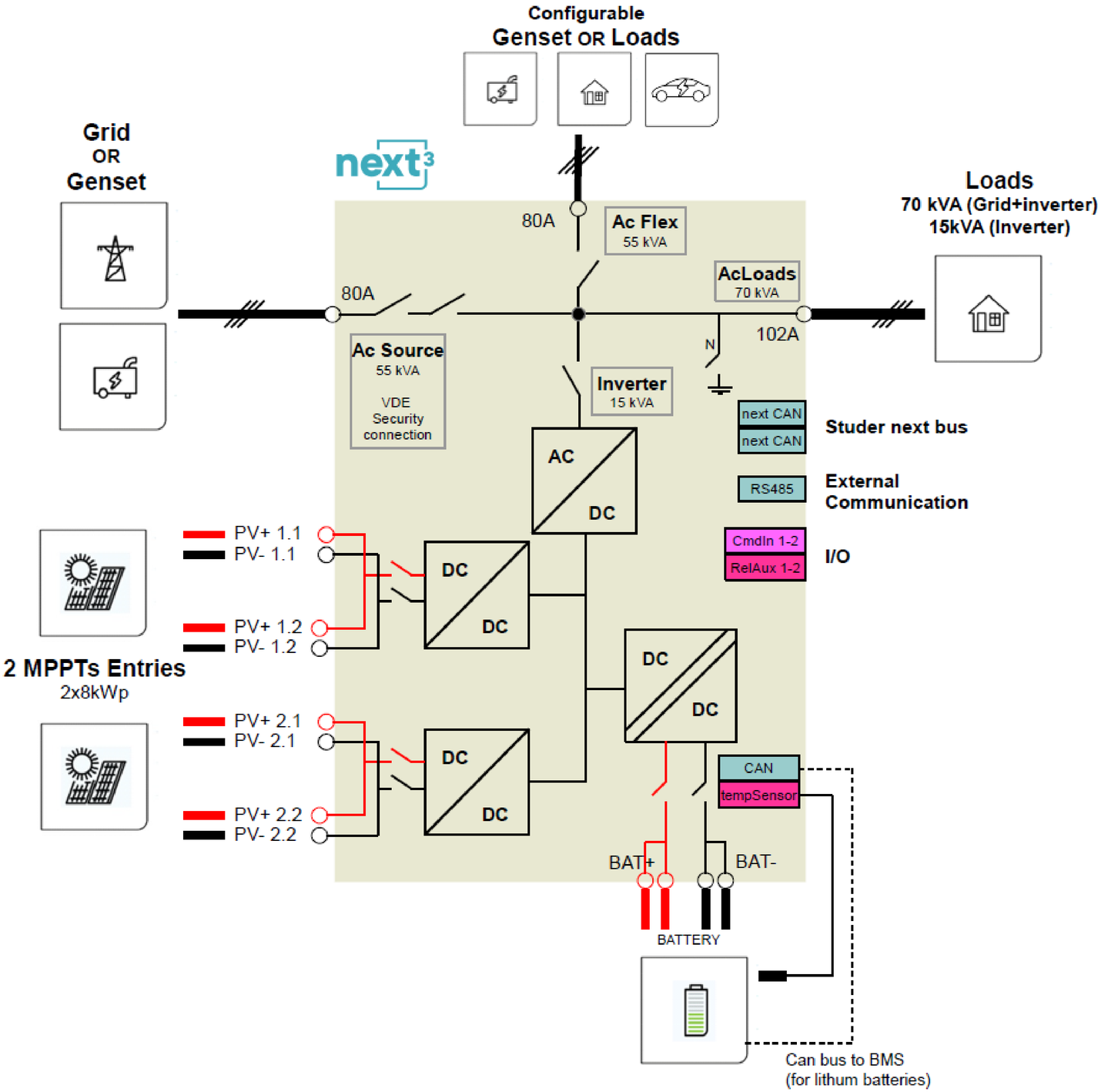
