



SHIFTING THE LIMITS



**RELIABLY HIGH YIELDS ARE
ONLY POSSIBLE USING
TOP-OF-THE-RANGE-TECHNOLOGY.
WE AIM HIGHER.**

/ Solar Electronics. Product Range 2011/12.

Text and illustrations were accurate at the time of going to press. We reserve the right to make changes.
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**WE THRIVE ON CHA
SO WE DECIDED TO
LUTIONISE THE ENE
SUPPLY OF OUR PL**

/ As a leading producer of inverters, Fronius is constantly shifting the limits of what's possible by developing innovative solar electronic solutions. Our technologies guarantee first-rate quality and maximum yield all over the world, backed up by a totally unique service concept.

**CHALLENGES.
REVO-
LUTARY
ENERGY
MANAGEMENT.**



AT THE HEART OF EVERY PV SYSTEM.



/ Fronius inverters produce green energy – with efficiency levels of up to 98%. Find out more about the full range of Fronius inverters on pages 10–35.



FUNCTION AND YIELD AT A GLANCE.

/ User-friendly and clearly laid-out – just two of the features that make our Fronius DATCOM monitoring system so impressive. For details of the complete system plus accessories, see pages 36–45.

CLEAN ENERGY – RELIABLE ENERGY.



/ The energy concept of the future: the Fronius Energy Cell. Find out more on pages 48–49.

FRONIUS VALUES.



/ There's a lot of know-how packed into our inverters. Learn all about our technologies on pages 06–09.

PRECISE SIZING.

/ The Fronius Solar.configurator helps you achieve the optimum system design for your Fronius inverters. See pages 46-47.

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FOR MAXIMUM YIELDS AND THE BEST POSSIBLE INSTALLATION AND SERVICE.

/ With our grid-connected inverters, we are among the leading suppliers worldwide. Our innovative technologies achieve maximum yields. And our mounting system makes installation extremely easy. Other advantages are simple servicing and the highest levels of fault tolerance.

THE PERFECTION IS IN THE DETAIL: A LOOK INSIDE OUR INVERTERS.

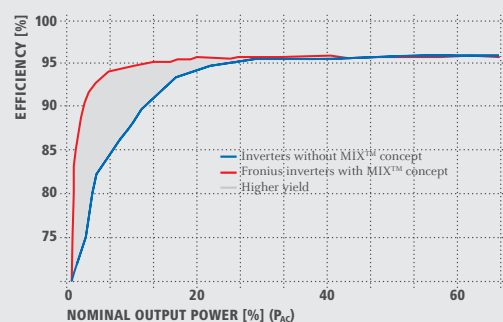


FRONIUS MIX™ CONCEPT

/ The cleverly-devised combination of several power modules means Fronius inverters always achieve maximum yield, even when in the partial-load range. This is all down to the unique Fronius Master Inverter X-Change system (MIX™), a development of the classic master/slave principle. How it works: all power modules are equal. The „master“ is allocated alternately, taking into account the operating hours worked. The result is that loads are applied evenly to individual power modules and the operating time decreases.

/ Maximum efficiency under partial load

With the MIX™ concept, several power modules share the work alternately. Depending on the irradiance level, individual power modules are switched on or off completely automatically. This optimises utilisation and ensures maximum yield at all times – even when it is raining, cloudy or at dawn and dusk.



/ The Fronius MIX™ concept: maximum efficiency even when in the partial-load range. The power modules are switched on and off depending on irradiance levels, thus always ensuring maximum yield.

/ Unrivalled stability

The redundant design means that even if a power module is faulty the inverter can continue to operate, ensuring yields are achieved. If a power module were to fail, the others would take over the work.

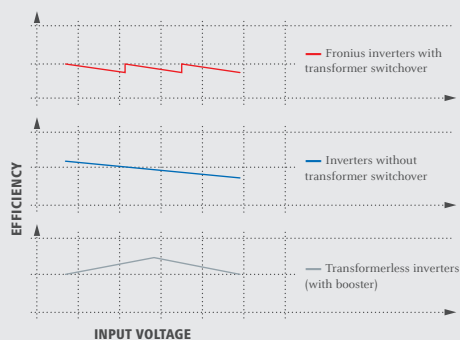
/ Longer service life

The control system uses the relevant operating hours that the power modules have worked to calculate automatically which power modules to switch on and off under partial load conditions. This ensures that the loads are distributed equally between the PC boards. The operating hours of the individual power modules are reduced, increasing the service life of the inverter.



HF TRANSFORMER SWITCHOVER

/ Fronius transformer inverters use a high-frequency (HF) transformer. The automatic transformer switchover facility produces three efficiency peaks. The result: a constant level of efficiency across the entire input voltage range, resulting in higher yields. Other advantages of HF transformer technology are the compact, lightweight design, a high level of efficiency and safety as a result of the electrical isolation.

