

## **FRONIUS GALVO**



/ With power categories ranging from 1.5 to 3.1 kW, the Fronius Galvo is perfect for households – and is especially suitable for self-consumption systems. The integrated energy management relay allows the self-consumption component to be maximised. A host of other smart features make the Fronius Galvo one of the most future-proof inverters in its class: for example, the integrated datalogging, the simple connection to the internet by WLAN, or the plug-in card technology for retrofitting additional functions.

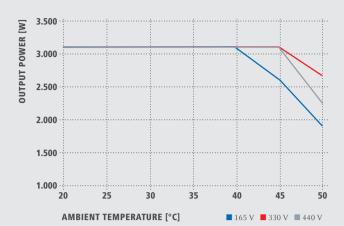
### **TECHNICAL DATA FRONIUS GALVO**

INPUT DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1	
DC maximum power at cos φ = 1	1,580 W	2,140 W	2,630 W	3,210 W	3,320 W	
Max. input current (I <sub>dc max</sub> )	13.3 A	17.8 A	16.2 A	19.5 A	20.2 A	
Max. array short circuit current	20.0 A	26.7 A	24.2 A	29.1 A	30.2 A	
Min. input voltage (U <sub>dc min</sub> )	120 V		165 V			
Feed-in start voltage (U <sub>dc start</sub> )	120 V		165 V			
Nominal input voltage (U <sub>dc,r</sub> )	260 V		330 V			
Max. input voltage (U <sub>dc max</sub> )	420 V		550 V			
MPP voltage range (U <sub>mpp min</sub> – U <sub>mpp max</sub> )	120 - 335 V		165 - 440 V			
Number of DC connections			3			

OUTPUT DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1		
AC nominal output (Pac,r)	1,500 W	2,000 W	2,500 W	3,000 W	3,100 W		
Max. output power	1,500 VA	2,000 VA	2,500 VA	3,000 VA	3,100 VA		
Max. output current (I <sub>ac max</sub> )	6.8 A	9.1 A	11.4 A	13.6 A	14.1 A		
Grid connection (U <sub>ac,r</sub> )		1-NPE 230 V					
Min. output voltage (Uac min)		180 V					
Max. output voltage (Uac max)	270 V						
Frequency (f <sub>r</sub> )	50 Hz / 60 Hz						
Frequency range (f <sub>min</sub> – f <sub>max</sub> )	45 - 65 Hz						
Total harmonic distortion	< 3.5 %						
Power factor (cos φ <sub>ac.r</sub> )	0.85 - 1 ind. / cap.						

GENERAL DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1	
Dimensions (height x width x depth)	645 x 431 x 204 mm					
Weight			16.8 kg			
Degree of protection			IP 55			
Protection class			1			
Overvoltage category (DC / AC)			2/3			
Night-time consumption			< 1 W			
Inverter concept			HF transformer			
Cooling	Regulated air cooling					
Installation	Indoor and outdoor installation					
Ambient temperature range	-25 - +50 °C					
Permitted humidity	0 to 100 %					
DC connection technology	Screw terminal connection 2.5 $\mathrm{mm^2}$ - 16 $\mathrm{mm^2}$					
Mains connection technology	Screw terminal connection 2.5 mm <sup>2</sup> - 16 mm <sup>2</sup>					
Certificates and compliance with standards	AS 4777-2&3, AS3100, IEC 62109-1&2, IEC 61727, IEC 62116, G83, G59, DIN V VDE 0126-1-1/A1, VDE AR N 4105, CER 06-190, CEI 0-21, EN 50438, ÖVE / ÖNORM E 8001-4-712					

