



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/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 ($U_{dc \text{ start}}$)			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 ($I_{ac \text{ nom}}$)	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 ($\cos \varphi_{ac,r}$)	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 mm ²				
AC connection technology	3-pole AC screw terminals 2.5 - 16 mm ²				
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 disconnecter	Yes				
Reverse polarity protection	Yes				

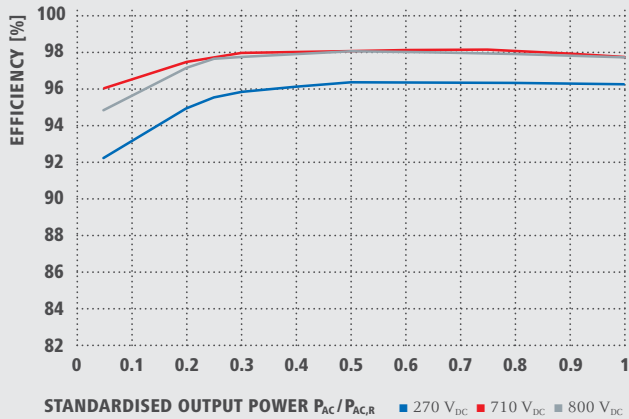
INTERFACES	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO 4.0-1	PRIMO 4.6-1
WLAN / Ethernet LAN	Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)				
6 inputs and 4 digital in/out	Interface to ripple control receiver				
USB (A socket) ²⁾	Datalogging, inverter update via USB flash drive				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

¹⁾ According to IEC 62109-1.

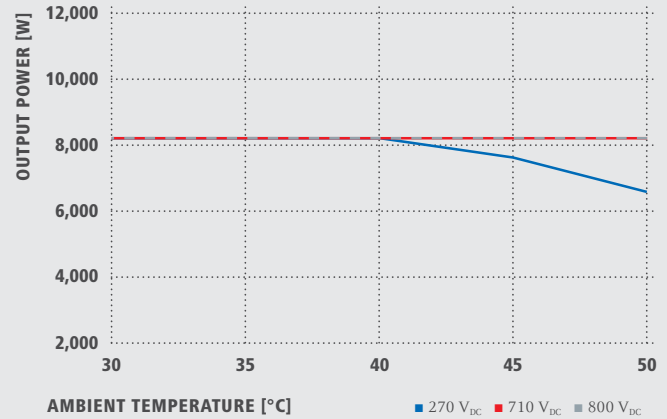
²⁾ Also available in the light version.

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



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	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}		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 °C				
Permitted humidity	0 - 100 %				
Max. altitude	4,000 m				
DC connection technology	4x DC+ and 4x DC- screw terminals 2.5 - 16 mm ²				
AC connection technology	3-pole AC screw terminals 2.5 - 16 mm ²				
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 disconnecter	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.

/ Perfect Welding / Solar Energy / Perfect Charging

THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

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

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WARRANTY CONDITIONS FOR FRONIUS INVERTERS AND THE FRONIUS DATAMANAGER

FOR THE FRONIUS WARRANTY AND FRONIUS WARRANTY PLUS

(Valid from: 15/09/2016)

Fronius International GmbH grants a warranty (as Fronius Warranty or Fronius Warranty Plus) for the warranty products defined here.

The warranty applies in addition to any legal or contractual claims and rights of the warranty holder and without prejudice to such claims or rights.

For more information about the Fronius Warranty please visit: www.fronius.com/solar/warranty.

Warranty products

This warranty applies exclusively to Fronius inverters and Fronius Datamanagers and only to the extent that these products are first installed in Australia and New Zealand and uniquely identified by their serial number. Fuses and other wearing parts are excluded from the warranty together with other components of the photovoltaic system as well as system add-ons, components for system monitoring and data communication, accessories and pre-production devices.

Warranty holder

Only the owner of the warranty product at the time of its initial installation is entitled to make a claim under this warranty. No other person shall have any rights under this warranty.

Warranty claim

A warranty claim exists in the event that a warranty product develops a fault for which Fronius is responsible within the warranty period.

Warranty exclusions

The warranty does not apply if

- / the fault is the result of improper installation, operation, commissioning or transport; failure to comply with the installation instructions or operating instructions; insufficient ventilation; work performed on the warranty product by a third party not authorised by Fronius; failure to heed the safety rules, operating instructions and installation standards; force majeure (storm, lightning, overvoltage, fire, etc.);
- / the fault has been caused by another component in the warranty holder's photovoltaic system;
- / Fronius could not identify a fault upon examination of the product;
- / the damage does not impair the function of the Fronius inverter ("cosmetic flaws");
- / the full purchase price of the warranty product has still not been paid to Fronius.

Warranty services

Fronius grants the Fronius Warranty Plus for a period of five years from dispatch from the Fronius factory. After these five years, Fronius grants different warranty services depending on whether the warranty holder selected the Fronius Warranty or Fronius Warranty Plus when registering the product at www.solarweb.com.

