

# FRONIUS PRIMO

/ Optimised energy management.



/ SnapINverter Technology



/ Integrated data communication



/ SuperFlex Design



/ Dynamic Peak Manager



/ Smart Grid Ready



/ The Fronius Primo in power categories from 3.0 to 8.2 kW perfectly completes the new SnapINverter generation. This single-phase device is the ideal inverter for residential systems. Its innovative SuperFlex Design provides maximum flexibility in system design, while the SnapINverter mounting system makes installation and maintenance easier than ever before. The included communication package, with WLAN, energy management, several interfaces and much more, allows the Fronius Primo to communicate with the user, the PV system and the grid.

## 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 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
Max. input current (I <sub>dc max 1</sub> / I <sub>dc max 2</sub> )	12.0 A / 12.0 A				
Max. array short circuit current (MPP <sub>1</sub> /MPP <sub>2</sub> )	18.0 A / 18.0 A				
Min. input voltage (U <sub>dc min</sub> )	80 V				
Feed-in start voltage (U <sub>dc start</sub> )	80 V				
Nominal input voltage (U <sub>dc,r</sub> )	700 V				
Max. input voltage (U <sub>dc max</sub> )	1,000 V				
Usable MPP voltage range (U <sub>mpp min</sub> – U <sub>mpp max</sub> )	80 V - 800 V				
MPP voltage range at nominal power (U <sub>mpp min</sub> – U <sub>mpp max</sub> )	200 - 800 V			210 - 800 V	240 - 800 V
Number of MPP trackers	2				
Number of DC connections	2 + 2				

OUTPUT DATA	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
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 ( $I_{ac \text{ nom}}$ )	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 ( $\cos \phi_{ac,r}$ )	0.85 - 1 ind. / cap.				

<sup>1)</sup> Available upon request, conditions apply.

## 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 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
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) <sup>2)</sup>	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	2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>				
Mains connection technology	3-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>				
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21				

EFFICIENCY	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
Max. efficiency	97.6 %	97.7 %	97.7 %	97.7 %	97.8 %
European efficiency ( $\eta_{EU}$ )	95.2 %	95.6 %	95.7 %	96.0 %	96.3 %
MPP adaptation efficiency	> 99.9 %				

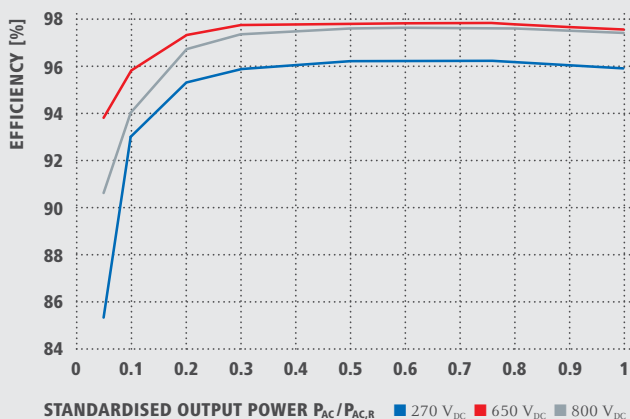
PROTECTIVE DEVICES	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
DC insulation measurement	Yes				
Overload behaviour	Operating point shift. Power limitation				
DC disconnecter	Yes				

INTERFACES	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1 <sup>1)</sup>	PRIMO 4.0-1	PRIMO 4.6-1 <sup>1)</sup>
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) <sup>3)</sup>	Datalogging, inverter update via USB flash drive				
2x RS422 (RJ45 socket) <sup>3)</sup>	Fronius Solar Net				
Signalling output <sup>3)</sup>	Energy management (potential-free relay output)				
Datalogger and Webserver	Included				
External input <sup>3)</sup>	S0-Meter Interface / Input for overvoltage protection				
RS485	Modbus RTU SunSpec or meter connection				

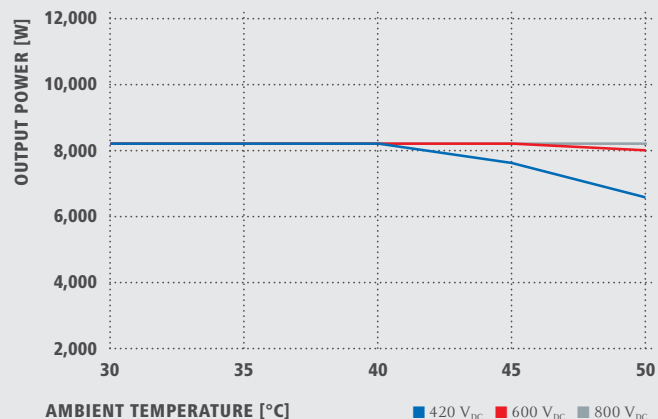
<sup>1)</sup> Available upon request, conditions apply. <sup>2)</sup> According to IEC 62109-1. <sup>3)</sup> Also available in the light version.

Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

## FRONIUS PRIMO 8.2-1 EFFICIENCY CURVE



## FRONIUS PRIMO 8.2-1 TEMPERATURE DERATING



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

INPUT DATA	PRIMO 5.0-1 <sup>1)</sup>	PRIMO 5.0-1 AUS	PRIMO 6.0-1	PRIMO 8.2-1
Max. input current (I <sub>dc max 1</sub> / I <sub>dc max 2</sub> )	12.0 A / 12.0 A	18.0 A / 18.0 A		
Max. array short circuit current (MPP <sub>1</sub> /MPP <sub>2</sub> )	18.0 A / 18.0 A	27.0 A / 27.0 A		
Min. input voltage (U <sub>dc min</sub> )	80 V			
Feed-in start voltage (U <sub>dc start</sub> )	80 V			
Nominal input voltage (U <sub>dc,r</sub> )	700 V			
Max. input voltage (U <sub>dc max</sub> )	1,000 V			
Usable MPP voltage range (U <sub>mpp min</sub> – U <sub>mpp max</sub> )	80 V - 800 V			
MPP voltage range at nominal power (U <sub>mpp min</sub> – U <sub>mpp max</sub> )	240 - 800 V			270 - 800 V
Number of MPP trackers	2			
Number of DC connections	2 + 2			

OUTPUT DATA	PRIMO 5.0-1 <sup>1)</sup>	PRIMO 5.0-1 AUS	PRIMO 6.0-1	PRIMO 8.2-1
AC nominal output ( $P_{ac,r}$ )	5,000 W	4,600 W	6,000 W	8,200 W
Max. output power	5,000 VA	5,000 VA	6,000 VA	8,200 VA
AC output current ( $I_{ac \text{ nom}}$ )	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 <sup>1)</sup>	PRIMO 5.0-1 AUS	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) <sup>2)</sup>	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	2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>			
Mains connection technology	3-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>			
Certificates and compliance with standards	DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21			

<sup>1)</sup> Available upon request, conditions apply. <sup>2)</sup> According to IEC 62109-1. Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

EFFICIENCY	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 6.0-1	PRIMO 8.2-1
Max. efficiency	97.8 %	97.8 %	97.8 %	97.8 %
European efficiency ( $\eta_{EU}$ )	96.4 %	96.4 %	96.7 %	97.2 %
MPP adaptation efficiency	> 99.9 %			

PROTECTIVE DEVICES	PRIMO 5.0-1	PRIMO 5.0-1 AUS	PRIMO 6.0-1	PRIMO 8.2-1
DC insulation measurement	Yes			
Overload behaviour	Operating point shift, power limitation			
DC disconnect	Yes			

INTERFACES	PRIMO 5.0-1	PRIMO 5.0-1 AUS	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) <sup>1)</sup>	Datalogging, inverter update via USB flash drive			
2x RS422 (RJ45 socket) <sup>1)</sup>	Fronius Solar Net			
Signalling output <sup>1)</sup>	Energy management (potential-free relay output)			
Datalogger and Webserver	Included			
External input <sup>1)</sup>	S0-Meter Interface / Input for overvoltage protection			
RS485	Modbus RTU SunSpec or meter connection			

<sup>1)</sup> 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 record of over 1,000 granted patents is 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](http://www.fronius.com)

v04 Nov 2014 EN

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## FRONIUS WARRANTY TERMS AND CONDITIONS

valid from: 01/04/2015

These warranty terms and conditions apply to first-installation Fronius inverters in Australia.

### Content of the warranty:

#### Fronius Warranty Plus/Warranty Extension Plus

The Fronius Warranty Plus/Warranty Extension Plus covers the costs of materials, servicing and transport under the terms and conditions indicated below.

#### Fronius Warranty/Warranty Extension

The Fronius Warranty/Warranty Extension covers the costs of materials under the terms and conditions indicated below.

### Duration of warranty:

In each case the warranty period begins the day that the products leave the Fronius factory.

#### String inverters (wall-mounted devices)

String inverters are supplied with a 5-year Fronius Warranty Plus.

Under the 10 year warranty promotion the standard 5 year Fronius Warranty Plus can be extended with an additional 5 year Fronius Warranty if the warranty holder registers the inverter (serial number) online at [www.solarweb.com](http://www.solarweb.com) in 2015. The warranty will be invalid if incorrect details are provided.

#### Central inverters (free-standing devices)

Central inverters are supplied with a 5-year Fronius Warranty Plus.

#### Solar Battery

The Fronius Solar Battery is supplied with a 2-year Fronius Warranty Plus.

The warranty period is extended free of charge if the warranty holder registers the Solar Battery (serial number) at [www.solarweb.com](http://www.solarweb.com) within 30 months (of being dispatched from the Fronius factory).

