/ Battery Charging Systems / Welding Technology / Solar Electronics

Fronius
SHIFTING THE LIMITS

FRONIUS SYMO

THE THREE-PHASE INVERTER FOR MAXIMUM FLEXIBILITY

Fronius International GmbH
Division Solar Electronics
Froniusplatz 1
A-4600 Wels, Austria

WE HAVE THREE DIVISIONS AND ONE PASSION: SHIFTING THE LIMITS.

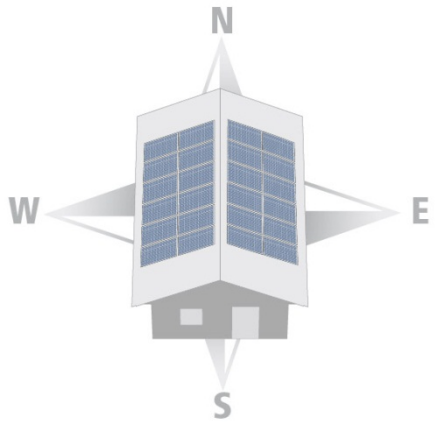
OVERVIEW

- Current situation regarding private PV systems
- Maximum flexibility…
  - …in system design
  - …in interfaces and protocols
  - …future-proof and energy management
- Other advantages
- Technical data

CURRENT SITUATION REGARDING PRIVATE PV SYSTEMS

1) Demands on system design are increasing

- / Fewer roofs are pointing south, the optimum direction.
- / Many roofs have dormer windows and/or are partially in the shade.
- / Energy suppliers are demanding compact, three-phase inverters
- / Self-consumption is increasing in importance → east/west-facing roofs are often more suitable for this purpose than purely south-facing roofs.
- / Different roof orientations require a more flexible approach to design.

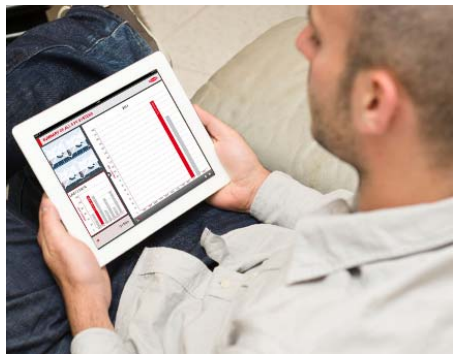


Requirement 1: Maximum flexibility in system design

CURRENT SITUATION REGARDING PRIVATE PV SYSTEMS

2) Demands on computerisation are increasing

- / Being selective about which consumers to switch on and off increasingly important.
- / It is often necessary to connect to an existing home automation system.
- / System monitoring is often carried out by third-party suppliers.
- / Data is no longer stored locally, but on the internet.
- / Customers want to keep a close eye on their system data –
- / on the move as well using smartphones or tablets.



Requirement 2: Maximum flexibility in interfaces and protocols

CURRENT SITUATION REGARDING PRIVATE PV SYSTEMS

3) Market demands placed on photovoltaics are changing rapidly

- / New communication standards demand new software protocols.
- / Demands from PSCs are increasing (remote control capability).
- / New safety rules demand new inverter functions (e.g. arc detection).
- / Self-consumption gaining in significance
- / The activation of electrical consumers is becoming increasingly important → energy management

Requirement 3: Energy management & future-proof thanks to easy expansion and adaptation options

Fronius Symo

The three-phase inverter for maximum flexibility.

Fronius Symo

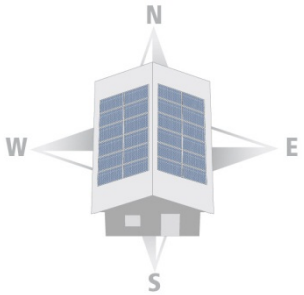
/ Compact
/ Flexible
/ Three-phase

MAXIMUM FLEXIBILITY IN SYSTEM DESIGN

- Numerous power categories
  - 3.0 / 3.7 / 4.5 / 5.0 / 6.0 / 7.0 / 8.2 kVA
  - Choose the optimum power category for your customers
- High system voltage of 1000 V DC
  - Virtually all power categories can be achieved with a single string
  - Optimum performance in the shade
  - Perfect adaptation of the PV system to the customer's roof, as any number of modules (even prime numbers) can be installed

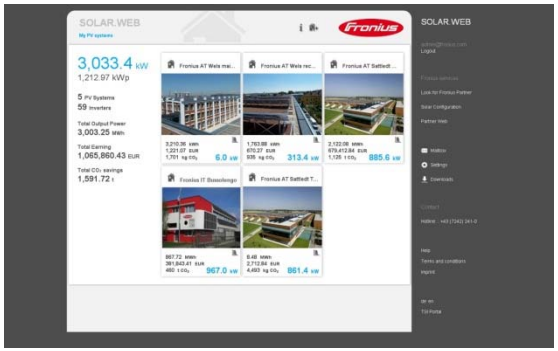
MAXIMUM FLEXIBILITY IN SYSTEM DESIGN

- MPP voltage range from 150 to 800 V DC
  - Large number of design variants and possibilities
- 2 MPP trackers
  - For optimum system design in roofs with different orientations, with and without shading
  - Asymmetric roof distribution produces different string lengths
- Indoor and outdoor inverters for installing in exposed outdoor situations (degree of protection IP 55)



