

# FRONIUS **IG**

PV Central Inverter



**POWERING YOUR FUTURE**



AWESOME

## YOUR OWN SOLAR POWER STATION

Photovoltaics are constantly on the upswing, which is good news for both nature and our energy balance. Fronius has developed a new series of central inverters to keep up with the trend towards increasingly powerful systems: the FRONIUS IG 300, 400 and 500 models are suitable for systems starting with an AC output power of 24 KW.

Maximum efficiency and total reliability are obligatory for all Fronius products. This new series of central inverters is no exception. The modular construction and decades of tested technology, together with promising innovations for the future, make the new inverters the most efficient on the market.



## HIGH-QUALITY:

The Best in their Power Class.

The new central inverters will make your life easier: here we see the emergence of power packs that convert solar energy into high-quality electricity on a large scale.

This Fronius development, just like all others, has also been based on four central parameters:

- Optimum user-friendliness
- Maximum efficiency
- Unconditional reliability
- Professional system monitoring

The new series not only successfully integrates these features but also demonstrates new, amazing characteristics. The intelligent inverter concept and the built-in features make the series lighter, smaller, easier to install and easier than ever to maintain. All this at an excellent price/performance ratio.

## INNOVATIVE:

Up to 15 power racks work in the MIX™ concept.

The FRONIUS IG central inverters work with a completely new system configuration. There is not only one power stack converting the electricity but also 9, 12 to 15 printed circuit boards that share the work, depending on the output class. The reason for this is that it is well-known that the energy yield increases in part-load areas if smaller power stacks are operated at higher capacity. Therefore, every FRONIUS IG central inverter works with several smaller power stacks that switch on or off completely automatically depending on irradiance so that they can always deliver maximum power. The Fronius MIX™ concept is particularly interesting in areas such as Central Europe where part-load ranges, such as heavy cloud, fog and the like, are typical. It has already been used successfully in the FRONIUS IG 40 and 60. Here the power stacks work alternately as master or slave. This appreciably reduces the operating hours of the individual power stacks and increases the system's life.



FIRST CLASS



HIGH OUTPUT.  
LOW WEIGHT.

Do you still think that central inverters have to be big and heavy to exploit their power? Then you should take a closer look at the new FRONIUS IG central inverters.

Weighty in performance but nonetheless amazingly light and compact in size, they are both easy to transport and install.

## VERSATILE:

All-Rounder with Special Skills.



**Ventilation Control.** The innovative ventilation system prevents unwanted heating and dust deposits.

**Module-Manager™.** The intelligent Module-Manager™ from Fronius quickly finds the maximum power point (MPP): the working point for maximum output. The yield is always the best available. This even applies to the thin-film modules that are particularly demanding in this respect.

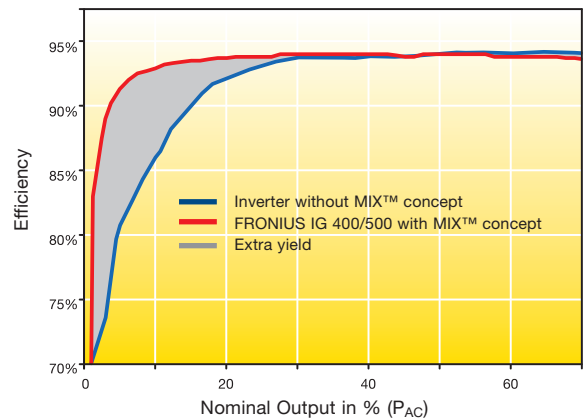
**Safety.** Electrical isolation ensures the highest level of safety. Due to the high-frequency technology, the space-saving transformer is capable of transmitting an extraordinary amount of power very safely.

**Focus.** The display exhibits the intelligent communication interface between the PV-system and the operator on site. Operation is simple and self-explanatory as with the smaller classes of inverters.

**Interface.** The integrated COM Card with sufficient space for Datalogger and modem presents the best possible prerequisite for installing a professional PV monitoring system.



**Replaceable.** The individual printed circuit boards – up to 15 – are easy to pull out because of the plug-in racks. They also enable optimum utilisation of the inverter and therefore maximum output.



**Increase in output.** The MIX™ concept converts part-load into full-load. Therefore, efficiency is increased and the yields are optimised in the part-load area.

## ADAPTABLE:

Easy Installation with very little effort.

The power stacks of the FRONIUS IG central inverter are pulled out as easily as racks (drawers). Nothing more than a screwdriver is necessary. Taking out the plug-in power units reduces the weight considerably. This is made possible by the high-frequency transformer technology. Every unit is easy to install as a result: simply pull out the racks, set up the FRONIUS IG central inverter and plug the racks back in again!

