

/ Perfect Welding / Solar Energy / Perfect Charging



SHIFTING THE LIMITS



*Image courtesy of Anvil Crawler.  
For product details see back.*

**FRONIUS OFFERS SOLAR  
SOLUTIONS THAT LAST  
FOR DECADES  
OF SUNRISES TO COME.**



[www.24hoursofsun.com](http://www.24hoursofsun.com)

# FRONIUS: LEADING THE WAY FOR OVER 70 YEARS

## SHIFTING THE LIMITS – FROM THE START

/ When Günter Fronius developed the first battery charging system in 1945, he laid the foundation for what Fronius would represent for the next 70 years: the constant search for pioneering solutions to the technical challenges of the day. From the beginning, we have explored new technologies for converting and controlling electrical energy. This amounts to over seven decades of experience, progress and continuous innovation.

## A GLOBAL FAMILY-RUN ENTERPRISE – WITH STRONG VALUES

/ Fronius is a diversified company, with expertise in three areas: battery charging technology, welding technology and solar electronics. When the company began to expand beyond Austria to develop new international markets, our desire never changed: we want to be the technology and quality leader. Today we export roughly 92 percent of our products through our 23 international Fronius subsidiaries and sales distributors/representatives in more than 60 countries.

## A HEALTHY BUSINESS – WITH AN EXCELLENT CREDIT RATING

/ At Fronius we think in terms of sustainable growth, not only in quarterly sales figures. We are motivated by exciting innovations, not by share prices. In contrast to publicly traded companies, we are not governed by a compulsion for short-term profit maximisation. This enhances our strength and stability. Therefor Dun & Bradstreet (D&B) assigned the best-possible risk indicator of 1 to Fronius in 2015, which firmly underlines our responsible use of fiscal resources.



/ An interview with our founder Günter Fronius can be found at [www.fronius.com/howitbegan](http://www.fronius.com/howitbegan)



/ Founder and father Günter Fronius (center), together with his son, Klaus Fronius (left) and daughter, Brigitte Strauss (right).



/ Grand-daughter Elisabeth Engelbrechtsmüller-Strauss (center), continues the family tradition as Managing Director since 2012. She is Member of the Management Board for Finance and HR.

# TIME FOR A CONFIDENCE CHECK:

For a care-free investment you need reliable partners who will always stand by your side.

The inverter acts as your PV system's brain. Your entire investment's rate of return, in the form of generating renewable energy, depends on this device. Your choice of inverter should therefore never be left to chance. Ask yourself this all-important question: **which inverter manufacturer will help me achieve the best long-term energy yield from my PV system?**

## ? COMPANY CHECK

1. How long has the company been in business?
2. How long has it been active in the field of solar energy?
3. Is it a listed public limited company?
4. Is there a stable ownership structure?
5. Does the company have any alternative sources of revenue?

## ! FAMILY-RUN COMPANY

1. Fronius was founded by Günter Fronius in 1945
2. Fronius has been a solar pioneer for over twenty years
3. Fronius has remained unchanged in private hands for over 70 years
4. Yes, Fronius is a family-run company
5. Fronius is successfully active in three different industry sectors

## ? QUALITY CHECK

1. Does the company have a certified Quality Management System?
2. Are the company's products high quality?

## ! QUALITY LEADER

1. Fronius leads the way in quality manufacturing for the solar energy sector and has been certified in accordance with ISO 9001 for over 20 years
2. Fronius strives to create only outstanding products. Fronius has won multiple Plus X Awards - a German-based award for quality, supported by TÜV SÜD - for both the Fronius Galvo and Fronius Symo inverters

## ? SERVICE & SUPPORT CHECK

1. Does the company offer a service hotline?
2. Does the company provide service support in my country?

## ! EXPERT SUPPORT

1. Yes, Fronius Canada offers customers a national technical support hotline.
2. Yes, Fronius offers service support in more than 70 countries

## ? FUNCTIONALITY CHECK

1. Does the inverter possess additional slots for retrofitting new features?
2. Does the inverter have any open communications interfaces?
3. Can the inverter be serviced on-site?

## ! GREAT FUNCTIONALITY

1. Yes, Fronius inverters are fitted with extra plug-in card slots
2. Yes, Modbus TCP, JSON and Modbus RTU
3. Yes, the inverter can be swapped out by any installer, or a Fronius Service Provider can perform more detailed servicing

## ? WARRANTY CHECK

1. How long does the manufacturer's warranty last?
2. What services are included in the manufacturer's warranty?
3. How are warranty claims processed?

