

FRONIUS SYMO

/ Maximum flexibility for the applications of tomorrow.



/ PC board replacement process



/ Mounting system



/ WLAN interface



/ Open data communication



/ Smart Grid Ready



/ Boasting power categories ranging from 3.0 to 20.0 kW, the transformerless Fronius Symo is the three-phase inverter for systems of every size. The high system voltage, wide input voltage range and two MPP trackers 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 (3.0-3-S, 3.7-3-S, 4.5-3-S, 3.0-3-M, 3.7-3-M, 4.5-3-M)

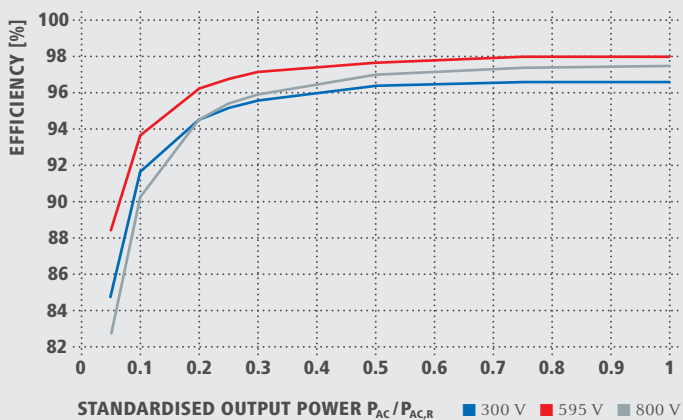
INPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Max. input current ($I_{dc\ max\ 1} / I_{dc\ max\ 2}^{1)}$)				16.0 A / 16.0 A		
Max. array short circuit current (MPP ₁ /MPP ₂ ²⁾)				24.0 A / 24.0 A		
Min. input voltage ($U_{dc\ min}$)				150 V		
Feed-in start voltage ($U_{dc\ start}$)				200 V		
Nominal input voltage ($U_{dc,r}$)				595 V		
Max. input voltage ($U_{dc\ max}$)				1,000 V		
MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$)	200 - 800 V	250 - 800 V	300 - 800 V		150 - 800 V	
Number MPP trackers	1			2		
Number of DC connections	3			2+2		
OUTPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
AC nominal output ($P_{ac,r}$)	3,000 W	3,700 W	4,500 W	3,000 W	3,700 W	4,500 W
Max. output power	3,000 VA	3,700 VA	4,500 VA	3,000 VA	3,700 VA	4,500 VA
Max. output current ($I_{ac\ max}$)	9.0 A			13.5 A		
Grid connection ($U_{ac,r}$)	3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V					
Min. output voltage ($U_{ac\ min}$)	260 / 150 V					
Max. output voltage ($U_{ac\ max}$)	485 / 280 V					
Frequency (f_r)	50 Hz / 60 Hz					
Frequency range ($f_{min} - f_{max}$)	45 - 65 Hz					
Total harmonic distortion	< 3 %					
Power factor ($\cos\ \varphi_{ac,r}$)	0.70 - 1 ind. / cap.			0.85 - 1 ind. / cap.		
GENERAL DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Dimensions (height x width x depth)	645 x 431 x 204 mm					
Weight	16.0 kg			19.9 kg		
Degree of protection	IP 65					
Protection class	1					
Overvoltage category (DC / AC) ²⁾	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	3x DC+ and 3x DC- screw terminals 2.5 - 16 mm ²			4x DC+ and 4x DC- screw terminals 2.5 - 16mm ² ³⁾		
Mains connection technology	5-pole AC screw terminals 2.5 - 16 mm ²			5-pole AC screw terminals 2.5 - 16mm ² ³⁾		
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G83/2, UNE 206007-1, SI 4777 ¹⁾ , CEI 0-21 ¹⁾					