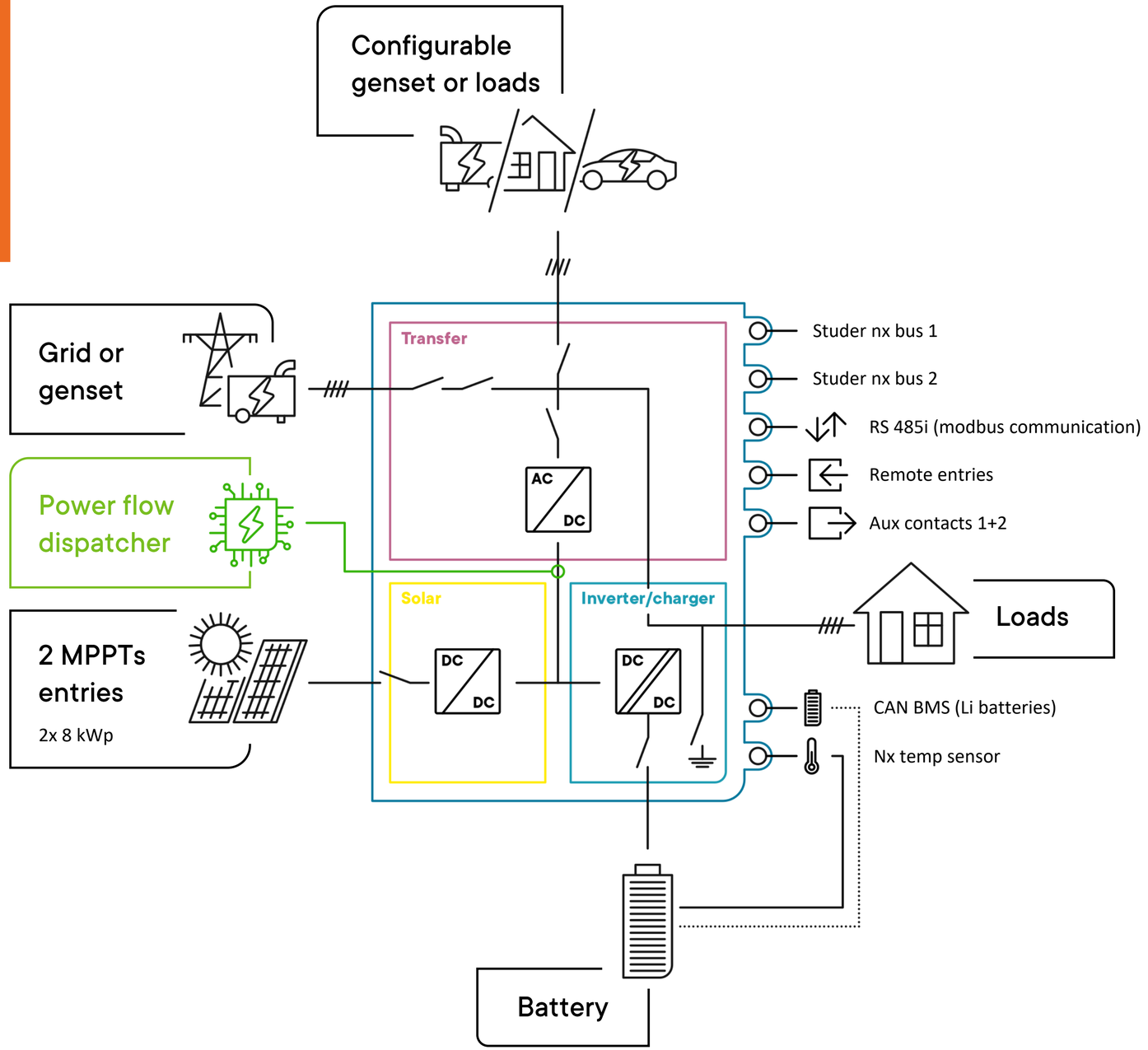
BACKUP SLIDES


