

FRONIUS ENERGY PACKAGE

/ The personal storage solution for 24H sun.

/ "24H sun" is the Fronius vision of how energy will be supplied in the coming decades. The Fronius Symo Hybrid is a major step towards this vision. Boasting power categories ranging from 3.0 to 5.0 kW, the transformerless inverter allows unused energy from a photovoltaic system to be stored in a battery. The result: maximum self-consumption of the available power and maximum energy independence. Excess solar power can thus be used at times when generating conditions are poor or impossible. With the emergency power function, the household can enjoy an optimum electricity supply even during power outages. Perfect system configuration and visualisation are provided by the built-in web server with graphical interface, WLAN and Ethernet. In addition, the DC coupling on the battery guarantees maximum efficiency of the overall system.

FLEXIBLE

/ Emergency power function and battery can be retrofitted / Range of different storage capacities available (4.5 - 12.0 kWh) / retrofittable to existing PV

DC-coupled system

/ DC-coupled system / No multiple conversions between AC and DC / High-performance lithium technology

THREE-PHASE / Maximisation of self-consumption

/ Three-phase emergency power supply ./ Grid phase balancing support

REVOLUTIONARY

/ User-friendly interface/ Integrated WLAN and Ethernet/ Commissioning wizard for straightforward configuration



TECHNICAL DATA FRONIUS SYMO HYBRID¹⁾

/ The Fronius Symo Hybrid is the heart of the 24H Sun storage solution. From a simple inverter one minute, the battery and emergency power function can be added in no time. The result: sun by day, sun by night and sun during power outages.

INPUT DATA	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
PV input power	5.0 kW	6.5 kW	8.0 kW		
Max. input current (I _{dc max})	1 x 16 A	1 x 16 A	1 x 16 A		
Max. short circuit current, module array	24 A				
Min. input voltage (U _{dc min})	150 V				
Feed-in start voltage (Udc start)	200 V				
Nominal input voltage (U _{dc,r})	595 V				
Max. input voltage (U _{dc max})	1000 V				
Usable MPP voltage range (Umpp min – Umpp max)	150 - 800 V				
MPP voltage range at nominal power $(U_{mpp min} - U_{mpp max})$	200 - 800 V	0 - 800 V 255 - 800 V 320 - 800			
Number of MPP trackers	1				
BATTERY INPUT	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
Maximum output power to battery	3,000 W	4,000 W	5,000 W		
Maximum input power from battery	3,000 W	4,000 W	5,000 W		
OUTPUT DATA	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
AC nominal output (Pac,r)	3,000 W	4,000 W	5,000 W		
AC nominal output (P _{ac,r}) Max. output power	3,000 W 3,000 VA	4,000 W 4,000 VA	5,000 W 5,000 VA		
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Max. output power	3,000 VA 4.5 A	4,000 VA	5,000 VA 7.6 A		
Max. output power Max. output current (I _{ac max})	3,000 VA 4.5 A	4,000 VA 6.0 A	5,000 VA 7.6 A		
Max. output power Max. output current (I _{ac max}) Grid connection (voltage range)	3,000 VA 4.5 A	4,000 VA 6.0 A V / 230 V or 3-NPE 380 V / 220 V (+20	5,000 VA 7.6 A		

¹⁾ Preliminary data.

TECHNICAL DATA FRONIUS SYMO HYBRID¹⁾

GENERAL DATA	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
Dimensions (height x width x depth)		645 x 431 x 204 mm			
Weight		22 kg			
Degree of protection		IP 65			
Protection class		1			
Charging sources		from AC and DC			
Overvoltage category (DC / AC) ²⁾		3/2			
Inverter design		Transformerless			
Cooling		Regulated air cooling			
Installation		Indoor and outdoor installation			
Ambient temperature range		-25 - +60°C			
Permitted humidity		0 - 100 %			
Max. altitude		2,000 m (unrestricted voltage range)			
DC PV connection technology	2x	DC+ and 2x DC- screw terminals 2.5 - 16 m	m ²		
DC battery connection technology	1x	DC+ and 1x DC- screw terminals 2.5 - 16 m	m ²		
AC connection technology		5-pin AC screw terminals 2.5 - 16 mm ²			
Certificates and compliance with standards	VDE AR N 4	105, ÖVE / ÖNORM E 8001-4-712, DIN V V	/DE 0126-1-1		
Stand-alone		Yes			
EFFICIENCY	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
Max. efficiency (PV - grid)	97.5 %	97.6	6 %		
Max. efficiency (PV - battery - grid)	> 85.0 %	> 85.0 %	> 85.0 %		
Europ. efficiency (PV - grid)	95.2 %	95.7 %	96.0 %		
PROTECTION DEVICES	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
DC disconnector		Included			
Overload behaviour		Operating point shift, power limitation			
DC insulation measurement		Included			
Integral RCMU		Yes			
INTERFACES	SYMO HYBRID 3.0-3-S	SYMO HYBRID 4.0-3-S	SYMO HYBRID 5.0-3-S		
WLAN / Ethernet		Fronius Solar.web, Modbus TCP, JSON			
6 inputs or 4 digital in/out	Interfa	ice to ripple control receiver, Energy manag	ement		
USB (A socket)		For USB sticks			
2x RS422 (RJ45 socket)		Fronius Solar Net. Interface Protocol			
Signalling output	En	Energy management (potential-free relay output)			
External input		S0-Meter Interface / Input for overvoltage protection			
Datalogger and web server	Included				
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¹⁾ Preliminary data. ²⁾ Testing to IEC 62109-1.