¹⁾ This applies to Fronius Symo 3.0-3-M, 3.7-3-M and 4.5-3-M

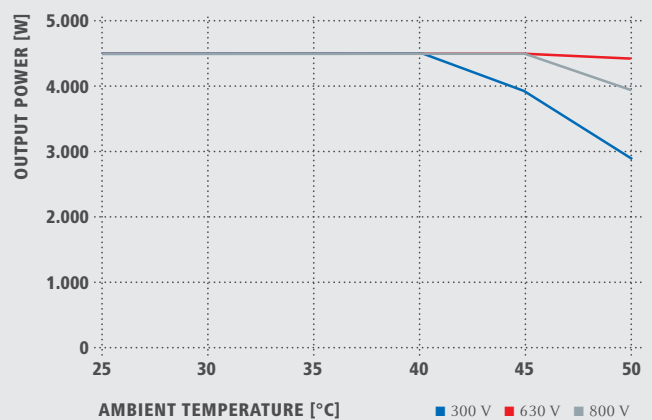
²⁾ according to IEC 62109-1.

³⁾ 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 (3.0-3-S, 3.7-3-S, 4.5-3-S, 3.0-3-M, 3.7-3-M, 4.5-3-M)

EFFICIENCY	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Max. efficiency	98.0 %					
European efficiency (η_{EU})	96.2 %	96.7 %	97.0 %	96.5 %	96.9 %	97.2 %
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 %	79.8 / 85.1 / 80.8 %	81.6 / 87.8 / 82.8 %	83.4 / 90.3 / 85.0 %
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 %	86.5 / 91.6 / 87.7 %	87.9 / 93.6 / 90.5 %	89.2 / 94.1 / 91.2 %
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 %	90.8 / 95.3 / 93.0 %	91.9 / 96.0 / 94.1 %	92.8 / 96.5 / 95.1 %
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 %	91.9 / 96.0 / 94.2 %	92.9 / 96.6 / 95.2 %	93.5 / 97.0 / 95.8 %
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 %	92.8 / 96.5 / 95.1 %	93.5 / 97.0 / 95.8 %	94.2 / 97.3 / 96.3 %
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 %	94.3 / 97.5 / 96.5 %	94.6 / 97.7 / 96.8 %	94.9 / 97.8 / 97.2 %
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 %	94.9 / 97.8 / 97.2 %	95.0 / 97.9 / 97.4 %	95.1 / 98.0 / 97.5 %
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 %	95.0 / 98.0 / 97.4 %	95.1 / 98.0 / 97.5 %	95.0 / 98.0 / 97.6 %
MPP adaptation efficiency	> 99.9 %					

¹⁾ and at $U_{mpp\ min} / U_{dcr} / U_{mpp\ max}$

PROTECTIVE DEVICES	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
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	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
WLAN / Ethernet LAN	Fronius Solar.web / Fronius Solar.web, Modbus TCP, JSON					
6 inputs or 4 digital in/out	Interface to ripple control receiver					
USB (A socket) ²⁾	For USB sticks					
2x RS422 (RJ45 socket) ²⁾	Fronius Solar Net. interface protocol					
Signalling output ²⁾	Energy management (potential-free relay output)					
Datalogger and Webserver	Included					
External input	SO-Meter Interface / Input for overvoltage protection					

²⁾ also available in the light version

TECHNICAL DATA FRONIUS SYMO (5.0-3-M, 6.0-3-M, 7.0-3-M, 8.2-3-M)