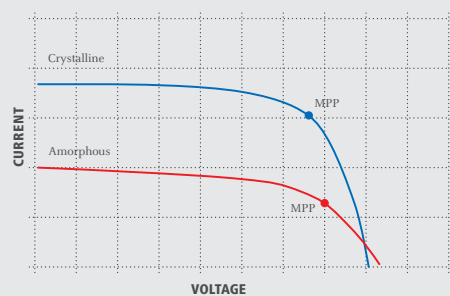


/ With the automatic transformer switchover facility, Fronius transformer inverters achieve consistently high efficiency across the entire input voltage range.



FRONIUS MODULE MANAGER

/ The Fronius Module Manager always locates the maximum power point (MPP), even in the case of the more demanding thin-layer modules. The Fronius Module Manager achieves an outstanding MPP adaptation efficiency of >99.9 % in total.



/ Amorphous (thin-layer) modules have flatter efficiency curves. Conventional MPP trackers therefore have some difficulty in locating the maximum power point (MPP). The intelligent Module Manager from Fronius always finds the exact MPP.



PC BOARD REPLACEMENT CONCEPT

/ The foundation of the unique PC board replacement concept is laid as we develop our inverters, as PC boards can only be replaced if the device has been designed accordingly. This enables our Fronius Service Partners to provide the fastest inverter servicing on the market.



MOUNTING SYSTEM

/ What is special about the design of our devices is the separation of the connection compartment and the power module compartment. Both are fitted separately. The connection compartment and all its cabling is fitted to the wall before the power module compartment is fitted. When servicing is required, the entire inverter does not have to be removed, just the power module compartment. All settings and configurations are thus retained.

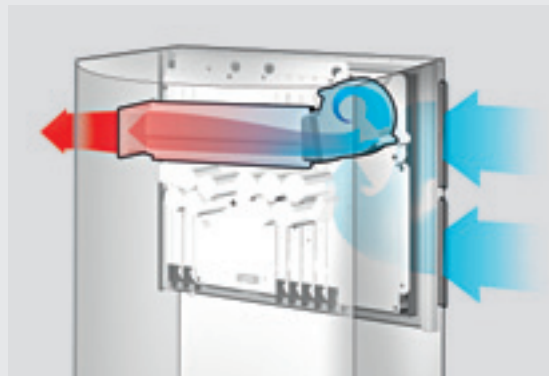


/ The fact that the connection compartment and power module compartment are separated means that all the inverter cabling remains on the wall whenever a PC board in a power module is replaced.



VENTILATION CONCEPT

/ With the Fronius ventilation concept, the air required for cooling is sucked in through a ventilator and fed over the cooling element through a hermetically sealed channel. This means that outside air never comes into contact with the power module PC board or any other sensitive electronic components. This increases operational safety and the service life of the inverter.



/ The hermetically sealed venting duct prevents the ingress of dust and moisture into the device.

STRING INVERTERS



/ Transformerless inverters
/ Fronius IG TL 3.0 / 3.6 / 4.0 / 4.6 / 5.0



/ Transformer inverters
/ Fronius IG 15 / 20 / 30
/ Fronius IG 40 / 50 / 60 HV



/ Transformer inverters
/ Fronius IG Plus 30 V-1 / 35 V-1 / 50 V-1
/ Fronius IG Plus 70 V-2 / 100 V-2
/ Fronius IG Plus 100 V-3 / 120 V-3 / 150 V-3

FRONIUS INVERTERS: AT THE HEART OF EVERY PV SYSTEM

/ Are you familiar with our highly functional grid-connected inverters that work with all standard solar modules? These efficient, reliable, high-power inverters form the essential core of every PV system. Innovative concepts, such as our unique connection concept, considerably simplify your work as an installer.



/ Central inverters
/ Fronius CL 36.0 / 48.0 / 60.0

CENTRAL INVERTERS

FRONIUS IG PLUS TRANSFORMER INVERTER

/ The allrounder with maximum yield.



FRONIUS IG PLUS
30 V-1 / 35 V-1 / 50 V-1

/ Powerful and compact: the three single-phase devices rated at 3 to 4 kW are suitable, for example, for PV systems in single-family homes.



FRONIUS IG PLUS
70 V-2 / 100 V-2

/ The big brother: the two-phase connection ensures a phase load unbalance of less than 4 kVA. Rated at 6.5 or 8 kW.



FRONIUS IG PLUS
100 V-3 / 120 V-3 / 150 V-3

/ Maximum power: three phases in a single device for PV systems right into the megawatt range – rated at 8, 10 and 12 kW.

FRONIUS IG PLUS 100 V-3
AVAILABLE FROM JULY 2011!



/ MIX™concept



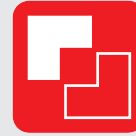
/ HF transformer switchover



/ Module Manager



/ PC board replacement concept



/ Mounting system



/ Ventilation concept

DEPENDABLE YIELD, RELIABLE AND COMPLETELY VERSATILE:

/ The Fronius IG Plus generation of inverters represents an evolution of the proven Fronius IG product family. Power categories from 3 to 12 kW promise suitability for every possible system size. With a maximum efficiency of 95.9%, the Fronius IG Plus range achieves one of the highest values for transformer inverters.