With a footprint of approx. 60 x 60 cm and an installation height of approx. 2.30 m, the central inverters can be placed in practically any location.

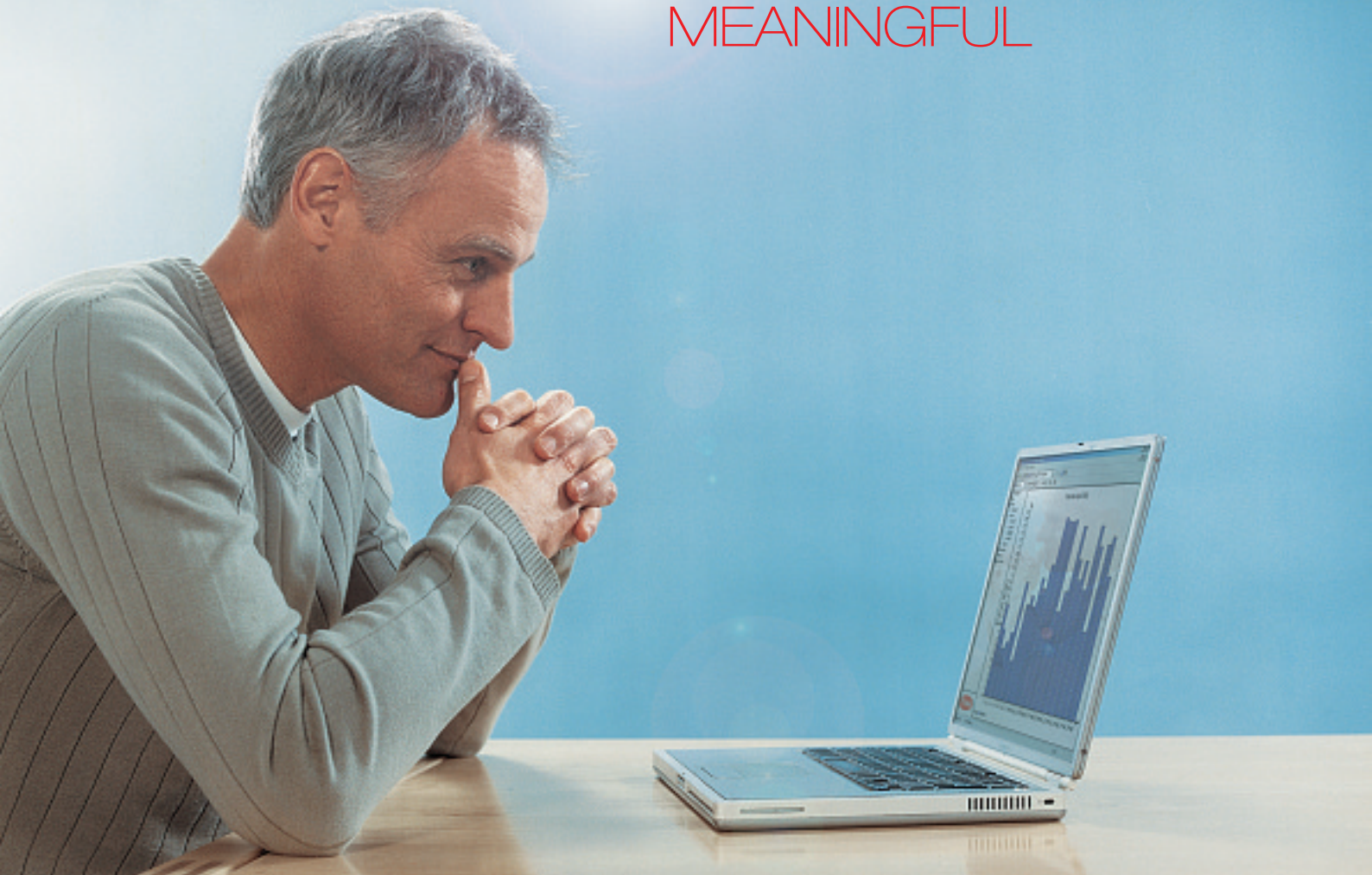
## DYNAMIC:

Fault-Redundant System for Continuous Power Generation.

Generally speaking there is no need to worry about the reliability of our inverters. However, in the event of a failure, handling is rapid and uncomplicated with the FRONIUS IG central inverter's ingenious plug-in system, setting it apart from other central inverters. If a power circuit fails, it does not bring the entire PV system to a standstill, since the remaining racks simply take over the work of the rack that has failed. This is another important advantage of the MIX™ concept.