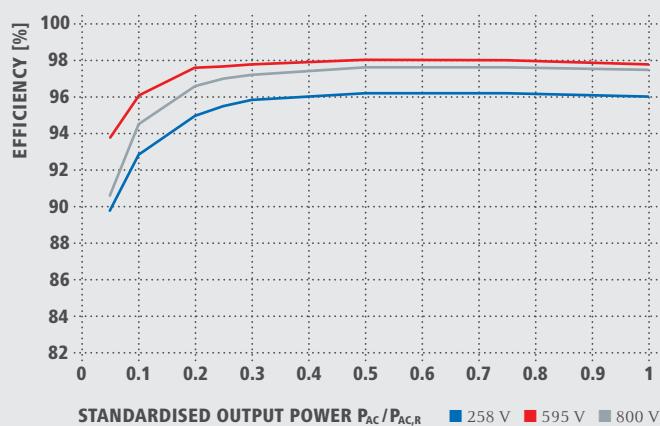
INPUT DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Max. input current ($I_{dc \max 1} / I_{dc \max 2}$)			16.0 A / 16.0 A	
Max. array short circuit current (MPP ₁ /MPP ₂)			24.0 A / 24.0 A	
Min. input voltage ($U_{dc \min}$)			150 V	
Feed-in start voltage ($U_{dc \text{ start}}$)			200 V	
Nominal input voltage ($U_{dc \text{ r}}$)			595 V	
Max. input voltage ($U_{dc \max}$)			1,000 V	
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)	163 – 800 V	195 - 800 V	228 – 800 V	267 – 800 V
Number MPP trackers			2	
Number of DC connections			2 + 2	
OUTPUT DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
AC nominal output ($P_{ac \text{ r}}$)	5,000 W	6,000 W	7,000 W	8,200 W
Max. output power	5,000 VA	6,000 VA	7,000 VA	8,200 VA
Max. output current ($I_{ac \max}$)			13.5 A	
Grid connection ($U_{ac \text{ r}}$)			3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V	
Min. output voltage ($U_{ac \min}$)			260 / 150 V	
Max. output voltage ($U_{ac \max}$)			485 / 280 V	
Frequency (f_i)			50 Hz / 60 Hz	
Frequency range ($f_{\min} - f_{\max}$)			45 - 65 Hz	
Total harmonic distortion			< 3 %	
Power factor ($\cos \varphi_{ac \text{ r}}$)			0.85 - 1 ind. / cap.	
GENERAL DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Dimensions (height x width x depth)			645 x 431 x 204 mm	
Weight	19.9 kg			21.9 kg
Degree of protection			IP 65	
Protection class			1	
Overvoltage category (DC / AC) ¹⁾			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			4x DC+ and 4x DC- Screw terminals 2.5 - 16mm ^{2 2)}	
Mains connection technology			5-pole AC Screw terminals 2.5 - 16mm ^{2 2)}	
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G83/2, UNE 206007-1, SI 4777, CEI 0-21			

¹⁾ according to IEC 62109-1.

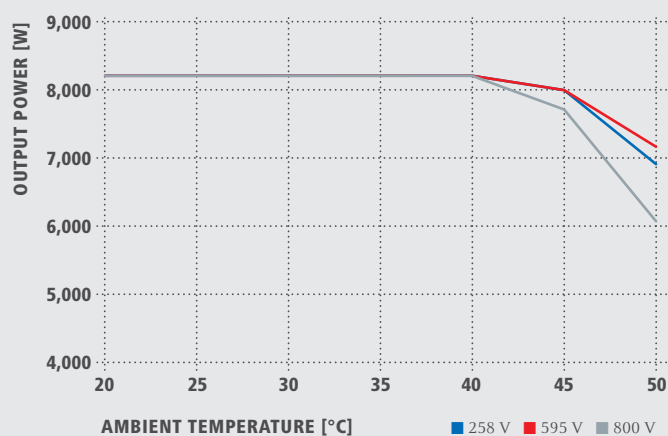
²⁾ 16 mm² without wire end ferrules

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

FRONIUS SYMO 8.2-3-M EFFICIENCY CURVE



FRONIUS SYMO 8.2-3-M TEMPERATURE DERATING



TECHNICAL DATA FRONIUS SYMO (5.0-3-M, 6.0-3-M, 7.0-3-M, 8.2-3-M)

