FRONIUS PRIMO

/ The communicative inverter for optimised energy management.

/ SnapINverter Technology

/ Integrated data communication

/ SuperFlex Design

/ Dynamic Peak Manager

/ Smart Grid Ready

/ Zero feed-in

/ The Fronius Primo in power categories from 3.0 to 8.2 kW perfectly completes the SnapINverter generation. This single-phase, transformerless device is the ideal inverter for private households. Its innovative SuperFlex Design provides maximum flexibility in system design, while the SnapINverter mounting system makes installation and maintenance easier than ever before. The communication package included as standard, with WLAN, energy management, several interfaces and much more besides, makes the Fronius Primo a communicative inverter for owner-occupiers.

TECHNICAL DATA FRONIUS PRIMO (3.0-1, 3.5-1, 3.6-1, 4.0-1, 4.6-1)

INPUT DATA	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
Number of MPP trackers			2		
Max. input current ($I_{dc\ max\ 1}$ / $I_{dc\ max\ 2}$)			12.0 A / 12.0 A		
Max. array short circuit current (MPP_1/MPP_2)			18.0 A / 18.0 A		
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)			80 - 1,000 V		
Feed-in start voltage ($U_{dc\ start}$)			80 V		
Usable MPP voltage range			80 - 800 V		
Number of DC connections			2 + 2		
Max. PV generator output ($P_{dc\ max}$)	4.5 kW$_{peak}$	5.3 kW$_{peak}$	5.5 kW$_{peak}$	6.0 kW$_{peak}$	6.9 kW$_{peak}$

OUTPUT DATA	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
AC nominal output ($P_{ac,r}$)	3,000 W	3,500 W	3,680 W	4,000 W	4,600 W
Max. output power	3,000 VA	3,500 VA	3,680 VA	4,000 VA	4,600 VA
AC output current ($I_{ac\ nom}$)	13.0 A	15.2 A	16.0 A	17.4 A	20.0 A
Grid connection (voltage range)		1 ~ NPE 220 V / 230 V (180 V - 270 V)			
Frequency (frequency range)		50 Hz / 60 Hz (45 - 65 Hz)			
Total harmonic distortion		< 5 %			
Power factor (cos $\varphi_{ac,r}$)		0.85 - 1 ind. / cap.			

TECHNICAL DATA FRONIUS PRIMO (3.0-1, 3.5-1, 3.6-1, 4.0-1, 4.6-1)

GENERAL DATA	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
Dimensions (height x width x depth)	645 x 431 x 204 mm				
Weight	21.5 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	-40 - +55 °C				
Permitted humidity	0 - 100 %				
Max. altitude	4,000 m				
DC connection technology	4x DC+ and 4x DC- screw terminals 2.5 - 16 mm²				
AC connection technology	3-pole AC screw terminals 2.5 - 16 mm²				
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21, VDE AR N 4105				

EFFICIENCY	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
Max. efficiency	98.0 %	98.0 %	98.0 %	98.1 %	98.1 %
European efficiency (η_{EU})	96.1 %	96.8 %	96.8 %	97.0 %	97.0 %
MPP adaptation efficiency	> 99.9 %				

PROTECTIVE DEVICES	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
DC insulation measurement	Yes				
Overload behaviour	Operating point shift. Power limitation				
DC disconnector	Yes				
Reverse polarity protection	Yes				

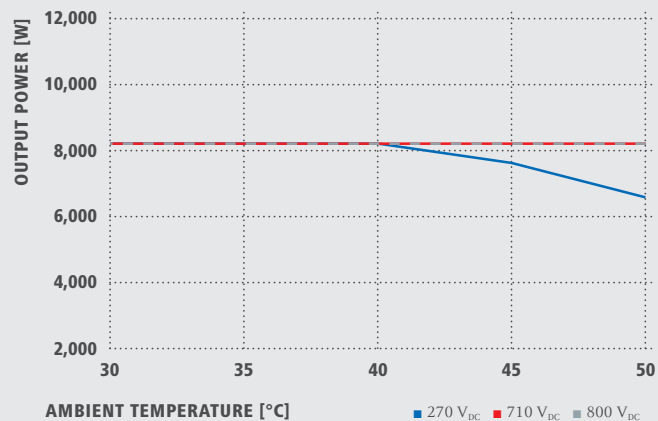| INTERFACES	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
WLAN / Ethernet LAN	Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)				
6 inputs and 4 digital in/out	Interface to ripple control receiver				
USB (A socket) [2]	Datalogging, inverter update via USB flash drive				
2x RS422 (RJ45 socket) [2]	Fronius Solar Net				
Signalling output [2]	Energy management (potential-free relay output)				
Datalogger and Webserver	Included				
External input [2]	S0-Meter Interface / Input for overvoltage protection				
RS485	Modbus RTU SunSpec or meter connection				

[1] According to IEC 62109-1.
[2] Also available in the light version.