### FRONIUS GALVO 3.1-1 TEMPERATURE DERATING



### **TECHNICAL DATA FRONIUS GALVO**

2x RS422 (RJ45 socket)2

S0 input / signalling output<sup>2)</sup>

Datalogger and Webserver

EFFICIENCY	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
Max. efficiency	95.9 %	96.0 %		96.1 %	
European efficiency (ηΕU)	94.5 %	94.9 %	95.2 %	95.4 %	95.4 %
η at 5 % Pac,r <sup>1)</sup>	84.5 / 86.0 / 86.0 %	84.2 / 86.1 / 85.9 %	88.6 / 89.6 / 89.4 %	88.2 / 89.2 / 89.1 %	88.4 / 89.4 / 89.4 %
η at 10 % Pac,r <sup>1)</sup>	87.5 / 89.7 / 89.6 %	89.6 / 91.4 / 91.3 %	91.2 / 92.3 / 91.4 %	91.8 / 93.1 / 92.1 %	91.9 / 93.3 / 92.3 %
η at 20 % Pac,r1)	91.3 / 93.3 / 93.1 %	92.6 / 94.3 / 93.9 %	94.0 / 94.8 / 94.5 %	94.4 / 95.0 / 94.9 %	94.5 / 95.0 / 95.0 %
η at 25 % Pac,r <sup>1)</sup>	92.4 / 94.1 / 93.9 %	93.3 / 94.9 / 94.5 %	94.5 / 95.1 / 95.0 %	94.8 / 95.5 / 95.3 %	94.8 / 95.5 / 95.4 %
η at 30 % Pac,r1)	93.0 / 94.6 / 94.3 %	93.6 / 95.2 / 94.9 %	94.8 / 95.5 / 95.3 %	94.8 / 95.7 / 95.6 %	94.9 / 95.8 / 95.6 %
η at 50 % Pac,r <sup>1)</sup>	93.9 / 95.5 / 95.2 %	94.3 / 95.8 / 95.2 %	95.0 / 95.7 / 95.2 %	95.0 / 96.0 / 95.5 %	95.0 / 96.1 / 95.6 %
η at 75 % P <sub>ac,r<sup>1)</sup></sub>	94.2 / 95.6 / 95.4 %	94.0 / 95.9 / 95.6 %	94.8 / 95.9 / 95.6 %	94.6 / 95.8 / 95.6 %	94.5 / 95.6 / 95.6 %
η at 100 % P <sub>ac,r<sup>1)</sup></sub>	94.0 / 95.9 / 95.6 %	93.5 / 95.6 / 95.5 %	94.4 / 95.7 / 95.5 %	93.9 / 95.4 / 95.3 %	93.7 / 95.2 / 95.3 %
MPP adaptation efficiency			> 99.9 %		

PROTECTION DEVICES	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1		
DC insulation measurement		Warning/shutdown (depending on country setup) at $R_{\rm ISO}$ < 600 kOhm					
Overload behavior		Operating point shift, power limitation					
DC circuit breaker		Included					
INTERFACES	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1		
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						

 $<sup>^{1)}</sup>$  and at  $U_{mpp\;min}\,/\,\,U_{dc,r}\,/\,\,U_{mpp\;max.}\,^{2)}$  also available in the light version.

/ Battery Charging Systems / Welding Technology / Solar Electronics

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

/ 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

Fronius International GmbH Froniusplatz 1 4600 Wels Austria pv@fronius.com www.fronius.com

Fronius Solar Net, interface protocol

Energy management (4-20 mA input / potential-free relay output)



### 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 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 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.

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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

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.

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

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### FRONIUS WARRANTY TERMS AND CONDITIONS

valid from: 01/01/2016

These warranty terms and conditions apply to original installation of Fronius inverters and the Fronius Solar Battery in New Zealand. The warranty holder is the owner of the installed Fronius product.

### Content of the warranty:

### Fronius Warranty Plus/Warranty Extension Plus

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

### Fronius Warranty/Warranty Extension

The Fronius Warranty/Warranty Extension covers 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.

### Fronius string inverters (wall-mounted devices)

Fronius 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 Fronius inverter (serial number) online at www.solarweb.com.

### Fronius central inverters (free-standing devices)

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

### Fronius Solar Battery

The Fronius Solar Battery consists of storage modules and additional system components.

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 Fronius Solar Battery (serial number) at 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 claim:

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 installer.

### **Materials**

The materials warranty means that Fronius will bear the costs of materials (spare parts or replacement device excluding flat-rate labour charge) in the event of a warranty claim during the warranty period, provided the other terms of these warranty conditions are met.

### Servicing

The services warranty means that Fronius will bear the labour costs associated with the materials in the event of a warranty claim during the warranty period, provided the other terms of these warranty conditions are met and provided these services are provided by Fronius itself or an installer.

### **Transport**

The transport warranty means that Fronius will bear the costs of domestic transport in the event of a warranty claim during the warranty period, provided the other terms of these warranty conditions are met and provided these costs are incurred in the course of the transport process agreed between the installer and Fronius. The installer is responsible to the warranty holder for adhering to the transport process.

### **General provisions**

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. Warranty extensions apply exclusively to Fronius inverters and Fronius Solar Batteries unambiguously identified by their serial numbers.

A warranty extension for the Fronius Solar Battery covers only the storage module of the Fronius Solar Battery. A warranty extension does not cover the other system components of the Fronius Solar Battery.