EFFICIENCY	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Max. efficiency	98.0 %			
European efficiency (η_{EU})	97.0 %	97.2 %	97.3 %	97.5 %
η at 5 % $P_{AC,r}$ ¹⁾	84.9 / 91.2 / 85.9 %	87.8 / 92.6 / 87.8 %	88.7 / 93.1 / 89.0 %	89.8 / 93.8 / 90.6 %
η at 10 % $P_{AC,r}$ ¹⁾	89.9 / 94.6 / 91.7 %	91.3 / 95.6 / 93.0 %	92.0 / 95.9 / 94.7 %	92.8 / 96.1 / 94.5 %
η at 20 % $P_{AC,r}$ ¹⁾	93.2 / 96.7 / 95.4 %	94.1 / 97.1 / 95.9 %	94.5 / 97.3 / 96.3 %	95.0 / 97.6 / 96.6 %
η at 25 % $P_{AC,r}$ ¹⁾	93.9 / 97.2 / 96.0 %	94.7 / 97.5 / 96.5 %	95.1 / 97.6 / 96.7 %	95.5 / 97.7 / 97.0 %
η at 30 % $P_{AC,r}$ ¹⁾	94.5 / 97.4 / 96.5 %	95.1 / 97.7 / 96.8 %	95.4 / 97.7 / 97.0 %	95.8 / 97.8 / 97.2 %
η at 50 % $P_{AC,r}$ ¹⁾	95.2 / 97.9 / 97.3 %	95.7 / 98.0 / 97.5 %	95.9 / 98.0 / 97.5 %	96.2 / 98.0 / 97.6 %
η at 75 % $P_{AC,r}$ ¹⁾	95.3 / 98.0 / 97.5 %	95.7 / 98.0 / 97.6 %	95.9 / 98.0 / 97.6 %	96.2 / 98.0 / 97.6 %
η at 100 % $P_{AC,r}$ ¹⁾	95.2 / 98.0 / 97.6 %	95.7 / 97.9 / 97.6 %	95.8 / 97.9 / 97.5 %	96.0 / 97.8 / 97.5 %
MPP adaptation efficiency	> 99.9 %			

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

PROTECTIVE DEVICES	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
DC insulation measurement	Yes			
Overload behaviour	Operating point shift, power limitation			
DC disconnecter	Yes			

INTERFACES	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
WLAN / Ethernet LAN	Fronius Solar.web / Fronius Solar.web, Modbus TCP, JSON			
6 inputs or 4 digital in/out	Interface to ripple control receiver			
USB (A socket) ²⁾	For USB-Sticks			
2x RS422 (RJ45 socket) ²⁾	Fronius Solar Net, Interface Protokoll			
Signalling output ²⁾	Energy management (potential-free relay output)			
Datalogger and Webservice	Included			
External input	S0-Meter Interface / Input for overvoltage protection			

²⁾ also available in the light version

TECHNICAL DATA FRONIUS SYMO (10.0-3-M, 12.5-3-M, 15.0-3-M, 17.5-3-M, 20.0-3-M)

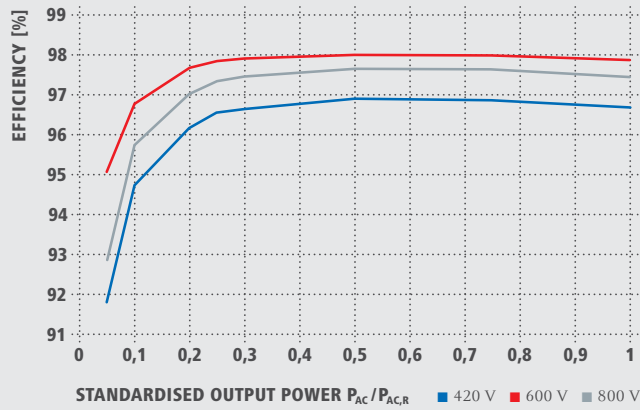
INPUT DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Max. input current ($I_{dc \max 1} / I_{dc \max 2}$)	27.0 A / 16.5 A		33.0 A / 27.0 A		
Max. array short circuit current (MPP ₁ /MPP ₂)	40.5 A / 24.8 A		49.5 A / 40.5 A		
Min. input voltage ($U_{dc \min}$)	200 V				
Feed-in start voltage ($U_{dc \text{ start}}$)	200 V				
Nominal input voltage ($U_{dc,r}$)	600 V				
Max. input voltage ($U_{dc \max}$)	1,000 V				
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)	270 - 800 V	320 - 800 V		370 - 800 V	420 - 800 V
Number MPP trackers	2				
Number of DC connections	3+3				

