

FRONIUS SYMO

/ The compact three-phase inverter for maximum flexibility.



/ PC board replacement process



/ Mounting system



/ WLAN interface



/ Open data communication



/ Smart Grid Ready



/ Boasting power categories ranging from 3.0 to 4.5 kW, the transformerless Fronius Symo is the compact three-phase inverter for households. The high system voltage, wide input voltage range and unrestricted use indoors and outdoors ensure maximum flexibility in system design. The standard interface to the internet via WLAN or Ethernet and the ease of integration of third-party components make the Fronius Symo one of the most communicative inverters on the market.

TECHNICAL DATA FRONIUS SYMO

INPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
DC maximum power at $\cos \varphi = 1$	3,125 W	3,850 W	4,690 W
Max. input current ($I_{dc \max}$)		16 A	
Max. array short circuit		24 A	
Min. input voltage ($U_{dc \min}$)		150 V	
Feed-in start voltage ($U_{dc \text{ start}}$)		200 V	
Nominal input voltage ($U_{dc \text{ r}}$)		595 V	
Max. input voltage ($U_{dc \max}$)		1000 V	
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)	200 - 800 V	250 - 800 V	300 - 800 V
Number of DC connections		3	

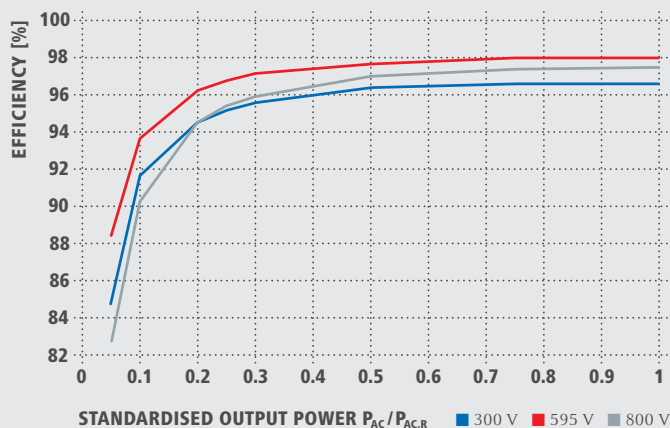
OUTPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
AC nominal output ($P_{ac \text{ r}}$)	3,000 W	3,700 W	4,500 W
Max. output power	3,000 VA	3,700 VA	4,500 VA
Max. output current ($I_{ac \max}$)		7.5 A	
Grid connection ($U_{ac \text{ r}}$)		3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V	
Min. output voltage ($U_{ac \min}$)		184 V	
Max. output voltage ($U_{ac \max}$)		264 V	
Frequency (f_r)		50 Hz / 60 Hz	
Frequency range ($f_{\min} - f_{\max}$)		46 - 65 Hz	
Total harmonic distortion		< 3 %	
Power factor ($\cos \varphi_{ac \text{ r}}$)		0.70 - 1 ind./cap.	

GENERAL DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
Dimensions (height x width x depth)		645 x 431 x 204 mm	
Weight		16.0 kg	
Degree of protection		IP 55	
Protection class		1	
Overvoltage category (DC / AC)		2 / 3	
Night time consumption		< 1 W	
Inverter design		Transformerless	
Cooling		Regulated air cooling	
Installation		Indoor and outdoor installation	
Ambient temperature range		-25 - +60 °C	
Permitted humidity		0 - 100 %	
DC connection technology		Screw terminals 2.5 - 16 mm ² ¹⁾	
Mains connection technology		Screw terminals 2.5 - 16 mm ² ¹⁾	
Certificates and compliance with standards		ÖVE / ÖNORM E 8001-4-712, AS 4777-2, AS 4777-3, AS3100, DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1-2, IEC 62116, IEC 61727, CER 06-190, EN 50438, G83	