## ! STRONG WARRANTY

1. Fronius offers a 10-year manufacturer's warranty
2. A typical Fronius Warranty Plus is comprised of materials, transport, and service fee
3. Fronius offers a well-defined claim handling procedure managed by a professional support team, as well as on-site servicing by trained Fronius Service Providers

# 1. DEVELOPED FOR LASTING PERFORMANCE

Deciding to invest in a photovoltaic system is the first key decision. Selecting the right inverter is the next crucial decision. This is why choosing Fronius is the answer.

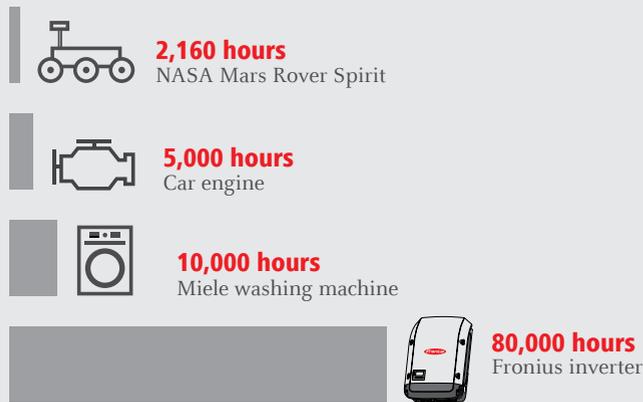
## A HOST OF INNOVATIONS IN EVERY DEVICE

The technological parameters for power generation are constantly evolving. Therefore you need highly functional inverters and energy solutions that can keep your PV system producing maximal yields for decades to come.

That is why we ask ourselves these three key questions for every new product idea or improvement:

- Does it increase the PV system's reliability?
- Does it increase the PV system's electricity yield?
- Does it make the PV system more future-proof?

## QUALITY TESTING FOR OPERATIONAL LIFE (IN HOURS)



## FRONIUS QUALITY KNOWS NO BOUNDS

At Fronius, quality is more than just a buzzword. Fronius is a quality pioneer in the solar energy sector and has been certified in accordance with ISO 9001 for over 20 years. The Fronius SnapINverter line was also ranked one of 2015's Top Solar Products by Solar Power World. Every single Fronius product undergoes stringent quality control measures and is thoroughly tested before shipping.

## QUALITY ASSURANCE DURING PRODUCTION

### NOMINAL OUTPUT TEST

Tested across the entire input voltage range

### BURN-IN TEST

Brief bursts of intensive operation with temperature changes

### TEST SERIES FOR

### OPERATIONAL RELIABILITY

High-voltage test, irradiance test and functionality test of protection devices

## LIVE TEST DATA TRACKING

REACTS EVEN BEFORE TOLERANCE LIMITS ARE REACHED

100% FINAL TESTING

## WHILE OTHERS PROGRESS STEP-BY-STEP, WE INNOVATE IN LEAPS AND BOUNDS



*"Every day, we work hard to realise our vision of "24 Hours of Sun" - a future where all of our energy is based on renewables. That is why we are developing new solutions that inspire our customers and impress through sheer quality."*

**HEINZ HACKL - MEMBER OF THE MANAGEMENT BOARD FOR R&D AND QUALITY MANAGEMENT**

## ALL DEVICES ARE FULLY TESTED BEFORE LEAVING THE FRONIUS FACTORY



*"Every Fronius inverter is tested thoroughly before dispatch. After all, a penny invested in quality assurance saves a dollar for us and our customers."*

**THOMAS HERNDLER - MEMBER OF THE MANAGEMENT BOARD FOR MANUFACTURING**

Fronius endurance tests, inside the lab:  
[www.fronius.com/endurancetests](http://www.fronius.com/endurancetests)

Quality through innovation - the video:  
[www.fronius.com/quality](http://www.fronius.com/quality)

## 2. SERVICE WITHOUT CONDITIONS

We do not merely sell products, but instead promise complete product solutions with after-sales services included.

### FRONIUS SOS - A 24/7 ONLINE SUPPORT TOOL

Fronius Solar Online Support (SOS) is an online portal that helps installers to troubleshoot more effectively in the field by providing detailed product information. This tool allows installers to look up step-by-step directions to resolve state codes, confirm warranty coverage and submit service cases directly to technical support. Fronius rolled out this service to Canada in the fall of 2016. Fronius Service Providers will have additional capabilities, including requesting an exchange and ordering replacement parts.