/ Compatible with practically all module configurations – and technologies:

Works perfectly with every type of module and is particularly suitable for thin-layer modules. The wide input voltage range, electrical isolation and standard integral earthing option means the inverter is extremely flexible in terms of system sizing and planning.

/ Sophisticated ventilation concept

The air required for cooling is sucked in through the side panel and fed over the cooling element through a sealed channel. Dust and moisture therefore never come into contact with the PC board and the inverter will operate reliably in the long term.



/ Involved in grid management:

The provision of reactive power, three-phase feed-in and dynamic grid backup means the inverters can be connected to the grid more easily and become actively involved in grid management.

/ Integrated string collection box with safety monitoring:

Simplifies installation. Up to six strings can be connected directly; if a fuse is faulty a message appears instantly on the display.

/ Power-Plug system

The connection and power module compartments are fitted separately. The Power-Plug connects both parts to create a fixed unit. During servicing, the connector remains on the wall – all settings and configurations are thus retained.



TECHNICAL DATA: FRONIUS IG PLUS

INPUT DATA	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
DC maximum power at $\cos \varphi = 1$	3,170 W	3,710 W	4,260 W	6,880 W	8,520 W
Max. input current ($I_{dc \max}$)	13.8 A	16.1 A	18.5 A	29.9 A	37.0 A
Min. input voltage ($U_{dc \min}$)	230 V				
Feed-in start voltage ($U_{dc \text{start}}$)	260 V				
Nominal input voltage ($U_{dc \text{r}}$)	370 V				
Max. input voltage ($U_{dc \max}$)	600 V				
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)	230 – 500 V				
Number of DC inputs	6				

OUTPUT DATA	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
AC nominal output ($P_{ac \text{r}}$)	3,000 W	3,500 W	4,000 W	6,500 W	8,000 W
Max. output power	3,000 VA	3,500 VA	4,000 VA	6,500 VA	8,000 VA
Max. output current ($I_{ac \max}$)	13.0 A	15.2 A	17.4 A	14.1 A (28.3 A) ¹⁾	17.4 A (34.8 A) ¹⁾
Grid connection ($U_{ac \text{r}}$)	1-NPE 230 V			2-NPE 400 V / 230 V (1-NPE 230 V) ¹⁾	
Min. output voltage ($U_{ac \min}$)	180 V				
Max. output voltage ($U_{ac \max}$)	270 V				
Frequency (f_{r})	50 Hz / 60 Hz				
Frequency range ($f_{\min} - f_{\max}$)	46 Hz – 65 Hz				
Distortion factor	< 3 %				
Power factor ($\cos \phi_{ac \text{r}}$)	0.85 – 1 ind. / cap.				

¹⁾ Single-phase (opt.)

GENERAL DATA	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
Dimensions (height x width x depth)	673 x 434 x 250 mm			968 x 434 x 250 mm	
Weight	23.8 kg			36.9 kg	
Degree of protection	IP 54 ²⁾				
Protection class	1				
Overvoltage category (DC / AC)	2 / 3				
Night-time consumption CL	< 1 W				
Inverter concept	HF transformer				
Cooling	Regulated air cooling				
Installation	Indoor and outdoor installation				
Ambient temperature range	from –20°C to +55°C				
Permitted humidity	0% to 95%				
DC connection technology	Screw terminal connection 1.5 mm ² – 16 mm ²				
AC connection technology	Screw terminal connection 2.5 mm ² – 35 mm ²				
Certificates and compliance with standards	DIN V VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712, EN 50438, G83, G59, C 10 / 11, CER 06-190, Guida per le connessioni alla rete elettrica di ENEL Distribuzione, AS 4777-1, AS 4777-2, AS 4777-3				

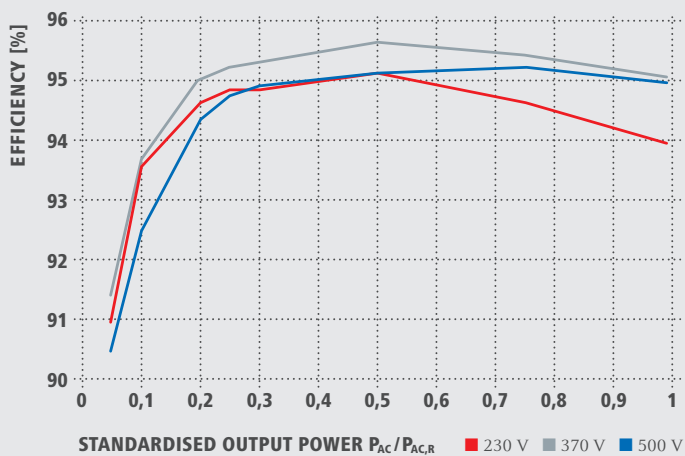
²⁾ Please refer to the information in the operating instructions regarding correct installation of the inverter.