/ Fronius Warranty

- Material: Fronius will provide the relevant replacement part or an equivalent replacement device. The warranty holder does not have to pay for the replacement part or the replacement device. However, Fronius will not cover any removal and installation costs, labour costs, transport costs or costs for any other service.

/ Fronius Warranty Plus

- Material (see above)
- Service: Fronius will cover the labour costs for removing and installing the replacement part or replacement device, provided this work is undertaken by Fronius or a third party appointed by Fronius. Due to technological progress, the replacement part or replacement device provided may not be compatible with the system monitoring or other components installed on-site (e.g. Fronius DATCOM). Costs incurred as a result are not part of this warranty service and will not be covered by Fronius. Other costs, such as travel expenses, installation costs, customs duties, etc., will not be covered by Fronius. These services do not include modifications to the existing photovoltaic system of the warranty holder, his building wiring or other devices. The warranty holder must enable unrestricted access to the device(s) affected and provide all necessary equipment to comply with any applicable health & safety regulations free of charge.
- Transport: Fronius will cover any national transport costs incurred in relation to the Material and Service services, as necessary. Express delivery costs will not be covered.

Warranty period

The warranty period begins when the warranty product is dispatched by Fronius. The precise expiration date of the warranty can be checked by entering the serial number at www.solarweb.com.



SHIFTING THE LIMITS

Depending on the warranty product, the warranty periods for the Fronius Warranty and Fronius Warranty Plus are different.

Free warranty extensions can be claimed by the warranty holder within 30 months of the warranty product being dispatched by Fronius. The warranty extension is claimed by registering the warranty product together with its serial number at www.solarweb.com. The warranty extension applies exclusively to the warranty product unambiguously identified by its serial number.

Warranty extensions of up to 20 years can also be purchased within 30 months of the warranty product being dispatched by Fronius, depending on the warranty product.

Where parts or devices are replaced, the remaining warranty period is transferred to the replacement part or replacement device. This will be registered by Fronius automatically and the warranty holder will not receive a new certificate.

Overview of warranty product, warranty service and warranty period:

	String inverters (wall-mounted)	Central inverters (floor-mounted)	Datamanager
Warranty services from dispatch from Fronius factory	Fronius Warranty Plus	Fronius Warranty Plus	Fronius Warranty Plus
Warranty services from dispatch from Fronius factory	5 years	5 years	5 years
Free warranty extension available if registered at www.solarweb.com within 30 months of dispatch from the Fronius factory	✓ Fronius Warranty: to 10 years	Free warranty extension not possible	Is automatically covered by the warranty period of the inverter in which the Datamanager has been installed.
Warranty extension can be purchased from your installer within 30 months of dispatch from the Fronius factory	Fronius Warranty or Fronius Warranty Plus ✓ to 10, 15, 20 years	Fronius Warranty or Fronius Warranty Plus ✓ to 10, 15, 20 years	No warranty extension possible

Making a claim under the warranty, return of parts and devices – to be observed without exception:

In the event of a warranty claim, the warranty holder must first notify his installer, who in turn will contact Fronius.

The procedure to follow in the event of a warranty claim must be agreed with Fronius, as this is the only way to ensure that the warranty services can be provided. Warranty claims must be accompanied with the purchase invoice, the serial number of the warranty product, the commissioning report (handover date, commissioning date, report from the power supply company) and, where necessary, proof of payment of the warranty extension fee.

The warranty holder must return parts or devices in the original packaging or equivalent. If the faulty part or device is not received by Fronius within 60 days, the warranty holder will be charged for the part/device at the current price for a new part/device. Faulty parts and devices returned to Fronius become the property of Fronius upon receipt; until they are received, Fronius retains ownership of the corresponding replacement parts and devices.

It is the responsibility of the warranty holder to substantiate the warranty claim and show that the conditions are met.

A claim for compensation cannot be made for energy that has not been fed into the grid or energy that has not been used for self-consumption, etc.



SHIFTING THE LIMITS

WARRANTY CONDITIONS OF THE FRONIUS SOLAR BATTERY

Fronius grants the purchaser (end consumer) of the Sony “IJ1001M” battery module (hereinafter referred to as the Products) for use as the battery system for a photovoltaic storage system a two-year Fronius Warranty Plus covering the entire Fronius Solar Battery from the date of dispatch from the Fronius factory. This warranty can be extended by registering online at www.solarweb.com plus ensuring that an internet connection is established at least once a month between Fronius Solar.web and the Fronius Solar Battery. In this case the warranty holder receives a five-year Fronius Warranty Plus covering the Fronius Solar Battery plus a fifteen-year capacity guarantee covering the Sony “IJ1001M” battery module used, which includes repair or replacement in the scenarios listed below (see table).