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

### Considerations when making a warranty claim

Contact your installer without delay. They will get in touch with Fronius regarding the warranty process. 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.

Fronius will not bear any costs incurred due to non-observance of the warranty procedures stipulated by Fronius (such as non-agreed transport costs, service charges, travel expenses, installation costs, customs duties, etc.). The installer is responsible toward the warranty holder for observance of warranty procedures.

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It is the responsibility of the warranty holder to substantiate the warranty claim and show that the conditions are met. In particular, the purchase invoice, serial number of the device and commissioning report (the date on which the device was provided, commissioning date and report from the power supply company), as well as proof of payment of the warranty extension fee, must be presented. 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 Fronius 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

Fronius warranties apply only to Fronius products that have been identified unambiguously by their serial number and certified for the country of installation. Other components of the photovoltaic system as well as system add-ons, system monitoring and data communication components, any accessories, and pre-production devices are excluded from the warranty.

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

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

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

A warranty claim may be made on the Fronius Solar Battery if the capacity falls below 80% of the usable capacity stated on the data sheet.

Storage modules may be retrofitted to the Fronius Solar Battery up to 30 months after dispatch of the Fronius Solar Battery by Fronius. The existing warranty covering the Fronius Solar Battery remains unaffected. If a Fronius Warranty Extension or Fronius Warranty Extension plus has been purchased for the Fronius Solar Battery, the warranty holder must also purchase a warranty extension for the retrofitted storage modules.

Damage to the Fronius inverter caused by other components in the photovoltaic system or damage that does not impair the function of the Fronius 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 inhouse, etc.

Fuses and other wearing parts are excluded from the warranty.

### Other legal information

Other legal warranty or liability claims against Fronius remain unaffected by this warranty.

In the event of such claims, please contact the vendor of your device. Our General Delivery and Payment Conditions under "Legal information" on our website (www.fronius.com) also apply.

The terms and conditions of this warranty supersede the terms and conditions that have been in force up to now.

The product must be registered by the warranty holder using their 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. Incorrect details given at the time of registration will invalidate the warranty.

Up-to-date and detailed information regarding warranty terms and conditions can be found on our website at www.fronius.com/solar/warranty

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## **END CUSTOMER REGISTRATION GUIDE - 10 YEAR WARRANTY**

Register your string inverter to get a 10 year warranty for free in 2015!

All Fronius string inverters come with 5 years Fronius Warranty Plus\*. Upon registration you can obtain an additional 5 years Fronius Warranty\*\*.

For more information go to www.fronius.com.au.

You can complete your registration in just a few simple steps:

### / 1. STEP

/ Go to www.solarweb.com

### If you don't already have a Solar.web account:

- / Click , Registration' and fill in the form.
- / You will receive a confirmation e-mail from Fronius.
- / Open the link provided in the e-mail.
- / Click , Register your device for extended warranty'.

### If you already have a Solar.web account:

/ Click the registration symbol 🔃 in the top right corner.

## Registration Total Section of the control of the

### / 2. STEP

/ Enter the serial number of your inverter in the appropriate text field.

You will find the serial number on the Fronius inverter's specification label.

/ Under 'Warranty' select the 10 year warranty option. / Click 'Register'.



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### / 3. STEP

/ Click , Generate PDF'.

/ Fronius Solar.web generates your personalised warranty certificate.



Once you complete the registration process you will have access to all services provided under the 10 year warranty promotion. With this certificate, Fronius confirms your claim to the services defined in the 10 year warranty promotion. You can download this certificate at any time from Fronius Solar. Web Classic.

In addition to warranty services, the Fronius monitoring platform Solar. Web Classic is freely available for your unlimited use. Here you will be able to access valuable status information and stay up-to-date on the operation of your installation!

Please note: To validate your data, we may ask you to provide your promotion certificate (obtained via online registration), purchase invoice, the serial number of the device and your commissioning report (in Australia: COES - Certificate of Electrical Safety) to make a claim under the 10 year warranty offer.

\*Under the Fronius Warranty Plus transport (within Australia only), labour and material costs will be covered by Fronius.

\*\*Under the Fronius Warranty material costs will be covered by Fronius.

### **10 YEARS WARRANTY**

5 YEARS FRONIUS WARRANTY PLUS 5 YEARS FRONIUS WARRANTY



/ 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.

 $Further information about all Fronius products and our global sales partners and representatives can be found at {\color{red}www.fronius.com} \\$ 

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