EFFICIENCY	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
Max. efficiency	95.7 %	95.7 %	95.7 %	95.7 %	95.7 %
European efficiency (η_{EU})	94.8 %	95.0 %	95.0 %	95.1 %	95.2 %
η at 5% $P_{AC,r}^{(3)}$	87.9 / 87.6 / 87.2 %	88.2 / 88.1 / 87.4%	88.7 / 88.6 / 88.2 %	90.4 / 91.1 / 90.3 %	90.9 / 91.4 / 90.5 %
η at 10% $P_{AC,r}^{(3)}$	90.4 / 90.8 / 90.2 %	91.6 / 92.3 / 91.5 %	92.1 / 92.7 / 92.1 %	93.0 / 93.2 / 92.0 %	93.6 / 93.7 / 92.5 %
η at 20% $P_{AC,r}^{(3)}$	93.6 / 94.2 / 93.2 %	94.1 / 94.6 / 93.4 %	94.4 / 94.7 / 93.5 %	94.7 / 94.7 / 94.0 %	94.7 / 95.1 / 94.4 %
η at 25% $P_{AC,r}^{(3)}$	94.3 / 94.6 / 93.5 %	94.6 / 94.8 / 93.7 %	94.8 / 94.9 / 94.0 %	94.9 / 95.1 / 94.4 %	94.9 / 95.3 / 94.8 %
η at 30% $P_{AC,r}^{(3)}$	94.7 / 94.9 / 93.8 %	94.9 / 95.0 / 94.1 %	95.1 / 95.2 / 94.5 %	95.0 / 95.3 / 94.8 %	94.9 / 95.4 / 95.0 %
η at 50% $P_{AC,r}^{(3)}$	95.2 / 95.5 / 94.9 %	95.3 / 95.7 / 95.3 %	95.2 / 95.7 / 95.3 %	95.3 / 95.5 / 94.9 %	95.2 / 95.7 / 95.2 %
η at 75% $P_{AC,r}^{(3)}$	95.1 / 95.7 / 95.4 %	94.9 / 95.6 / 95.4 %	94.7 / 95.5 / 95.4 %	95.0 / 95.7 / 95.3 %	94.7 / 95.5 / 95.3 %
η at 100% $P_{AC,r}^{(3)}$	94.7 / 95.5 / 95.4 %	94.4 / 95.2 / 95.1 %	94.0 / 95.0 / 95.0 %	94.5 / 95.4 / 95.2 %	94.0 / 95.1 / 95.0 %
MPP adaptation efficiency	>99.9%				

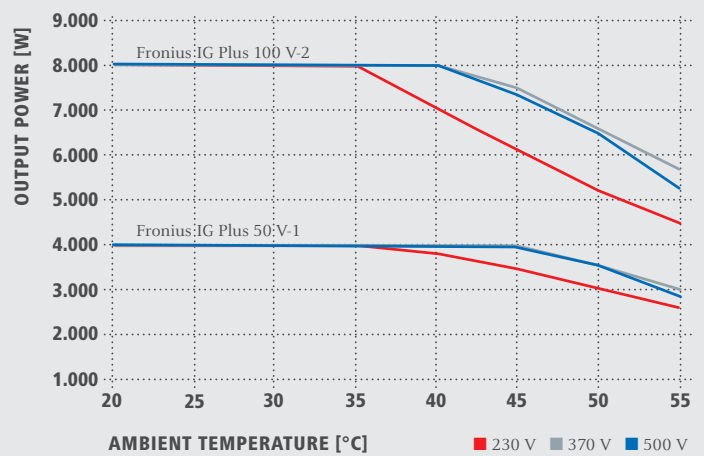
³⁾ and at $U_{mpp \min} / U_{dc,r} / U_{mpp \max}$

PROTECTIVE EQUIPMENT	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
DC insulation measurement	Warning/shutdown (depending on country setup) at $R_{ISO} < 500 \text{ kOhm}$				
Overload behaviour	Operating point shift, power limitation				
DC circuit breaker	Integrated				

FRONIUS IG PLUS 100 V-2 EFFICIENCY CURVE



FRONIUS IG PLUS V TEMPERATURE DERATING



TECHNICAL DATA: FRONIUS IG PLUS

INPUT DATA	100 V-3 ¹⁾	120 V-3	150 V-3
DC maximum power at $\cos \varphi = 1$	8,430 W	10,590 W	12,770 W
Max. input current ($I_{dc \max}$)	36.7 A	46.0 A	55.5 A
Min. input voltage ($U_{dc \min}$)		230 V	
Feed-in start voltage ($U_{dc \text{start}}$)		260 V	
Nominal input voltage ($U_{dc, n}$)		370 V	
Max. input voltage ($U_{dc \max}$)		600 V	
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)		230 – 500 V	
Number of DC inputs		6	

OUTPUT DATA	100 V-3 ¹⁾	120 V-3	150 V-3
AC nominal output ($P_{ac, n}$)	8,000 W	10,000 W	12,000 W
Max. output power	8,000 VA	10,000 VA	12,000 VA
Max. output current ($I_{ac \max}$)	11.6 A	14.5 A	17.4 A
Grid connection ($U_{ac, n}$)		3-NPE 400 V / 230 V	
Min. output voltage ($U_{ac \min}$)		180 V	
Max. output voltage ($U_{ac \max}$)		270 V	
Frequency (f_i)		50 Hz / 60 Hz	
Frequency range ($f_{\min} - f_{\max}$)		46 Hz – 65 Hz	
Distortion factor		< 3 %	
Power factor ($\cos \phi_{ac, n}$)		0.85 – 1 ind. / cap.	