### TECH SUPPORT IN YOUR POCKET WITH FRONIUS SOS



- TRACK STATUS OF OPEN SERVICE CASES
- LOOK UP DEVICE SPECS AND WARRANTY COVERAGE BY SERIAL NUMBER
- TROUBLE SHOOT BY DEVICE AND STATE CODE
- SUBMIT A SERVICE CASE ONLINE, WITHOUT GOING THROUGH THE TECHNICAL SUPPORT HOTLINE

### SERVICE SUPPORT YOU AND YOUR CUSTOMER CAN DEPEND ON



*"The Fronius SOS platform enables us to find the device history on-site and order spare parts with no processing delay. This saves us time and phone calls to find out if the device is under warranty or not, then we can relay [this information] to the customer."*

**STEPHEN LEE, DIRECTOR OF SGL SOLUTIONS PTY LTD**

### QUICK PROBLEM-SOLVING WITH FRONIUS FSP

Give your customers world-class after-sales service as an authorized Fronius Service Provider (FSP). For inverters serviced directly through Fronius, a replacement inverter must be shipped from our warehouse and swapped out. But Fronius Service Providers are able to stock their own repair parts and with the help of Fronius technical support, can diagnose and repair all types of Fronius inverters on-site. Offer your clients complete O+M solutions and incredibly fast on-site service. The FSP program will be rolled out in Canada in late 2016.

### THE FASTEST SERVICE PLAN ON THE MARKET



### A PARTNERSHIP THAT BENEFITS INSTALLER AND MANUFACTURER



*"As a quality-focused electrician and solar installer, I have been extremely impressed with Fronius. The product warranties and ability to repair inverters on-site provides an outstanding service to our customers. Since making the switch to Fronius, I have not looked back."*

**ADRIAN REDDIFORD, FRONIUS FSP AND MANAGING DIRECTOR AT ENERGYSPEC ELECTRICAL**

Fronius Solar Online Support:  
[www.fronius.com/sos](http://www.fronius.com/sos)

Unique service program, Fronius FSP:  
[www.fronius.com/ServicePartner\\_EN](http://www.fronius.com/ServicePartner_EN)

# 3. WE BUILD FOR THE LONG-TERM

With Fronius, your system's yield is secured over the long-term. Whatever the future may bring, a Fronius inverter is ready for anything.

## WANTED: A COMMUNICATIVE TEAM-PLAYER

With the future's spotlight shining brightly on solar + storage and home energy management systems, energy generation must integrate cleanly with energy consumption. By working with other manufacturers, we are ensuring that Fronius inverters can communicate and operate as part of a complete energy system. We believe that the 24 Hours of Sun revolution (100 percent renewables) can be achieved more quickly by cooperating with other technological innovation leaders.

## WORKING TOGETHER FOR MORE



## EQUIPPED FOR THE DEMANDS OF TOMORROW

We believe that inverters should be able to communicate with other devices and the smart grid, as well as have the capacity to be upgraded. Only inter-device communication will allow a PV system to deliver maximum yield over its lifetime. Fronius inverters:

- Use an upgradeable software platform
- Are equipped with additional plug-in card slots in order to retrofit features as needed
- Are ready for the intelligent power grids of tomorrow

## ALREADY PREPARED FOR 24HRS OF SUN WITH FRONIUS

The section contains three stacked boxes with icons and text:  
1. Top box: A calendar icon with a plus sign and a circular refresh icon. Text: 'CONTROL POWER CONSUMPTION AND STORE SURPLUS ENERGY'.  
2. Middle box: A smart grid antenna icon. Text: 'SMART GRID READY' and 'SMART CONTROL AND DISTRIBUTION AT GRID LEVEL'.  
3. Bottom box: A red circle with '24HRS SUN' and a goal icon. Text: 'GOAL: MEET GLOBAL ENERGY DEMAND WITH 100% RENEWABLE ENERGY'.

## SEAMLESS THIRD-PARTY MONITORING INTEGRATION WITH FRONIUS DATCOM MONITORING



*"The ability to run third-party monitoring in parallel with the Fronius Solar.web platform is an asset for any system owner / solar asset manager. Clients can add Fronius inverters to existing monitoring tools seamlessly."*

**ALBERT DE SOUSA, OPERATIONS MANAGER AT ISOLARA SOLAR POWER**

## ADVANCED SMART GRID FEATURES WINS FRONIUS THE SCIENCE NORTH PROJECT



*"After reviewing the capabilities of various inverters, we decided to deploy the Fronius Symo inverters with their Advanced Grid features. These smart inverters already meet the requirements grid operators will be looking for in the future."*

**ROLF MAURER, ARNTJEN SOLAR AND MARK GIBSON, SCIENCE NORTH**

How to control the power you produce:  
<http://bit.ly/2fckRAo>

Ready for the future of energy:  
[www.fronius.com/24hsun](http://www.fronius.com/24hsun)

# 4. A PARTNERSHIP WITHOUT AN EXPIRY DATE

An inverter must work for years before a PV system recoups its initial cost. This is why ongoing service and dependable support are crucial for maintaining peak performance.