During this registration process, the warranty holder can choose between the Fronius Warranty for 7 years and the Fronius Warranty Plus for 5 years.

### Warranty services

If a fault should occur during the warranty period for which Fronius is responsible, Fronius itself will at its discretion either

- / make the corresponding spare parts available,
- / make an equivalent replacement device available,
- / repair this fault at its premises or on the customer's premises,
- / or have these services carried out by a suitably-trained Fronius Service Partner.

### Materials

"Materials" means that, during the warranty period, Fronius will bear the cost of materials (spare part or replacement device excluding labour costs) associated with the warranty service.

### Servicing

The warranty covers the labour costs associated with the materials, provided that these are incurred by Fronius itself or a Fronius Service Partner (service fee).

Other incidental costs (such as travel costs, installation costs, if these exceed the Fronius service fee, customs duties, etc.) are not covered by the warranties.

### Transport

The costs of national transport (over land and water) are covered in the country in which these warranty terms and conditions apply under the Fronius Warranty Plus or Fronius Warranty Extension Plus.

Fronius will not bear the costs of unjustified transport.

### General transport regulations

Devices or components are to be returned in the original or equivalent packaging. In principle, Fronius retains ownership of replacement devices and components inside or outside of the warranty/warranty exclusion until the faulty parts/devices have been received. In all cases ownership of the faulty device/parts is transferred to Fronius when the replacement device is received. If the faulty device/parts is/are not returned to Fronius within 90 days, they will be charged at the current replacement prices.

### Fronius Warranty Extension/Warranty Extension Plus

An extended warranty can be purchased up to 30 months after dispatch by Fronius Australia. Fronius may reject orders received later. The extended warranties only apply to Fronius inverters unambiguously identified by their serial number.

It is possible to extend the warranty to 10, 15 or 20 years from dispatch by Fronius.

### Considerations when making a warranty claim

First contact an installer, who will then contact Fronius if necessary.



SHIFTING THE LIMITS

The procedure in the event of a warranty claim must be agreed with Fronius. This is the only way of ensuring that the warranty services remain free of charge for the warranty holder.

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. The purchase price must have been paid to Fronius in full in order for the warranty service to be provided.

When devices or components are replaced, the remaining warranty period is transferred to the replacement device or replacement component. This is automatically registered at Fronius. A new certificate is not issued.

If servicing is carried out on site, the client must guarantee unrestricted access to the inverters. If necessary, the warranty holder must make the equipment required by the applicable health and safety regulations available free of charge.

#### **Scope and validity of the warranty**

The Fronius warranties apply only to inverters and Fronius AC Combiners that have been identified unambiguously by their serial number. These must be appropriately certified for the country of installation. The other components of the photovoltaic system and Fronius system add-ons (for example, plug-in cards), system monitoring components and pre-production devices are excluded from the warranty. These components fall under the corresponding provisions of the applicable General Delivery and Payment Conditions of Fronius.

#### **Exclusions from the Fronius warranties**

Failure to observe the operating instructions, installation instructions or maintenance procedures.

- / Improper installation
- / Improper commissioning
- / Improper transportation
- / Improper or incorrect operation
- / Inadequate ventilation of the device
- / Any work performed on the device by companies or persons that have not been authorised by Fronius
- / Failure to observe safety rules and installation standards
- / Force majeure (storm, lightning, overvoltage, fire, etc.)

If a hybrid inverter is used in the emergency power mode for more than 15% of its operating time, this will result in exclusion from the warranty.

Damage to the inverter caused by other components in the photovoltaic system or damage that does not impair the function of the inverter ("cosmetic flaws") is also excluded from the warranty.

The warranty does not cover travel and accommodation expenses as well as on-site assembly and installation costs,

if these exceed the service reimbursement paid to the installer by Fronius depending on the service and agreement.

Changes to the existing PV system, in-house installation and similar or the time involved and the costs incurred are not covered by the warranty.

Due to technological progress, the equivalent replacement or new device provided may not be compatible with the system monitoring or other components installed on site (e.g. Fronius DATCOM). The warranty does not cover the expenses and costs incurred as a result.

A claim for compensation cannot be made for energy that has not been fed into the grid or energy that has not been consumed in-house, etc.

Fuses and other wearing parts are excluded from the warranty.

#### **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](mailto: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](http://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.

The warranty agreement is concluded between Fronius and the warranty holder (owner of the installed system). For this reason, the system must be registered by the warranty holder using his Solar.web login credentials. Registration may only be performed by third-parties if they have been suitably authorised to do so. Non-compliance may result in a penalty. The warranty will be invalid if incorrect details are provided.

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

[www.fronius.com/solar/warranty](http://www.fronius.com/solar/warranty)