GENERAL DATA	100 V-3 ¹⁾	120 V-3	150 V-3
Dimensions (height x width x depth)		1,263 x 434 x 250 mm	
Weight		49.2 kg	
Degree of protection		IP 54 ²⁾	
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		from -20°C to +55°C	
Permitted humidity		0% to 95%	
DC connection technology		Screw terminal connection 1.5 mm ² – 16 mm ²	
AC connection technology		Screw terminal connection 2.5 mm ² – 35 mm ²	
Certificates and compliance with standards		DIN V VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712, EN 50438, G83, G59, C 10 / 11, CER 06-190, Guida per le connessioni alla rete elettrica di ENEL Distribuzione, AS 4777-1, AS 4777-2, AS 4777-3	

¹⁾ Fronius IG Plus 100 V-3 devices may only be used in Europe (except Italy).

²⁾ Please refer to the information in the operating instructions regarding correct installation of the inverter.

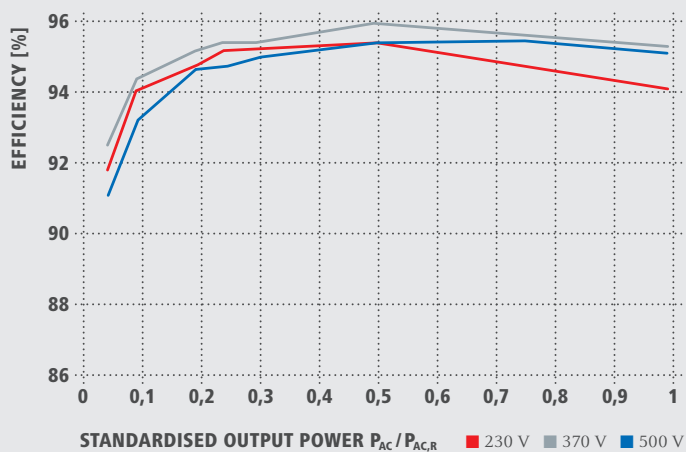
**FRONIUS IG PLUS 100 V-3
AVAILABLE FROM JULY 2011!**

EFFICIENCY	100 V-3 ¹⁾	120 V-3	150 V-3
Max. efficiency	95.9 %	95.9 %	95.9 %
European efficiency (η_{EU})	95.3 %	95.4 %	95.4 %
η at 5% $P_{AC,r}$ ³⁾	91.7 / 91.9 / 90.3 %	91.5 / 92.2 / 90.7 %	91.8 / 92.5 / 91.1 %
η at 10% $P_{AC,r}$ ³⁾	93.1 / 93.1 / 92.0 %	93.4 / 93.7 / 92.6 %	94.0 / 94.3 / 93.2 %
η at 20% $P_{AC,r}$ ³⁾	94.3 / 94.9 / 94.2 %	94.6 / 95.2 / 94.5 %	94.7 / 95.1 / 94.6 %
η at 25% $P_{AC,r}$ ³⁾	94.6 / 95.2 / 94.5 %	94.7 / 95.3 / 94.7 %	95.1 / 95.3 / 94.7 %
η at 30% $P_{AC,r}$ ³⁾	94.7 / 95.2 / 94.5 %	95.0 / 95.4 / 94.7 %	95.1 / 95.3 / 94.9 %
η at 50% $P_{AC,r}$ ³⁾	95.3 / 95.8 / 95.0 %	95.3 / 95.9 / 95.1 %	95.3 / 95.9 / 95.3 %
η at 75% $P_{AC,r}$ ³⁾	95.3 / 95.9 / 95.3 %	95.0 / 95.5 / 95.4 %	94.7 / 95.6 / 95.4 %
η at 100% $P_{AC,r}$ ³⁾	94.9 / 95.7 / 95.4 %	94.6 / 95.5 / 95.3 %	94.0 / 95.2 / 95.1 %
MPP adaptation efficiency		>99.9 %	