Overview of warranty product, warranty service and warranty period:

	Fronius Solar Battery
Warranty services from dispatch from Fronius factory	Fronius Warranty Plus
Warranty services from dispatch from Fronius factory	2 years
Free warranty extension available if registered at www.solarweb.com within 30 months of dispatch from the Fronius factory	✓ Fronius Warranty Plus: to 5 years for the Fronius Solar Battery plus with monthly internet connection between Fronius Solar.web and the Fronius Solar Battery, Fronius capacity guarantee: to 15 years for Sony battery module **) Fronius Warranty: to 7 years
Warranty extension can be purchased from your installer within 30 months of dispatch from the Fronius factory *)	Fronius Warranty or Fronius Warranty Plus ✓ to 10 years

*) Subject matter of the warranty in the event of a warranty extension for the Fronius Solar Battery is exclusively the Sony battery module. A warranty extension for the other system components of the Fronius Solar Battery is not possible. If a Sony battery module is retrofitted, the existing warranty for the Fronius Solar Battery is transferred. If a warranty extension for the Fronius Solar Battery has already been purchased, the warranty holder must also purchase a warranty extension for the retrofitted Sony battery module.

**) With the capacity guarantee, the manufacturer guarantees that a minimum capacity of 68% of the rated capacity of the Sony battery module will be retained for up to fifteen (15) years, despite ageing of the battery cells.

In the event of a warranty claim, the value of the affected Products will be replaced in compliance with the conditions listed below. The current value of the Products affected by this warranty is generally replaced through the delivery of one or more replacement Products or through repair of the Products. The warranty begins from the date of dispatch from the Fronius factory and ends two (2) or fifteen (15) years after the purchase date (“Warranty Period”). In order to determine the date of the initial purchase, the purchaser must keep the original sales receipt for the entire Warranty Period and must present this to SONY on request. The unexpired portion of the Warranty Period will apply to the replaced or repaired Products. Replacement or Repair of Products under the terms of the warranty does not provide the right to a renewal of the Warranty Period.

A claim under the warranty exists in the event that the maximum recoverable capacity of the Product falls below 68% of the rated capacity on the data sheet within 15 years after purchase, or below 80% of the rated capacity on the data sheet within 10 years after purchase. The purchaser may claim on the warranty only by contacting a Fronius installer. The Fronius Repair Center will assess the maximum recoverable capacity, and in case of a capacity below 80% of the rated capacity, the Repair Center will repair or replace the Product. The battery components supplied as replacements will provide a recoverable capacity of over 80% of the rated capacity or over 68% of the rated capacity respectively. Replaced battery components shall become the property of the manufacturer.

Costs incurred for the assessment of the warranty claim (service use, capacity testing) are covered by this warranty only in the event of a confirmed warranty claim. Costs incurred for the implementation of the warranty claim (removal and installation costs, transport costs, etc.) are not covered by this warranty.

- The purchaser of the Product cannot claim under this warranty if
- ✓ the Products have not been installed inside (inside a building) and an ambient temperature of 5 to 35 °C has not been maintained;
 - ✓ the Products are exposed to direct sunlight, heat from heat-generating equipment or draught air such as in a garage;
 - ✓ the Products are moved from their original installation location;
 - ✓ the Products are not stored, installed, commissioned, charged, operated and maintained in accordance with the technical instructions as per the operating instructions;
 - ✓ the Sony battery module was not kept within a specific temperature range (see table). The battery manufacturer can check the temperature of the Fronius Battery Module and is able to determine whether the required temperature has been maintained throughout the entire service life.



SHIFTING THE LIMITS

Time distribution according to cell temperature (in % and hours)								
Cell temperature (°C)		60≥T>50	50≥T>45	45≥T>40	40≥T>35	35≥T>30	30≥T>25	25≥T
10 years	Time T (hours, %)	0 h 0,0%	0 h 0,0%	0 h 0,0%	0 h 0,0%	0 h 0,0%	0 h 0,0%	≤ 87.600 h ≤ 100%
15 years	Time T (hours, %)	0 h 0,0%	≤ 1003 h ≤ 0,8%	≤ 1505 h ≤ 1,1%	≤ 2007 h ≤ 1,5%	≤ 2509 h ≤ 1,9 %	≤ 22.903 h ≤ 17,4%	≥ 101.470 h ≥ 77,2%

- ✓ the warranty claim is not submitted immediately and no later than 14 days after the occurrence of abnormalities that may lead to a warranty claim as defined above, in writing by e-mail to Fronius.

In addition, the purchaser must – following prior consultation – ensure that SONY or Fronius representatives have access to the installed Products during usual business hours for the purpose of inspection in order to fulfil the warranty claim.

The warranty does not apply to Products that:

- ✓ have been modified or used with components not authorised by SONY;
- ✓ have been physically damaged;
- ✓ have been improperly, negligently or inappropriately handled in any other manner;
- ✓ are damaged with regard to their functionality due to external influences for which SONY is not responsible, such as a natural disaster, including floods and storms (force majeure);
- ✓ have exceeded 5475 charging cycles. Cycles can be checked either via the inverter or web server, whereby one cycle corresponds to a complete discharge and recharge;
- ✓ relate to a Fronius hybrid inverter as the warranty product and which has spent more than 15% of its operating hours being used in emergency power mode. This condition applies after the hybrid inverter has spent 1500 hours operating in emergency power mode.

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.