Configurable
Genset OR Loads
Grid
OR
Genset
next3
80A
Ac Flex
55 kVA
Loads
70 kVA (Grid+inverter)
15kVA (Inverter)
AcLoads
70 kVA
80A
102A
N
Ac Source
55 kVA
VDE
Security
connection
Inverter
15 kVA
next CAN
next CAN
Studer next bus
AC
DC
RS485
External
Communication
Cmdln 1-2
RelAux 1-2
I/O
PV+ 1.1
PV- 1.1
PV+ 1.2
PV- 1.2
DC
DC
DC
DC
2 MPPTs Entries
2x8kWp
PV+ 2.1
PV- 2.1
PV+ 2.2
PV- 2.2
DC
DC
CAN
tempSensor
BAT+
BAT-
BATTERY
Can bus to BMS
(for lithum batteries)

Internal architecture (single line)



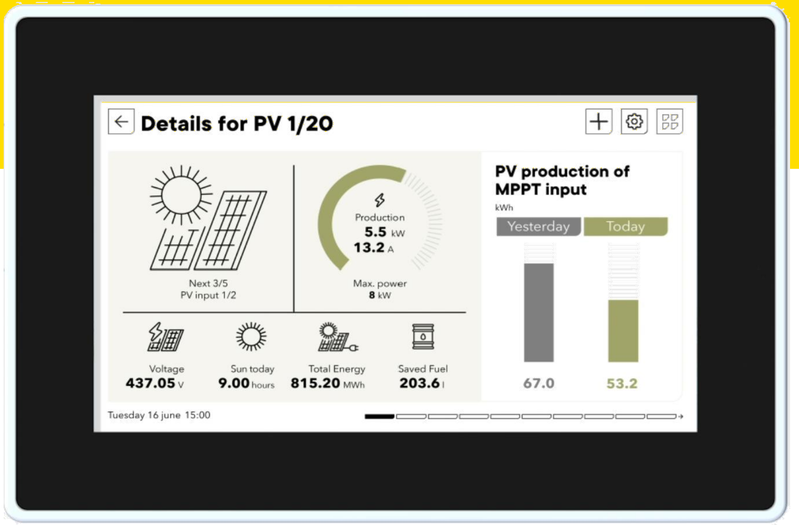
Solar

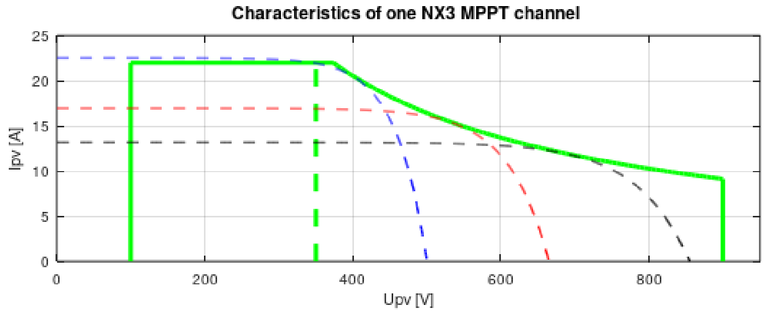
DC-DC:

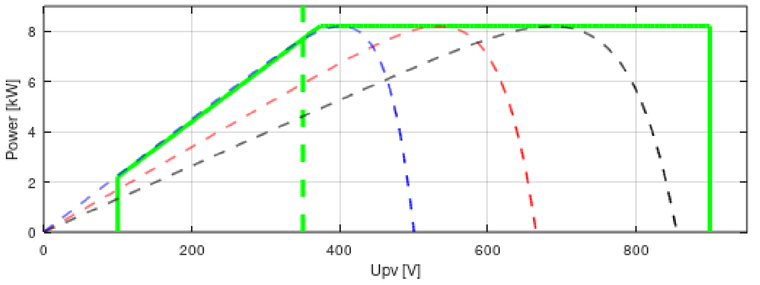
- Solar charger 16kW
- 2 MPPT of 8kW each, 20A
  - Range MPP 300-700V
  - Controlled max. current (DC oversizing possible)
  - Connected to the internal DC high voltage intermediate circuit: Very good efficiency