OUTPUT DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
AC nominal output ($P_{ac,r}$)	10,000 W	12,500 W	15,000 W	17,500 W	20,000 W
Max. output power	10,000 VA	12,500 VA	15,000 VA	17,500 VA	20,000 VA
Max. output current ($I_{ac \max}$)	20 A		32 A		
Grid connection ($U_{ac,r}$)	3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V				
Min. output voltage ($U_{ac \min}$)	260 / 150 V				
Max. output voltage ($U_{ac \max}$)	485 / 280 V				
Frequency (f_r)	50 Hz / 60 Hz				
Frequency range ($f_{\min} - f_{\max}$)	45 - 65 Hz				
Total harmonic distortion	< 2 %				
Power factor ($\cos \varphi_{ac,r}$)	0 - 1 ind. / cap.				

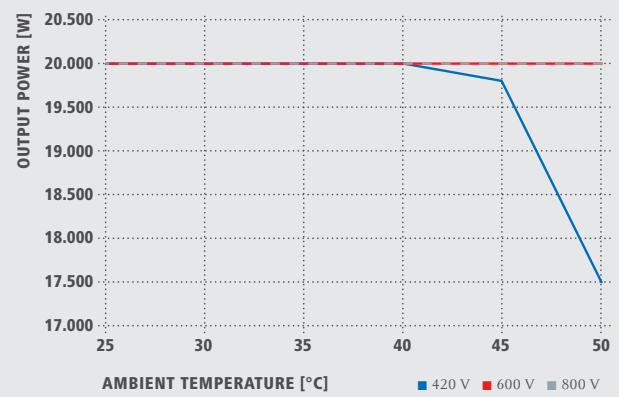
GENERAL DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Dimensions (height x width x depth)	725 x 510 x 225 mm				
Weight	34.8 kg		43.4 kg		
Degree of protection	IP 66				
Protection class	1				
Overvoltage category (DC / AC) ¹⁾	2 / 3				
Night time consumption	< 1 W				
Inverter design	Transformerless				
Cooling	Regulated air cooling				
Installation	Indoor and outdoor installation				
Ambient temperature range	-25 - +60 °C				
Permitted humidity	0 - 100 %				
DC connection technology	6x DC+ and 6x DC- screw terminals 2.5 - 16 mm ²				
Mains connection technology	5-pole AC screw terminals 2.5 - 16 mm ²				
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G83/2, G59/3, UNE 206007-1, SI 4777, CEI 0-16, CEI 0-21				

¹⁾ according to IEC 62109-1. DIN rail for optional overvoltage protection (type 2) is included.
Further information regarding the availability of the inverters in your country can be found at www.fronius.com.

FRONIUS SYMO 20.0-3-M EFFICIENCY CURVE



FRONIUS SYMO 20.0-3-M TEMPERATURE DERATING



TECHNICAL DATA FRONIUS SYMO (10.0-3-M, 12.5-3-M, 15.0-3-M, 17.5-3-M, 20.0-3-M)