MAXIMUM FLEXIBILITY IN INTERFACES AND PROTOCOLS

- / On-board WLAN / LAN
  - / Wireless internet connection with WLAN
  - / Internet connection with Ethernet (LAN)
  - / Free online monitoring with Fronius Solar.web

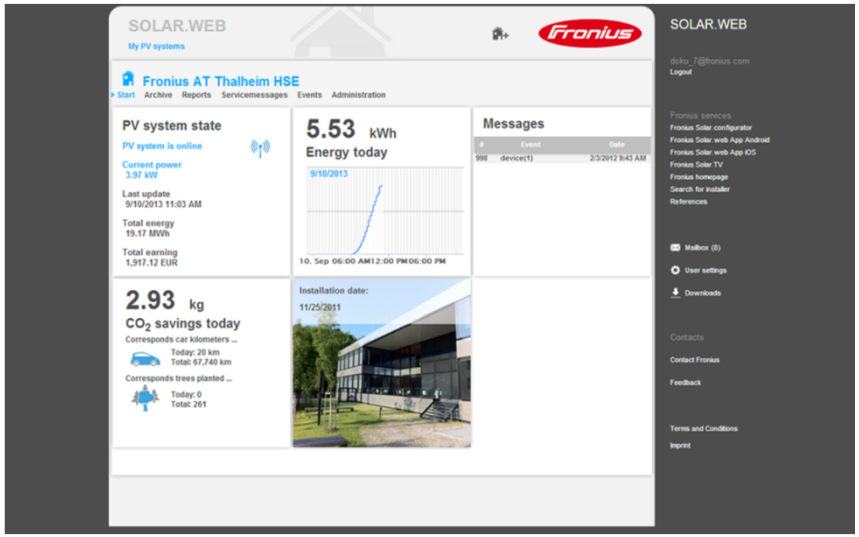


MAXIMUM FLEXIBILITY IN INTERFACES AND PROTOCOLS

- On-board Power Control Card function
  - Direct communication between inverters and ripple control receivers
  - Simple configuration via integrated web server
  - 6 digital inputs
  - 4 digital inputs and outputs

MAXIMUM FLEXIBILITY IN INTERFACES AND PROTOCOLS

- On-board data logging. Easy to update
  - Integrated Datalogger incl. web server
  - Easy software updates with USB stick



MAXIMUM FLEXIBILITY IN INTERFACES AND PROTOCOLS

- Other integrated interfaces
  - Solar.Net IN / Solar.Net OUT (Com Card function)
  - Modbus TCP and JSON interface for simple integration of components from third-party suppliers
  - Signalling output – for failure indication or energy management

ENERGY MANAGEMENT & FUTURE-PROOF

- Slots
  - Optional cards, for example Fronius Sensor card
  - Future requirements
    - Enhanced energy management
    - Connection to home management systems
    - Arc detector

OTHER ADVANTAGES

- / A unique hinged system for lowest installation costs
- / Maintenance and service by a Fronius Service Partner
- / Lightweight and extremely compact
- / Easy, improved display navigation
- / Start-up assistant (Language, country setup, time/date etc.)
- / For systems with shading it is possible to select a “Shading tolerant MPP algorithm”

EASY INSTALLATION

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TECHNICAL DATA FRONIUS SYMO

TECHNICAL DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
MPP voltage range	200 – 800 V	250 – 800 V	300 – 800 V
Max. input voltage	1,000 V		
AC nominal output	3,000 W	3,700 W	4,500 W
Max. efficiency	98.0%		
Europ. efficiency	96.2%	96.7%	97.0%
Grid connection	3 ~ NPE 400 V / 230 V or 3 ~ NPE 380 V / 220 V		
Frequency	50 Hz / 60 Hz		
Degree of protection (electronics compartment)	IP 55		
Dimensions (height x width x depth)	645 x 431 x 204 mm		
Weight	16.0 kg		

TECHNICAL DATA FRONIUS SYMO

INTERFACES	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
WLAN / Ethernet LAN	Fronius Solar.web / Fronius Solar.web, Modbus TCP, JSON		
6 inputs or 4 digital inputs/outputs	Interface to ripple control receiver		
USB (type A socket)	For USB sticks		
2x RS422 (RJ45 socket)	Fronius Solar Net, interface protocol		
Signalling output	Energy management (potential-free relay output)		
Datalogger and web server	Included		

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TECHNICAL DATA FRONIUS SYMO*