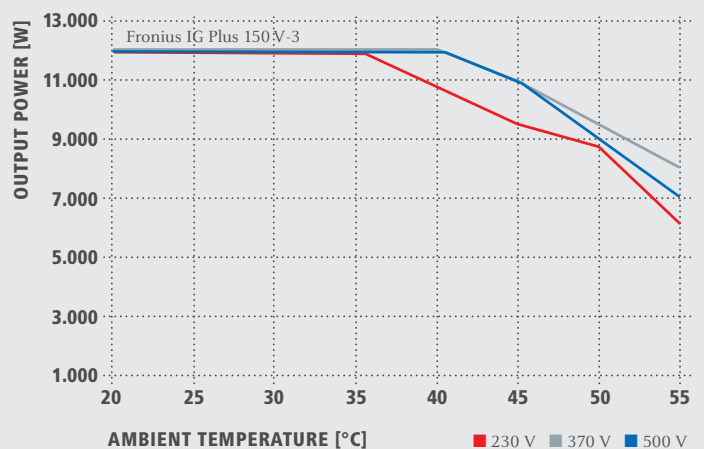
³⁾ and at $U_{mpp \min} / U_{dc,r} / U_{mpp \max}$

PROTECTIVE EQUIPMENT	100 V-3 ¹⁾	120 V-3	150 V-3
DC insulation measurement		Warning/shutdown (depending on country setup) at $R_{ISO} < 500 \text{ k}\Omega$	
Overload behaviour		Operating point shift, power limitation	
DC circuit breaker		Integrated	

FRONIUS IG PLUS 150 V-3 EFFICIENCY CURVE



FRONIUS IG PLUS V TEMPERATURE DERATING



FRONIUS IG TRANSFORMER INVERTER

/ The dependable PV inverter range.



FRONIUS IG 15 / 20 / 30

/ The compact inverters: the Fronius IG range is perfect for smaller systems, such as in single-family homes. The different inverter type can be combined as required. The processor control and HF transformer get the most out of all module types.

FRONIUS IG 40 / 50 / 60 HV

/ Work-sharing gives more yield: two power modules are combined in a single device. Depending on the level of irradiation, either one power module works or they both work together. Our innovative MIX™ concept makes this possible. The advantages include higher yield at partial loads and reduced operating hours.

FRONIUS IG OUTDOORS

/ The weather-resistant inverters: an Outdoor version of the Fronius IG inverter is also available for outdoor use. With their IP 45-tested external housing, the devices are protected against the ingress of solid foreign bodies and water jets.



/ MIX™concept



/ HF transformer
switchover



/ Module Manager



/ PC board replace-
ment concept

USER-FRIENDLY, HIGHLY FUNCTIONAL, RELIABLE:

/ With the Fronius IG product family, Fronius has launched a generation of inverters that is compatible with all solar modules. What makes them so appealing is their intuitive operation and ease of use, together with their highly informative analyses of system values for every situation. In short: a PV inverter that any system operator would welcome.

/ Informative inverter display:

User-friendly graphical display for meaningful visualisation of system data. Detailed status codes allow rapid, precise system analysis.



/ Quick and easy installation:

The low weight and compact dimensions ensure optimum ease of handling.

/ Flexible connection options for system monitoring:

The plug-in card system facilitates the installation of a comprehensive monitoring system. All Fronius DATCOM components can also then be connected to the inverter easily using the Plug & Play principle.

TECHNICAL DATA: FRONIUS IG

INPUT DATA	IG 15	IG 20	IG 30	IG 40	IG 50 ¹⁾	IG 60 HV
DC maximum power at $\cos \varphi = 1$	1,610 W	2,150 W	2,850 W	4,410 W	4,950 W	5,380 W
Max. input current ($I_{dc \max}$)	10.8 A	14.3 A	19.0 A	29.4 A	33.0 A	35.8 A
Min. input voltage ($U_{dc \min}$)	150 V					
Feed-in start voltage ($U_{dc \text{start}}$)	170 V					
Nominal input voltage ($U_{dc \text{r}}$)	280 V					
Max. input voltage ($U_{dc \max}$)	500 V				530 V	
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)	150 V – 400 V					
Number of DC inputs	5					

OUTPUT DATA	IG 15	IG 20	IG 30	IG 40	IG 50 ¹⁾	IG 60 HV
AC nominal output ($P_{ac \text{r}}$)	1,300 W	1,800 W	2,500 W	3,500 W	4,600 W	4,600 W
Max. output power	1,500 W	2,000 W	2,650 W	4,100 W	4,600 W	5,000 W
Max. output current ($I_{ac \max}$)	6.5 A	8.7 A	11.5 A	17.8 A	20.0 A	21.7 A
Grid connection ($U_{ac \text{r}}$)	1-NPE 230 V					
Min. output voltage ($U_{ac \min}$)	180 V					
Max. output voltage ($U_{ac \max}$)	270 V					
Frequency (f_r)	50 Hz / 60 Hz					
Frequency range ($f_{\min} - f_{\max}$)	47 Hz – 65 Hz					
Distortion factor	< 3 %					
Power factor ($\cos \phi_{ac \text{r}}$)	1					