EFFICIENCY	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Max. efficiency	98.0 %				
European efficiency (η_{EU})	97.5 %	97.6 %	97.8 %	97.8 %	97.9 %
η at 5 % $P_{Ac,R}^{2)}$	87.9 / 92.5 / 89.2 %	88.7 / 93.1 / 90.1 %	91.2 / 94.8 / 92.3 %	91.6 / 95.0 / 92.7 %	91.9 / 95.2 / 93.0 %
η at 10 % $P_{Ac,R}^{2)}$	91.2 / 94.9 / 92.8 %	92.9 / 96.1 / 94.6 %	93.4 / 96.0 / 94.4 %	94.0 / 96.4 / 95.0 %	94.8 / 96.9 / 95.8 %
η at 20 % $P_{Ac,R}^{2)}$	94.6 / 97.1 / 96.1 %	95.4 / 97.3 / 96.6 %	95.9 / 97.4 / 96.7 %	96.1 / 97.6 / 96.9 %	96.3 / 97.8 / 97.1 %
η at 25 % $P_{Ac,R}^{2)}$	95.4 / 97.3 / 96.6 %	95.6 / 97.6 / 97.0 %	96.2 / 97.6 / 97.0 %	96.4 / 97.8 / 97.2 %	96.7 / 97.9 / 97.4 %
η at 30 % $P_{Ac,R}^{2)}$	95.6 / 97.5 / 96.9 %	95.9 / 97.7 / 97.2 %	96.5 / 97.8 / 97.3 %	96.6 / 97.9 / 97.4 %	96.8 / 98.0 / 97.6 %
η at 50 % $P_{Ac,R}^{2)}$	96.3 / 97.9 / 97.4 %	96.4 / 98.0 / 97.5 %	96.9 / 98.1 / 97.7 %	97.0 / 98.1 / 97.7 %	97.0 / 98.1 / 97.8 %
η at 75 % $P_{Ac,R}^{2)}$	96.5 / 98.0 / 97.6 %	96.5 / 98.0 / 97.6 %	97.0 / 98.1 / 97.8 %	97.0 / 98.1 / 97.8 %	97.0 / 98.1 / 97.7 %
η at 100 % $P_{Ac,R}^{2)}$	96.5 / 98.0 / 97.6 %	96.5 / 97.8 / 97.6 %	97.0 / 98.1 / 97.7 %	96.9 / 98.1 / 97.6 %	96.8 / 98.0 / 97.6 %
MPP adaptation efficiency	> 99.9 %				
PROTECTIVE DEVICES	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
DC insulation measurement	Yes				
Overload behaviour	Operating point shift, power limitation				
DC disconnecter	Yes				
INTERFACES	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
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 ³⁾)	For USB-Sticks				
2x RS422 (RJ45-socket ³⁾)	Fronius Solar Net, interface protocol				
Signalling output ³⁾	Energy management (potential-free relay output)				
Datalogger und Webserver	Included				
External input	S0-Meter Interface / Input for overvoltage protection				

²⁾ and at $U_{mpp, min} / U_{dcr} / U_{mpp, max}$ ³⁾ also available in the light version

/ Perfect Welding / Solar Energy / Perfect Charging

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

/ Whether welding technology, photovoltaics or battery charging technology – our goal is clearly defined: to be the innovation 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. Just as we've always done. The responsible use of our resources forms the basis of our corporate policy.

Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com



v02 Feb 2014 EN

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www.fronius.com



SHIFTING THE LIMITS

Warranty terms and conditions

These guaranteed conditions apply to inverters in the following series:

String inverters

- Fronius IG
- Fronius IG Plus
- Fronius IG Plus V
- Fronius IG TL
- Fronius Galvo (light)
- Fronius Symo (light)

Central inverters

- Fronius IG
- Fronius CL

Geographical validity

These warranty terms and conditions are valid worldwide. However, they do not apply to Canada, the United States of America and Mexico. Separate warranty terms and conditions apply to these countries.

Fronius manufacturer's warranty

The inverters listed above come standard with a manufacturer's warranty of 60 months from the date of installation. Fronius guarantees that your photovoltaic inverter will function correctly during this period.

Extended warranty

An extended warranty can be purchased up to 6 months after the date of installation. Applications for an extended warranty after this date can be rejected by Fronius. The extended warranty only applies to the inverters listed above.

You can apply to extend the warranty period to a total of 10, 15 or 20 years for string inverters. For central inverters, the warranty period can be extended to a total of 10 or 20 years.