Security:

- Not isolated: Use class A panel (as for most of grid –tied inverters)
- Monitoring the insulation resistance to earth during start-up and the earth current during operation
- Protected against earth and reversal faults
- Relay for disconnecting the panels at night
- Programmable depolarization (relay connection of the panel from - to +350V during the night =pv offset box).
- Integrated DC switch

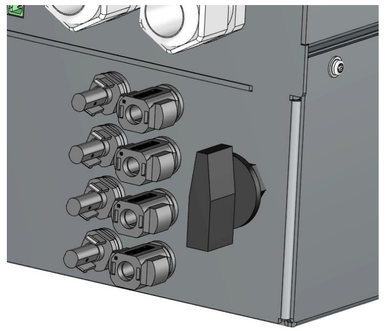


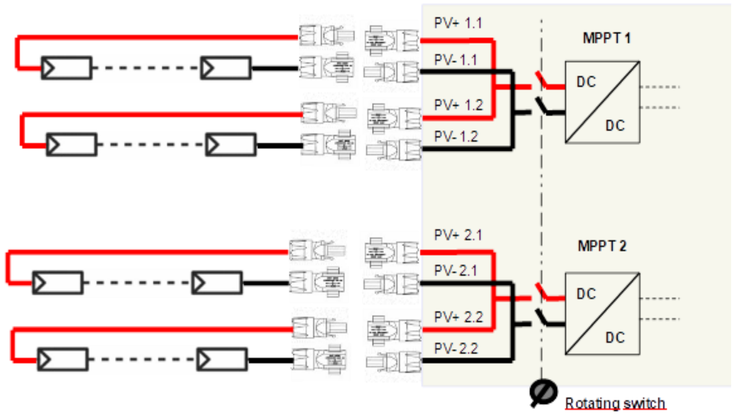




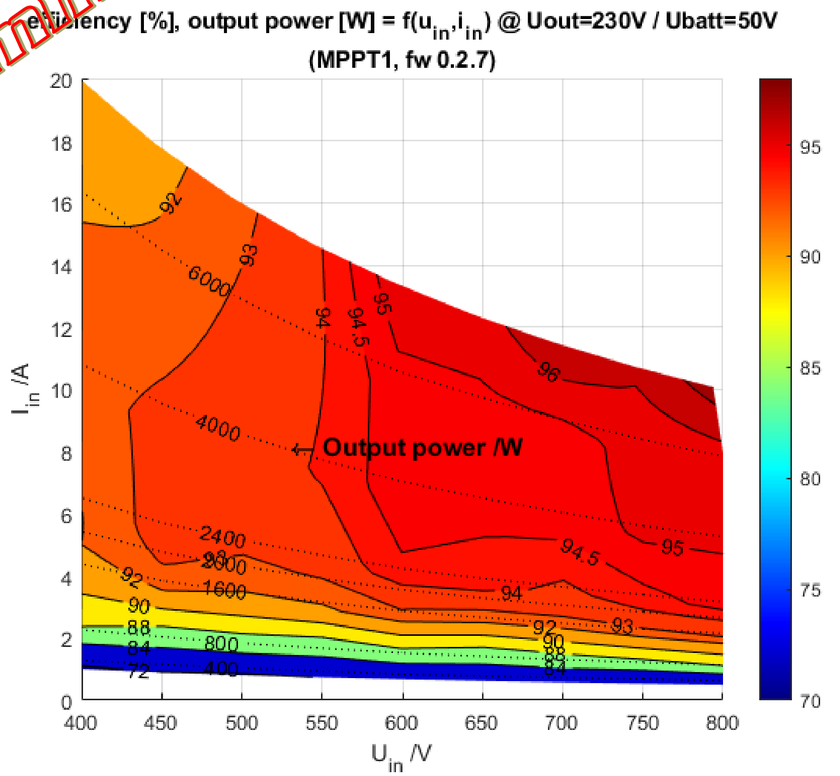