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

FRONIUS PRIMO 8.2-1 EFFICIENCY CURVE

Axis: EFFICIENCY [%] (82–100) vs STANDARDISED OUTPUT POWER $P_{AC}/P_{AC,R}$ (0–1)
Legend: ■ 270 V_{DC} ■ 710 V_{DC} ■ 800 V_{DC}
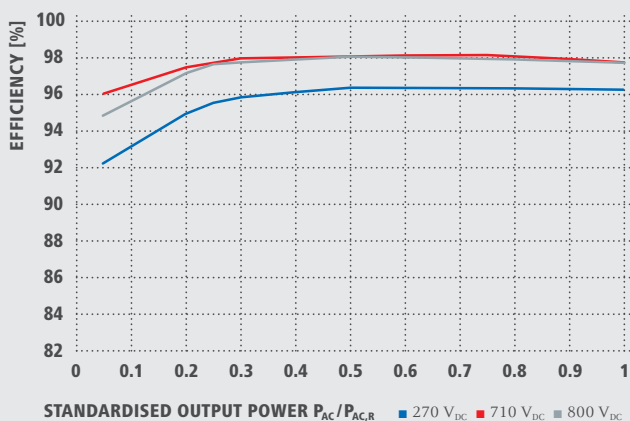
FRONIUS PRIMO 8.2-1 TEMPERATURE DERATING

Axis: OUTPUT POWER [W] (2,000–12,000) vs AMBIENT TEMPERATURE [°C] (30–50)
Legend: ■ 270 V_{DC} ■ 710 V_{DC} ■ 800 V_{DC}

TECHNICAL DATA FRONIUS PRIMO (5.0-1, 5.0-1 AUS, 6.0-1, 8.2-1)

INPUT DATA	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
Number of MPP trackers			2		
Max. input current ($I_{dc\ max\ 1}$ / $I_{dc\ max\ 2}$)	12.0 A / 12.0 A		18.0 A / 18.0 A		
Max. array short circuit current (MPP_1/MPP_2)	18.0 A / 18.0 A		27.0 A / 27.0 A		
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)			80 - 1,000 V		
Feed-in start voltage ($U_{dc\ start}$)			80 V		
Usable MPP voltage range			80 - 800 V		
Number of DC connections			2 + 2		
Max. PV generator output ($P_{dc\ max}$)	7.5 kW$_{peak}$	7.5 kW$_{peak}$	7.5 kW$_{peak}$	9.0 kW$_{peak}$	12.3 kW$_{peak}$

OUTPUT DATA	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
AC nominal output ($P_{ac,r}$)	5,000 W	4,600 W	**5000 W**	6,000 W	8,200 W
Max. output power	5,000 VA	5,000 VA	5,000 VA	6,000 VA	8,200 VA
AC output current ($I_{ac\ nom}$)	21.7 A	21.7 A	21.7 A	26.1 A	35.7 A
Grid connection (voltage range)			1 ~ NPE 220 V / 230 V (180 V - 270 V)		
Frequency (frequency range)			50 Hz / 60 Hz (45 - 65 Hz)		
Total harmonic distortion			< 5 %		
Power factor (cos $\varphi_{ac,r}$)			0.85 - 1 ind. / cap.		

GENERAL DATA	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
Dimensions (height x width x depth)			645 x 431 x 204 mm		
Weight			21.5 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			-40 - +55 ℃		
Permitted humidity			0 - 100 %		
Max. altitude			4,000 m		
DC connection technology			4x DC+ and 4x DC- screw terminals 2.5 - 16 mm²		
AC connection technology			3-pole AC screw terminals 2.5 - 16 mm²		
Certificates and compliance with standards			DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21, VDE AR N 4105 [2]		

[1] According to IEC 62109-1.
[2] Fronius Primo 5.0-1, Fronius Primo 6.0-1 and Fronius Primo 8.2-1 are not fully compliant with VDE AR N 4105.
Further information regarding the availability of the inverters in your country can be found at **www.fronius.com**.

EFFICIENCY	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
Max. efficiency	98.1 %	98.1 %	98.1 %	98.1 %	98.1 %
European efficiency (η_{EU})	97.1 %	97.1 %	97.1 %	97.3 %	97.5 %
MPP adaptation efficiency			> 99.9 %		

PROTECTIVE DEVICES	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
DC insulation measurement			Yes		
Overload behaviour			Operating point shift. power limitation		
DC disconnector			Yes		
Reverse polarity protection			Yes		

INTERFACES	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 5.0-1 SC	PRIMO 6.0-1	PRIMO 8.2-1
WLAN / Ethernet LAN			Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)		
6 inputs and 4 digital in/out			Interface to ripple control receiver		
USB (A socket) [1]			Datalogging, inverter update via USB flash drive		
2x RS422 (RJ45 socket) [1]			Fronius Solar Net		
Signalling output [1]			Energy management (potential-free relay output)		
Datalogger and Webserver			Included		
External input [1]			S0-Meter Interface / Input for overvoltage protection		
RS485			Modbus RTU SunSpec or meter connection		

[1] Also available in the light version.
Further information and technical data can be found at **www.fronius.com.**

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What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 3,800 employees worldwide and 1,242 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

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

v08 Aug 2017 EN

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