Services within the warranty period

If a defect should occur within the agreed upon warranty period for which Fronius is responsible, Fronius has the option of

- repairing the defect at Fronius or onsite
- providing an equivalent replacement device or new device
- or having a trained Fronius Service Partner carry out these services

Transport

Fronius pays the transport costs for the inverter (by land or sea)

- into and within countries with a national Fronius subsidiary
- into and within countries of the EU (including the autonomous regions or cities of Spain and Portugal)

- into and within Switzerland
- between the respective national or nearest Fronius subsidiary and the retail site of the official Fronius sales partner from which the device was purchased.

Transport costs are not paid

- from or to EU overseas territories
- from, into, or within countries outside of the EU provided that there are no national Fronius subsidiaries there.

For return transportation, devices or components must be packed in their original or equivalent packaging.

Fronius subsidiaries

As of September 2012, Fronius will have national subsidiaries in the following countries outside the EU, Switzerland and the USA:

- Australia
- Brazil
- Canada
- China
- Mexico
- Norway
- Turkey
- Ukraine

Current information about this can be found on our website at www.fronius.com.

When making a warranty claim, attention should be paid to the following:

The purchase invoice, serial number of the device and start-up report (the date on which the device was provided/commissioned and report from the power supply company), as well as proof of payment of the warranty extension fee, are required for warranty claims.

End customers, please contact your installer. If necessary, the installer will get in contact with Fronius.

The procedure for a warranty claim must be coordinated with Fronius. This is the only way to ensure that the above mentioned warranty services will be provided free of charge for the warrantee.

When devices or components are replaced, the remaining warranty period will be transferred to the replacement device or component. This will be registered automatically by Fronius. You will not receive a new certificate.

If the remaining warranty period is less than one year, you will automatically receive a full year for the remaining warranty period for the replacement device or component.

Scope and validity of the warranty

The manufacturer's warranty is only valid for the inverter that is uniquely identified by the serial number. Other photovoltaic system components as well as Fronius system upgrades (e.g., plug-in cards) are not covered by the warranty.



SHIFTING THE LIMITS

Fronius DATCOM components (for system monitoring) come standard with a 24-month warranty from the date of installation.

Exclusions from the Fronius warranty

Defects not attributable to Fronius are excluded from the guarantee. Defects not attributable to Fronius are those that are caused in particular by:

- Non-compliance with operating instructions, installation instructions or maintenance instructions
- Improper installation
- Improper commissioning
- Incorrect transport
- Improper or incorrect operation
- Inadequate ventilation of the device
- Tampering with the device by companies or persons not authorized by Fronius
- Non-compliance with safety instructions and installation standards
- Force majeure (storm, lightning, overvoltage, fire, etc.)

Damage to the inverter caused by the remaining components of the photovoltaic system or damage that impairs the function of the inverter, such as "flaws," are also excluded from the manufacturer's warranty.

The warranty does not cover travel and accommodation costs as well as onsite assembly and installation costs if they exceed the service reimbursement received by the installer performing the work from Fronius depending on the service and agreement.

Changes to the existing PV system, the building installation and the like, or any expenditure of time and the costs resulting from this are not covered by the warranty.

Due to technological progress, the possibility exists that a replacement or new device of similar value provided may not be compatible with the system monitoring or other

components installed onsite (e.g., Fronius DATCOM). Expenditures and costs resulting from this are not covered by the warranty.

No compensation is provided for lost power that has not been fed into the grid or for energy consumption that does not take place and the like.

Other legal information

In Australia, this warranty is given by, and all Australian warranty claims should be directed to:

Fronius Australia Pty Ltd, 90-92 Lambeck Drive, Tullamarine, VIC 3043, Telephone 03 8340 2900, Email pv-support-australia@fronius.com

The benefits to the consumer given by this manufacturer's warranty are in addition to other rights and remedies of the consumer that are stipulated by law, and which are not affected by this manufacturer's warranty.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The general delivery and payment terms and conditions located on our website (www.fronius.com.au) under "Terms and conditions" are in effect unless these warranty conditions allow more favorable provisions.

Previously valid warranty conditions are replaced by these conditions.

Current and detailed information about warranty terms and conditions can be found on our website at

www.fronius.com/solar/warranty