Solar

- Solar to grid up to 97%
- Strings arrangement from





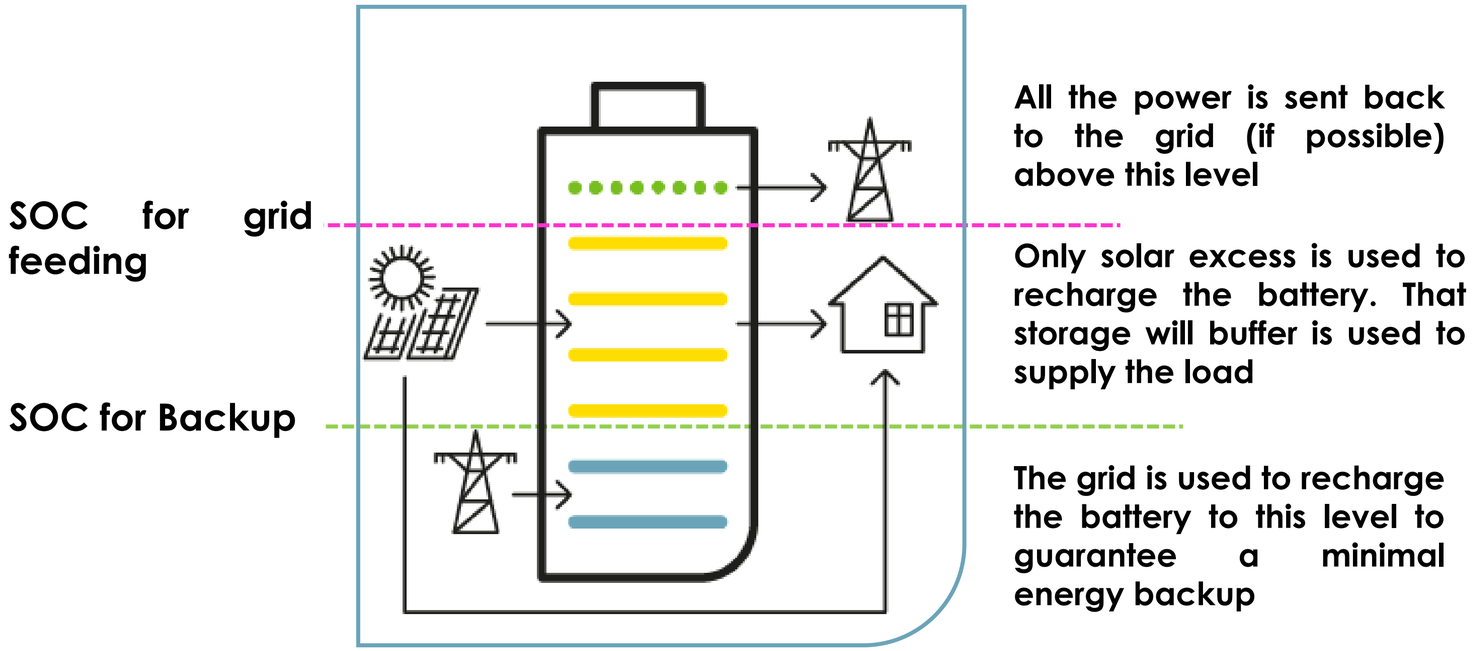
prelimiary



Solar and battery management

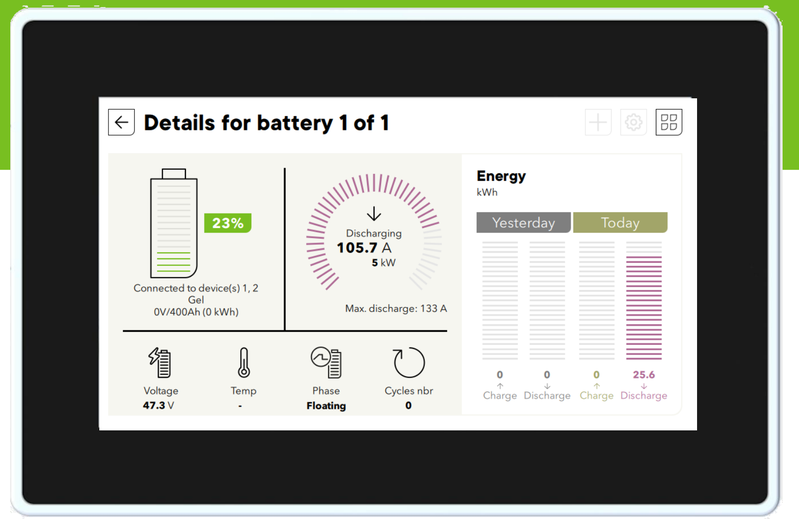
Priority to the Solar

- SOC for backup: charge for the next blackout from anysource
- SOC for gridfeeding: everything above is sent back to the grid
- In between: storage for autarky optimisation / selfconsumption optimization



Battery

- All types
- Temperature sensor
- Multi-battery management comming soon