TECHNICAL DATA FRONIUS SOLAR BATTERY¹⁾

/ The Fronius Solar Battery is a perfect example of safe and high-performance lithium technology. A long service life, short charging times and high depth of discharge are therefore guaranteed. The storage capacity of the Fronius Solar Battery can be adapted to meet individual customer needs.

ELECTRICAL PARAMETERS	BATTERY 4.5	BATTERY 6.0	BATTERY 7.5	BATTERY 9.0	BATTERY 10.5	BATTERY 12.0
Nominal capacity	4.5 kWh	6.0 kWh	7.5 kWh	9.0 kWh	10.5 kWh	12.0 kWh
Usable capacity (80% DoD)	3.6 kWh	4.8 kWh	6.0 kWh	7.2 kWh	8.4 kWh	9.6 kWh
Cycle stability (80% DoD)			8,0	00		
Voltage range	120 - 170 V	160 - 230 V	200 - 290 V	240 - 345 V	280 - 400 V	320 - 460 V
Max. nominal charging power	2,400 W	3,200 W	4,000 W	4,800 W	5,600 W	6,400 W
Max. nominal discharge power	2,400 W	3,200 W	4,000 W	4,800 W	5,600 W	6,400 W
Max. charging current			16	А		
Max. discharge current			16	А		
GENERAL DATA	BATTERY 4.5	BATTERY 6.0	BATTERY 7.5	BATTERY 9.0	BATTERY 10.5	BATTERY 12.0
Battery technology			LiFe	PO4		
Dimensions (height x width x depth)			955 x 570	x 611 mm		
Weight	91 kg	108 kg	125 kg	142 kg	159 kg	176 kg
Degree of protection			IP	20		
Protection class			1	l		
Installation type	Indoor installation					
Ambient temperature range	5 - 35℃					
Permitted humidity	0 - 100 %					
DC connection technology	Screw terminals 2.5 - 16 mm ²					
Certificates and compliance with standards	IEC/EN 62133; E	N 61000-6-2:2005, EN 6	61000-6-3:2007 + A1:20	11, EN 62311:2008, FC	C Part 15 Subpart B:201	2 ClassB, UN 38.3
INTERFACES	BATTERY 4.5	BATTERY 6.0	BATTERY 7.5	BATTERY 9.0	BATTERY 10.5	BATTERY 12.0

Modbus RTU SunSpec (RS485)

Connection to inverter

¹⁾ Preliminary data.

TECHNICAL DATA FRONIUS SMART METER¹⁾

/ The Fronius Smart Meter is a bidirectional meter which optimises self-consumption and records the household's load curve. In conjunction with the Fronius Solar.web online portal, the Fronius Smart Meter provides a clear overview of a user's own power consumption.

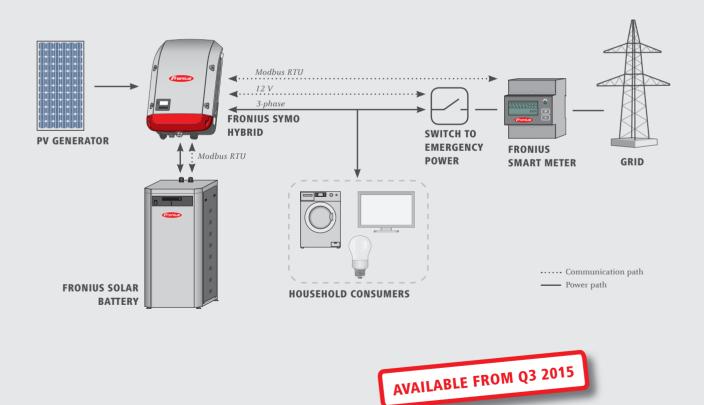


GENERAL DATA	FRONIUS SMART METER
Nominal voltage	400 - 415 V
Max. current	3 x 63 A
Cable cross-section, power path	1 - 16 mm ²
Cable cross-section, communication	0.05 - 4 mm ²
Installation	DIN rail
Housing	4 modules DIN 43880
Accuracy class	1
Interface to inverter	Modbus RTU SunSpec (RS485)
Display	8-digit LCD

¹⁾ Preliminary data.



CONFIGURATION DIAGRAM



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

/ What Günter Fronius started in 1945 in Pettenbach, Austria, has now become a modern day success story. Today, the company has around 3,000 employees worldwide and has been granted more than 1,000 patents. Our goal has remained constant throughout: to be the innovation leader. We shift the limits of what's possible. While others progress step by step, we innovate in leaps and bounds. The responsible use of our resources forms the basis of our corporate policy.

PERFECT WELDING

/ We develop products and complete systems - both manual and automated - as well as the corresponding services for our customers in the global welding technology market. We have made it our goal to decode the "DNA of the arc".

SOLAR ENERGY

/ The challenge is to make the leap to a regenerative energy supply. Our vision is to use renewable energy to achieve energy independence. With our services, inverters and energystorage systems for optimising energy yields, we are one of the leading suppliers in the photovoltaics sector.

PERFECT CHARGING

/ As know-how leaders in the world of battery charging, we deliver exceptional solutions to create the maximum benefit for our customers. For the intralogistics sector, we are committed to energy flow optimisation for electric forklift trucks and are constantly striving for the next innovation. Our powerful charging systems for vehicle workshops guarantee safe and reliable processes. and images correspond to the current state of technology at the time of printing. Subject to modifications. nformation is without guarantee in spite of careful editing - liability excluded. Copyright © 2011 Fromius⁷⁴⁴. All rights reserved.

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