TECHNICAL DATA	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M	SYMO 5.0-3-M
MPP voltage range	150 – 800 V	150 – 800 V	150 – 800 V	163 – 800 V
Max. input voltage	1,000 V			
AC nominal output	3,000 W	3,700 W	4,500 W	5,000 W
Max. efficiency	98.0%			
Europ. efficiency	96.2%	96.7%	97.0%	Approx. 97 %
Grid connection	3 ~ NPE 400 V / 230 V or 3 ~ NPE 380 V / 220 V			
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* Preliminary data

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* Preliminary data

TECHNICAL DATA FRONIUS SYMO*

TECHNICAL DATA	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
MPP voltage range	195 – 800 V	228 – 800 V	267 – 800 V
Max. input voltage	1,000 V		
AC nominal output	6,000 W	7,000 W	8,200 W
Max. efficiency	98.0%		
Europ. efficiency	Approx. 97.2%	Approx. 97.3%	Approx. 97.5%
Grid connection	3 ~ NPE 400 V / 230 V or 3 ~ NPE 380 V / 220 V		
Frequency	50 Hz / 60 Hz		
Degree of protection (electronics compartment)	IP 55		
Dimensions (height x width x depth)	645 x 431 x 204 mm		
Weight	19.9 kg		21.9 kg

* Preliminary data

TECHNICAL DATA FRONIUS SYMO*

INTERFACES	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
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FRONIUS SYMO AT A GLANCE

WLAN

On request: Simple wireless connection to the internet & smartphones

HINGED SYSTEM

An innovative hinged system for easy installation and service

ENERGY MANAGEMENT

Standard energy management relay or optional energy management card

MAX. FLEXIBILITY

High system voltage, a wide input voltage range and 2 MPP trackers simplify system dimensioning

SMART GRID READY

Easy to control for PSCs via the optional Power Control Card function and static and dynamic grid backup

OPTIMISED FOR 3RD PARTIES

Simple connection to 3rd-party components via standard interfaces

FUTURE-PROOF

Free slots to meet every need

FRONIUS SYMO WINS AWARD

- Plus X Award: Awarded in the categories
  - High quality
  - Functionality
  - Ecology

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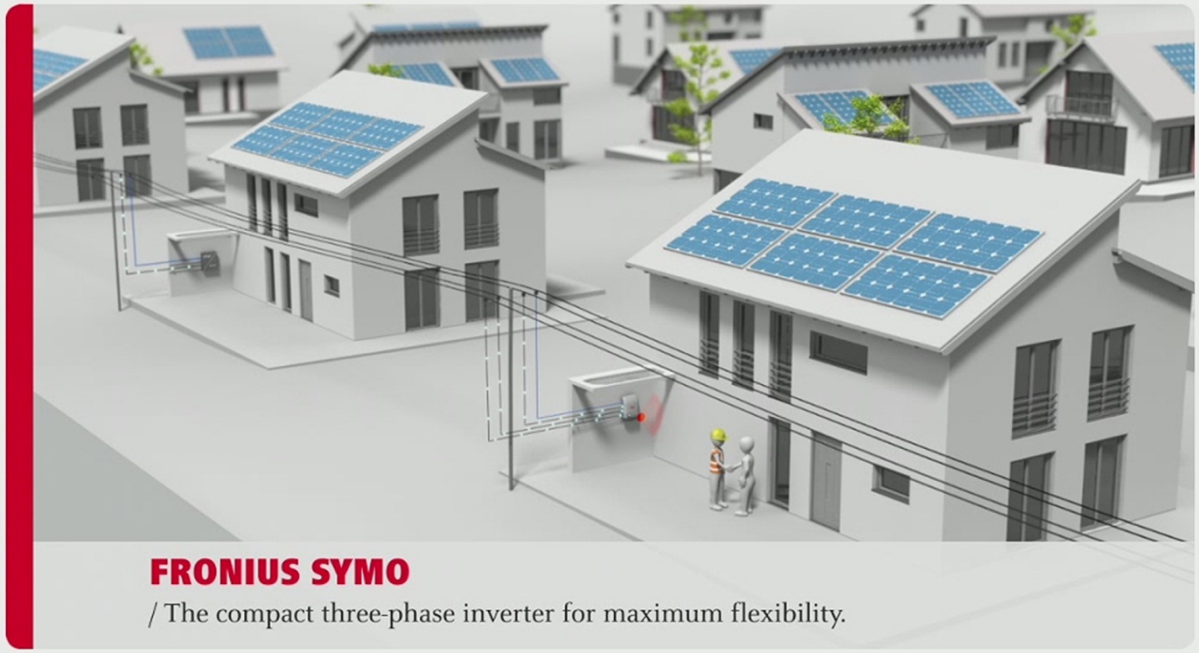
THE COMPACT THREE-PHASE INVERTER FOR MAXIMUM FLEXIBILITY



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/ The compact three-phase inverter for maximum flexibility.

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