Li

Lithium batteries

- Integrated CAN Communication, no external Xcom-CAN unit required
- List of compatible manufacturers

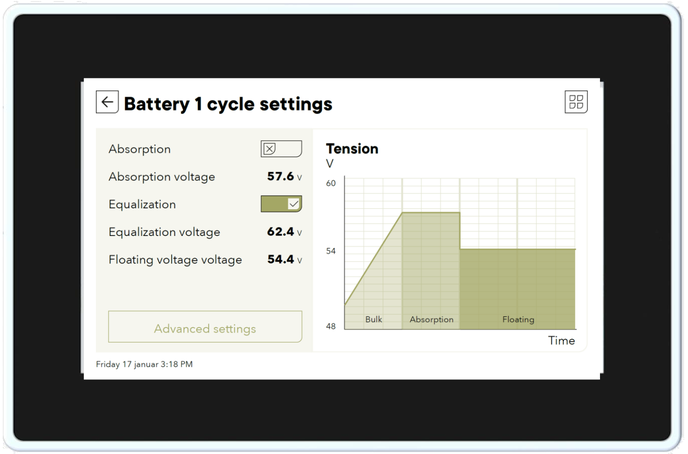
AutarcTech enjoy independence · BLUE NOVA energy · BYD · cegasa · Discover Innovative Battery Solutions · ips Integrated Power Solutions AG · PowerTech systems · PYLONTECH · solarMD · TESVOLT STORAGETECHNOLOGY · WECO · ZRGP

… see our website

Pb

Lead-acid batteries

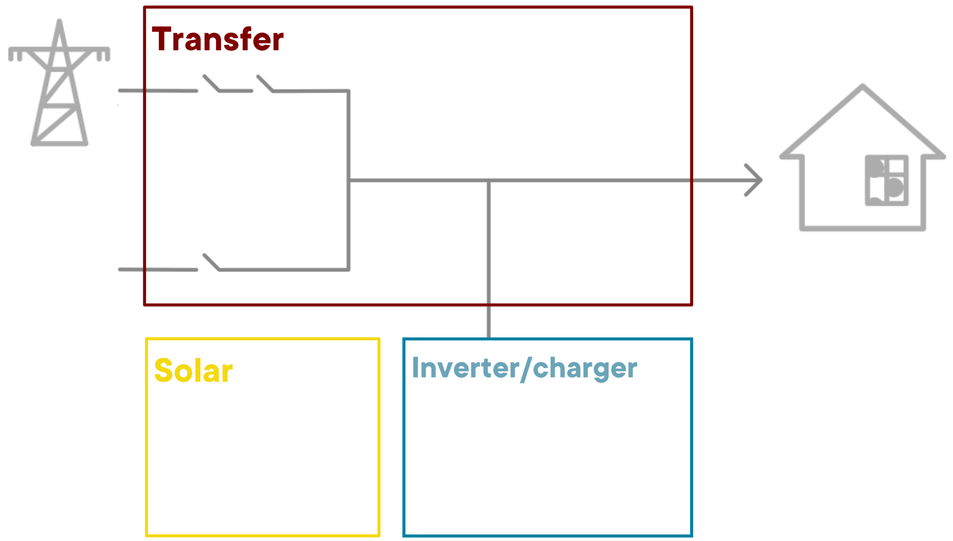
Traditional management, fully programmable