A partial failure of the inverter only lasts until a replacement rack arrives: remove the faulty printed circuit board, insert the new one, and you are ready to go again. This ensures that the system continues to produce electricity and keeps output losses, if any, to a minimum. Thus the energy yield is always held at the maximum level.

# MEANINGFUL



## FRONIUS **IG** DATCOM:

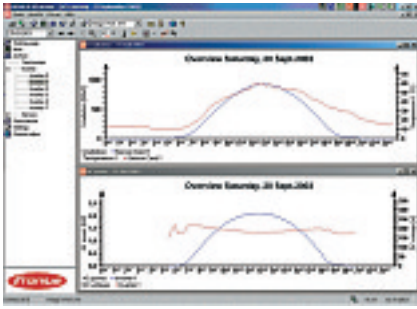
Professional System Monitoring.

With inverters of this magnitude, a professional monitoring system is necessary to check that all system components are working properly. The FRONIUS IG DatCom system provides comfortable data recording, visualisation and analysis of the entire system. In this case all the individual components are perfectly matched to each other. The heart of the system is the Datalogger that collects all the system's data. Like most of the expansion modules, it is available as a card or a box. Installation takes only few seconds thanks to plug & play technology. The COM Card is the interface between the inverter and the Datalogger and is already built into every FRONIUS IG central inverter.

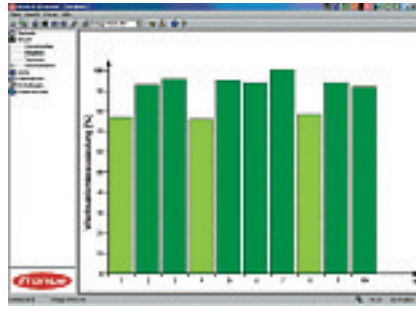
## FRONIUS **IG**.ACCESS:

The Brain of the System.

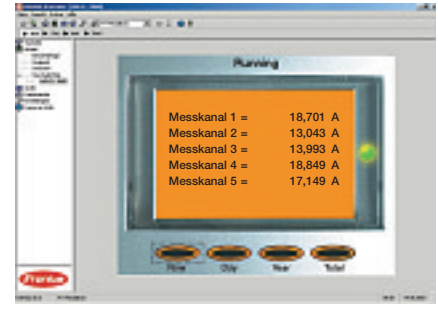
The analysis and visualisation software makes it easier for you to process the collected data into a meaningful form. It is very simple to achieve professional visualisations and implement monitoring processes. Get the desired information displayed clearly, check the data of your PV system or, if necessary, optimise it. All this from the comfort and convenience of your PC. The latest feature of this software is the automated data download of the PV system. Every day FRONIUS IG.access compares the output of the strings or inverters. The requirement for monitoring the strings using FRONIUS IG DatCom and FRONIUS IG.access is the installation of the FRONIUS String Control. The system informs you immediately if fluctuations in output occur!



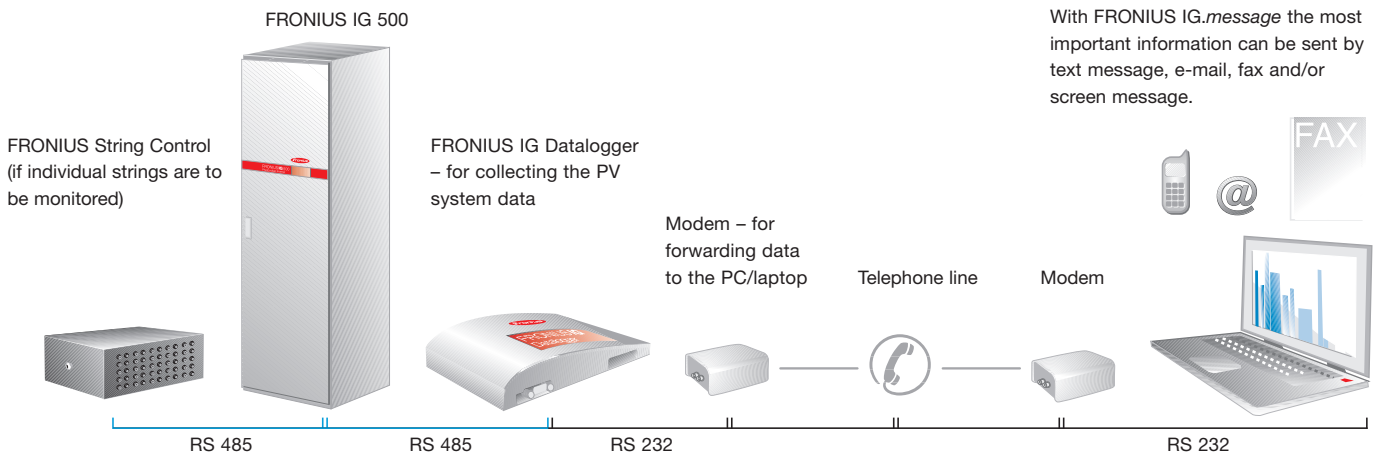
**The brain of the system: FRONIUS IG.access.** Easy analyses, monitoring and control from a PC.