## PROGRESSING TOGETHER

Even fully functional PV systems may require updates or retrofits as technology progresses or as the electrical code evolves. In Canada, Fronius has responded quickly to code updates and protected our customers by quickly bringing these reliable solutions to market:

- Arc fault protection
- Rapid shutdown solution
- Advanced grid features
- Zero feed-in functionality

## UPDATE SUPPORT FOR MANY YEARS

PRESENT	
2001	FRONIUS IG
2007	FRONIUS IG PLUS
2009	FRONIUS IG TL
2014	FRONIUS SNAPINVERTER

COMPREHENSIVE PRODUCT UPDATE SUPPORT  
FROM MARKET LAUNCH UNTIL TODAY

## CODE COMPLIANCE IS A CONSTANT CHALLENGE, BUT FRONIUS IS VIGILANT



*"At Fronius, we are always hard at work to develop new products and features to keep ahead of the regulatory demands. With our passion for solutions, we will keep our clients in compliance with whatever the future holds for the solar industry."*

**WARREN GRAHAM, FRONIUS  
CANADA TECHNICAL SUPPORT**

## MADE TO LAST

It's a PV system's second decade that determines cost effectiveness. Fronius inverters can be serviced quickly and easily on-site. Repairing an inverter made to last 20 years (vs. device replacement) reduces capital costs and e-waste. Fronius promises:

- Fastest on-site service across the solar energy sector
- Spare parts will be available for at least 10 years after a model is discontinued
- Environmentally sustainable service

## DEVELOPED FOR THE FASTEST ON-SITE SERVICE

COST-EFFECTIVE AND ENVIRONMENTALLY-FRIENDLY PCB  
REPLACEMENT IS ONLY POSSIBLE WITH FRONIUS

STRING INVERTER REPLACEMENT TIME



FRONIUS  
SNAPINVERTER

**MAX. 2 MIN**

COMPETITOR PRODUCTS

**10 MIN +**

## WARRANTIES ARE BINDING PROMISES: FRONIUS SOLAR ENERGY HAS BEEN THE ONE TO TRUST SINCE 1995



*"Our PV system has been running with a Fronius Sunrise 2000 inverter since 1996. The Sunrise stopped working once after it was hit by lightning, but even that was quickly repaired."*

**RUDOLF MITTER,  
HILKERING, AUSTRIA**

Always up to date with the latest firmware:  
<http://bit.ly/2eCQ8IT>

An age of discovery in the solar electronics industry:  
[www.fronius.com/solar/history](http://www.fronius.com/solar/history)

# FRONIUS SNAPINVERTERS

The Fronius SnapINverter line is Fronius' award winning line of grid-connected string inverters. We are pleased to announce that in time for FIT 4, four new Fronius Primo sizes are available. You can now order the compact Fronius Primo single-phase, 208/240 V inverter in 10.0, 11.4, 12.5 or 15.0 kW. Additional stock of the Fronius IG Plus A is also available. The Fronius Symo was extremely popular for FIT 3 portfolios due to its easy installation and repair and flexible design options.



New Primo sizes! Now available  
in 10 / 11.4 / 12.5 / 15 kW

Symo was a leading inverter  
for FIT 3 in 2015!

## TOP 10 REASONS FRONIUS INVERTERS OUTPERFORM THE COMPETITION

1. Highest de-rating, beginning at 55 C for the Fronius Symo
2. Flexible design for ground and rooftop projects
3. Over-sizing tested and guaranteed up to 50%
4. Fully isolated MPP trackers
5. Both the Fronius Symo and Fronius Primo have 2 MPP trackers
6. Fronius Symo offers 12 finger safe fuse holders
7. External housing is rated NEMA 4X
8. Will operate at -40 C
9. To save on BOS costs, copper or aluminium wiring can be used on both AC and DC side.
10. Virtually maintenance-free and field serviceable



250 kW and 500 kW e-housing solutions. Pre-wired Fronius Symo inverters inside.

## GROUND-MOUNT SOLUTION

Improve inverter performance, installation speed and safety with a complete e-housing solution from Anvil Crawler. Designed to your project's specifications, the container is delivered to site with all inverters tested, mounted, wired and monitoring set up. Contact Fronius for pricing. Ask for 250 kW and 500 kW configurations.

**ANVIL CRAWLER**  
DEVELOPMENT CORP.

/ 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 3,700 employees worldwide, we shift the limits of what's possible - our record of over 800 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)

v06 Apr 2016 EN

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