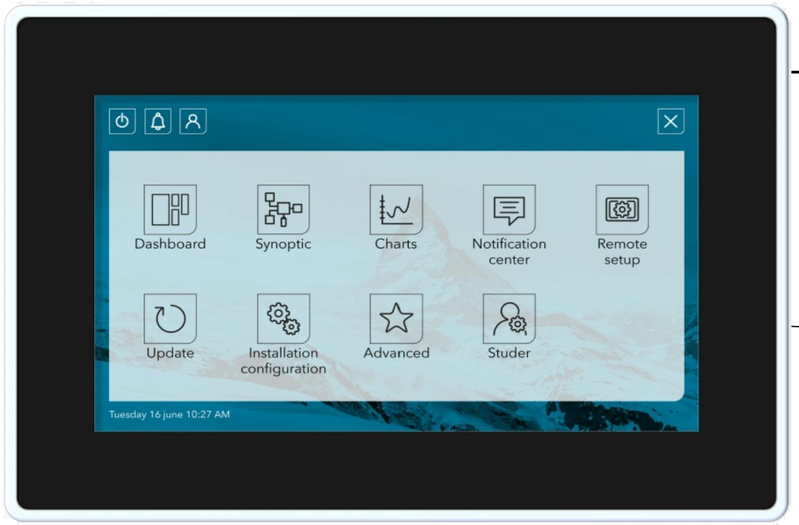


Grid Connection

- 80A 400V triphased

- VDE ARN-4105:2018
  - Power adjustment as a function of frequency
  - FRT: Fault ride through
  - Reactive power control modes
  - Double safety relay with redundant monitoring
  - Anti-islanding, …
- EU EN50549-1:2019





next interface

Local: Touchscreen 7”

- Visualization
  - Simply
  - Detailed
  - History
- Programming
  - Wizard
  - Detailed

Distance: via Internet

- Studer Web Portal (visualization and programming)
- APP Easy Monitoring (simple visualization)