GENERAL DATA	IG 15	IG 20	IG 30	IG 40	IG 50 ¹⁾	IG 60 HV
Dimensions (height x width x depth)	366 x 344 x 220 mm / 500 x 435 x 225 mm ²⁾			610 x 344 x 220 mm / 733 x 435 x 225 mm ²⁾		
Weight	9 kg / 12 kg ²⁾			16 kg / 20 kg ²⁾		
Degree of protection	IP 21 / IP 45 ²⁾					
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 ²⁾					
Ambient temperature range	from -20°C to +50°C					
Permitted humidity	0% to 95%					
DC connection technology	Screw terminal connection 1.5 – 10 mm ² ; DC plug optional ³⁾					
AC connection technology	Screw terminal connection 1.5 – 16 mm ²					
Certificates and compliance with standards	DIN V VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712, EN 50438, G83, G59, C 10 / 11, CER 06-190, Guida per le connessioni alla rete elettrica di ENEL Distribuzione, AS 4777-1, AS 4777-2, AS 4777-3					

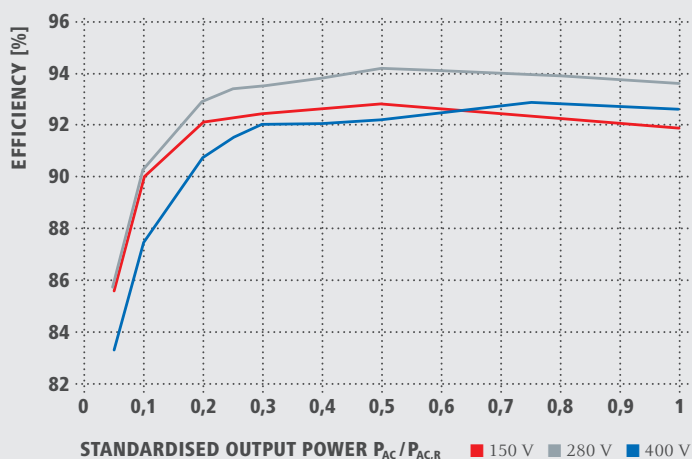
¹⁾ Fronius IG 50 devices may only be used in Germany.²⁾ This applies to Fronius IG Outdoor³⁾ MC3, MC4 or Tyco

EFFICIENCY	IG 15	IG 20	IG 30	IG 40	IG 50 ¹⁾	IG 60 HV
Max. efficiency	94.2 %	94.3 %	94.3 %	94.3 %	94.3 %	94.3 %
European efficiency (η_{EU})	91.4 %	92.3 %	92.9 %	93.2 %	93.5 %	93.5 %
η at 5% $P_{AC,R}$ ⁴⁾	75.0 / 76.9 / 71.1 %	77.4 / 80.6 / 71.1 %	81.6 / 83.1 / 81.4 %	82.7 / 83.3 / 80.2 %	85.6 / 85.8 / 83.3 %	85.6 / 85.8 / 83.3 %
η at 10% $P_{AC,R}$ ⁴⁾	81.6 / 83.1 / 81.4 %	84.9 / 86.2 / 83.4 %	87.4 / 88.6 / 85.9 %	88.5 / 89.3 / 85.0 %	90.0 / 90.3 / 87.5 %	90.0 / 90.3 / 87.5 %
η at 20% $P_{AC,R}$ ⁴⁾	87.8 / 89.2 / 85.9 %	89.7 / 90.5 / 87.3 %	91.2 / 91.8 / 89.1 %	91.5 / 92.3 / 89.6 %	92.2 / 93.0 / 90.8 %	92.2 / 93.0 / 90.8 %
η at 25% $P_{AC,R}$ ⁴⁾	89.3 / 89.9 / 86.8 %	90.8 / 91.3 / 88.5 %	91.8 / 92.7 / 90.2 %	92.1 / 92.9 / 90.6 %	92.4 / 93.5 / 91.6 %	92.4 / 93.5 / 91.6 %
η at 30% $P_{AC,R}$ ⁴⁾	90.1 / 90.7 / 87.9 %	91.5 / 92.3 / 89.8 %	92.3 / 93.2 / 90.9 %	92.4 / 93.3 / 91.1 %	92.5 / 93.6 / 92.1 %	92.5 / 93.6 / 92.1 %
η at 50% $P_{AC,R}$ ⁴⁾	92.0 / 92.9 / 90.3 %	92.6 / 93.7 / 91.4 %	92.8 / 94.0 / 92.4 %	92.7 / 93.9 / 91.5 %	92.9 / 94.3 / 92.3 %	92.9 / 94.3 / 92.3 %
η at 75% $P_{AC,R}$ ⁴⁾	92.7 / 93.8 / 91.7 %	92.8 / 94.3 / 92.6 %	92.4 / 94.3 / 92.8 %	92.9 / 94.1 / 92.6 %	92.5 / 94.1 / 92.9 %	92.5 / 94.1 / 92.9 %
η at 100% $P_{AC,R}$ ⁴⁾	92.8 / 94.2 / 92.5 %	92.4 / 94.0 / 92.9 %	92.0 / 93.4 / 92.6 %	92.5 / 94.3 / 92.9 %	92.0 / 93.7 / 92.7 %	92.0 / 93.7 / 92.7 %
MPP adaptation efficiency	>99.9%					