**Automatic data download.** The system values are automatically downloaded and checked. The program works in the background as long as the values are ok. The user only receives a message on the PC if faults occur.



**FRONIUS String Control.** The optional single string monitoring system allows 25 strings to be monitored separately per box with up to 5.000 strings in the overall system. This means more security for reliable energy production.



## NEW: FRONIUS IG.MESSAGE: The Practical Alarm Software.

With the FRONIUS IG.message software you can have the inverter's alarm messages sent to you as computer screen alarms as well as via fax, text message or e-mail.

Two modems are required for this – one in the data logger and another in the PC – which forward the alarm messages to the FRONIUS IG.message software (see graphic).


## FRONIUS STRING CONTROL: Complete Monitoring of Every String.

As large numbers of module strings are connected in parallel with PV systems of this size, it is difficult to detect faults in the individual strings. For this reason we have developed the optional FRONIUS String Control, which is a box that can monitor up to 25 strings. You can combine up to 200 boxes, thereby monitoring up to 5000 strings in one system.

Every individual connection is protected with its own specific DC fuses. If one of the strings is faulty, the installer can easily trace which string is not working and establish the reason why.

The result is reliable energy production.

# THE FRONIUS IG CENTRAL INVERTER

Every FRONIUS IG meets all the necessary guidelines and standards. Further information and certificates may be found at [www.fronius.com](http://www.fronius.com) under "Downloads". Of course all FRONIUS IG products have the  symbol.

INPUT DATA	FRONIUS IG 300	FRONIUS IG 400	FRONIUS IG 500
MPP voltage range	210 - 420 V	210 - 420 V	210 - 420 V
Max. input voltage (at 1000 W/m <sup>2</sup> ; -10°C)	530 V	530 V	530 V
Recommended PV plant output	24 kWp - 31 kWp	32 kWp - 42 kWp	40 kWp - 52 kWp
Max. input current	123 A	164 A	205 A

OUTPUT DATA	FRONIUS IG 300	FRONIUS IG 400	FRONIUS IG 500
Nominal output	24 kW	32 kW	40 kW
Max. power output	24 kW	32 kW	40 kW
Max. efficiency	94,3 %	94,3 %	94,3 %
Euro efficiency	93,3 %	93,4 %	93,5 %
Mains voltage / frequency	3NPE-400 V / 50 Hz		
Distortion factor	< 5 %		
Power factor	1		
Power consumption at night	9 W		

GENERAL DATA	FRONIUS IG 300	FRONIUS IG 400	FRONIUS IG 500
Size (l x w x h) IP 20 incl. socket (200 mm) up to top edge of exhaust pipe	600 x 600 x 2557 mm		
Size (l x w x h) IP 43 incl. socket (200 mm)	1112,5 x 600 x 2444,5 mm		
Weight	225 kg	245 kg	265 kg
Cooling	controlled forced-air cooling		
Housing variations (optional)	IP 20 (IP 43)		
Ambient temperature range	-20°C to 50°C		
Permissible humidity	0 to 95 %		

PROTECTIVE DEVICES	FRONIUS IG 300	FRONIUS IG 400	FRONIUS IG 500
DC insulation measurement	warning when R <sub>ISO</sub> < 500k Ohm		
Behaviour on DC overload	displacement of operating point		

STRING CONTROL	
Max. number of strings	25
Max. input current	125 A
Max. input current per string	20 A
Connections (DC in)	MC, Tyco
Connections (DC out)	M10 cable lug
DatCom Connections	2 x RJ 45
Ambient conditions	-20°C to 40°C
Degree of protection	IP 45
Max. voltage	530 V
Power supply	12 V dc
Size (l x w x h)	416 x 415 x 179 mm
Weight	6 kg



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