Ready for solar autarky

High reliability swiss made power since 1987
From self consumption to autarky

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.
Fully solar in offgrid

- 50% autarky
- 100% autarky
**AC source**
3 x 80A AC input, grid ready EU LV

**Solar PV**
2 MPPT inputs 2 x 8 kW

**Battery**
48V Lead-acid or lithium battery

**AC flex**
2nd AC source or AC loads

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

**nx interface**
nextOS platform

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Internal architecture

- Grid or genset
- 2 MPPTs entries: 2x 8 kWp
- Transfer
- Inverter/charger
- Solar
- Battery
- Power flow dispatcher
- Configurable genset or loads
- Loads
  - Studer nx bus 1
  - Studer nx bus 2
  - RS 485i (modbus communication)
  - Remote entries
  - Aux contacts 1&2
  - CAN BMS (Li batteries)
  - Nx temp sensor

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**Special features**

- **Full grid interactive**

- **Surge power:**
  - 30kVA with solar
  - 25kVA on batt
  - 10kVA on 1phase

- **Smart boost**

- **Peak shaving**
  - 6.2 kW
  - 6.2 kW
  - 6.2 kW
  - 8.5 kW

- **Phase balancing**
  - 6.2 kW
  - 6.2 kW
  - 6.2 kW
  - 2.4 kW
  - 10.2 kW
  - 8.1 kW
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

Mountain hut at 3256m

Conclusion
Ready for solar autarky

Studer’s three phase battery inverter with built-in solar

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CTO + board member

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Configurable Genset or Loads

Grid or Genset

Ac Flex 55 kVA
VDE Safety connection

Inverter 15 kVA

Ac Loads 70 kVA

70 kVA (Grid + Inverter) 15kVA (Inverter)

Studer next bus
External Communication

2 MPPTs Entries
2x8kWp

PV+ 1.1
PV- 1.1

PV+ 1.2
PV- 1.2

PV+ 2.1
PV- 2.1

PV+ 2.2
PV- 2.2

AC
DC
DC

Can bus to BMS
(for lithium batteries)

BATTER

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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 to grid up to 97%
- Strings arrangement from

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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

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Battery

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

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

Lead-acid batteries
Traditional management, fully programmable

... see our website
- 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