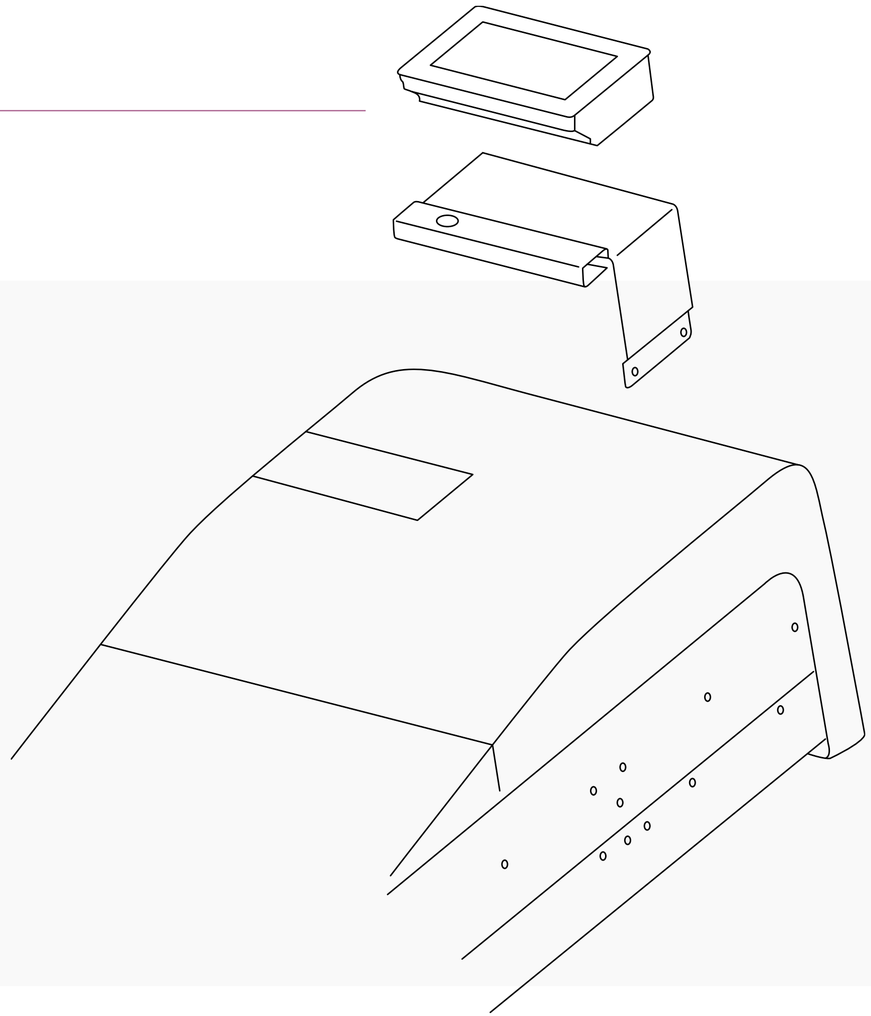
next interface

Flexible installation

- Wall fixing
- Compact fixing in the device
- Embedded fixing
- Hold in the hand

Inputs/outputs

- RS485
- Ethernet
- USB



Monitoring

Local:

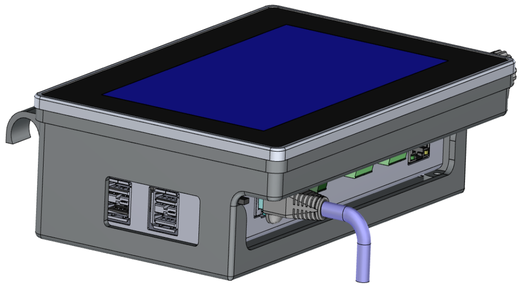
- Datalog on USB memory stick with the remote control
- Datalog integrated in the **next**'s devices

Distance:

- Datalog on the Internet Portal

Tools for the installer (connected to the portal)

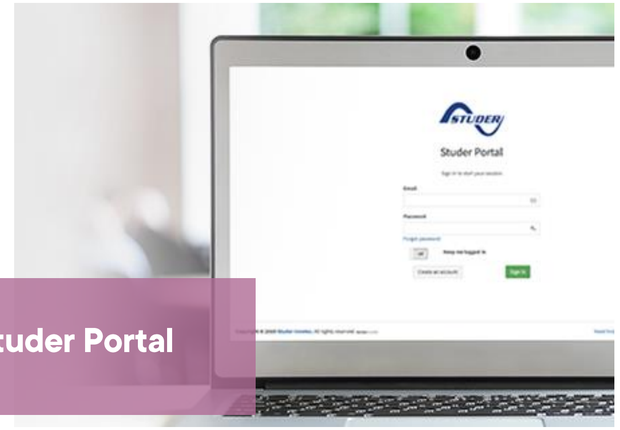
- Installation sharing: via the web portal
- Limited access right for a customer
  - App EasyMonitoring
- Installer contact



Local Monitoring & Control solution

Studer Easy Monitoring App

Remote Monitoring & Control solution



Studer Portal