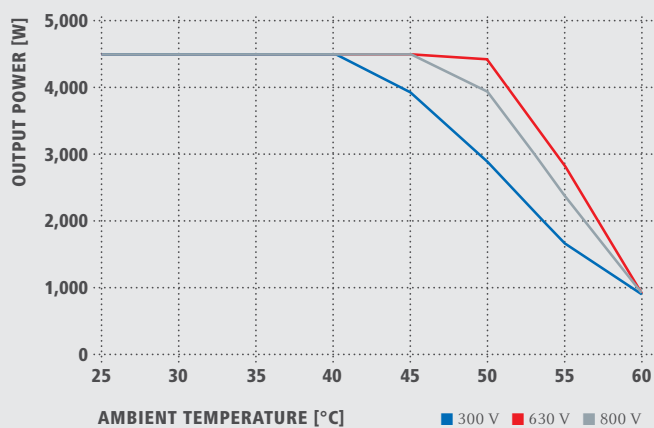
¹⁾ 16 mm² without wire end ferrules

Further information regarding the availability of the inverters in your country can be found at www.fronius.com.

FRONIUS SYMO 4.5-3-S EFFICIENCY CURVE



FRONIUS SYMO 4.5-3-S TEMPERATURE DERATING



TECHNICAL DATA FRONIUS SYMO

EFFICIENCY	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
Max. efficiency		98.0 %	
European efficiency (η_{EU})	96.2 %	96.7 %	97.0 %
η at 5 % $P_{AC,r}^{1)}$	80.3 / 83.6 / 79.1 %	83.4 / 86.4 / 80.6 %	84.8 / 88.5 / 82.8 %
η at 10 % $P_{AC,r}^{1)}$	87.8 / 91.0 / 86.2 %	90.1 / 92.5 / 88.7 %	91.7 / 93.7 / 90.3 %
η at 20 % $P_{AC,r}^{1)}$	92.6 / 95.0 / 92.6 %	93.7 / 95.7 / 93.6 %	94.6 / 96.3 / 94.5 %
η at 25 % $P_{AC,r}^{1)}$	93.4 / 95.6 / 93.8 %	94.5 / 96.4 / 94.7 %	95.2 / 96.8 / 95.4 %
η at 30 % $P_{AC,r}^{1)}$	94.0 / 96.3 / 94.5 %	95.0 / 96.7 / 95.4 %	95.6 / 97.2 / 95.9 %
η at 50 % $P_{AC,r}^{1)}$	95.2 / 97.3 / 96.3 %	96.9 / 97.6 / 96.7 %	96.4 / 97.7 / 97.0 %
η at 75 % $P_{AC,r}^{1)}$	95.6 / 97.7 / 97.0 %	96.2 / 97.8 / 97.3 %	96.6 / 98.0 / 97.4 %
η at 100 % $P_{AC,r}^{1)}$	95.6 / 97.9 / 97.3 %	96.2 / 98.0 / 97.5 %	96.6 / 98.0 / 97.5 %
MPP adaptation efficiency		> 99.9 %	

¹⁾ and at $U_{mpp\ min} / U_{dc,r} / U_{mpp\ max}$

PROTECTIVE DEVICES	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S
DC insulation measurement		Yes	
Overload behaviour		Operating point shift, power limitation	
DC disconnecter		Yes	

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 (A socket) ²⁾		For USB sticks	
2x RS422 (RJ45 socket) ²⁾		Fronius Solar Net, interface protocol	
S0 input / signalling output ²⁾		Energy management (4-20 mA input / potential-free relay output)	
Datalogger and Webserver		Included	

²⁾ also available in the light version

/ Battery Charging Systems / Welding Technology / Solar Electronics

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/ Whether Battery Charging Systems, Welding Technology or Solar Electronics - our goal is clearly defined: to be the technology and quality leader. With around 3,000 employees worldwide, we shift the limits of what's possible - our more than 850 active patents are testimony to this. While others progress step by step, we innovate in leaps and bounds. Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com



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