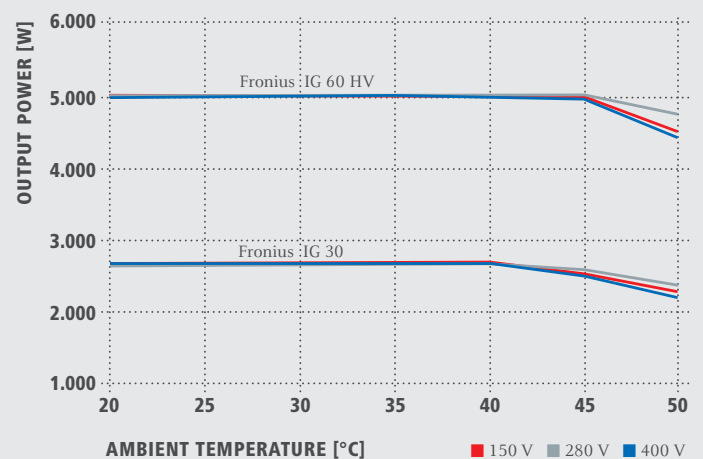
⁴⁾ and at $U_{mpp \min} / U_{dc,r} / U_{mpp \max}$

PROTECTIVE EQUIPMENT	IG 15	IG 20	IG 30	IG 40	IG 50 ¹⁾	IG 60 HV
DC insulation measurement	Warning/shutdown (depending on country setup) at $R_{ISO} < 500 \text{ k}\Omega$					
Overload behaviour	Operating point shift, power limitation					
Reverse polarity protection	Integrated					

FRONIUS IG 60 HV EFFICIENCY CURVE



FRONIUS IG TEMPERATURE DERATING



FRONIUS IG TL TRANSFORMERLESS INVERTER

/ Best in class with system monitoring as standard.



FRONIUS IG TL 3.0 / 3.6 / 4.0 / 4.6 / 5.0

/ Safety as standard: With the Status Manager, system monitoring is already integrated as standard in the Fronius IG TL. This means faults anywhere in the system are recorded instantly and PV system yields are locked in for longer. Unique: a standard USB stick ensures constant system monitoring and provides simple inverter updates.



/ Module Manager



/ PC board replacement concept



/ Mounting system



/ Ventilation concept

FUTURE-PROOF, DEPENDABLE YIELD AND CONVENIENT:

/ The Fronius IG TL combines all the benefits of a transformerless inverter with the high level of innovation and quality expected of Fronius. For systems ranging in size from those suitable for single-family homes to ones used on agricultural or commercial premises. Standard system monitoring makes it the most future-proof transformerless inverter on the market, and the one that will produce the most reliable yield.

/ String failure detection:

The inverter continuously compares the string currents of connected strings. This ensures early detection of faults anywhere in the system.

/ Integrated Solar Net interface:

Components for system monitoring (e.g. Fronius Datalogger) can be connected quickly and easily.

/ Convenient data exchange via USB:

A USB stick collects data during operation. System data can be transferred to a PC and evaluated and archived using the Fronius Solar.access software.

/ Heat and dust-free ventilation concept:

The Fronius IG TL device body is hermetically sealed. Only the cooling fins for electronic components are on the outside. These are cooled by a temperature-controlled ventilator, without the sucked-in air coming into contact with the inside of the device.



/ DATCOM slot:

This contains connection options for the USB stick, optional DATCOM components and direct alarm contact. More components can also be connected later.



/ Update via USB:

Download software updates directly from the Fronius homepage. Simply connect the USB stick to the inverter to start the updating functions via the inverter display.

/ Service-friendly mounting system:

The connection compartment and power module are fitted separately. During service visits, the connector remains on the wall and the DATCOM slot remains in situ.



TECHNICAL DATA: FRONIUS IG TL

INPUT DATA	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
DC maximum power at $\cos \varphi = 1$	3,130 W	3,840 W	4,190 W	4,820 W	5,250 W
Max. input current ($I_{dc \max}$)	8.8 A	10.8 A	11.8 A	13.5 A	14.7 A
Min. input voltage ($U_{dc \min}$)			350 V		
Feed-in start voltage ($U_{dc \text{start}}$)			350 V		
Nominal input voltage ($U_{dc,r}$)			350 V		
Max. input voltage ($U_{dc \max}$)			850 V		
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)			350 V – 700 V		
Number of DC inputs			6		

OUTPUT DATA	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
AC nominal output ($P_{ac,r}$)	3,000 W	3,680 W	4,000 W	4,600 W	4,600 W ¹⁾ / 5,000 W
Max. output power	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W
Max. output current ($I_{ac \max}$)	13.0 A	16.0 A	17.4 A	20.0 A	21.7 A
Grid connection ($U_{ac,r}$)			1-NPE 230 V		
Min. output voltage ($U_{ac \min}$)			180 V		
Max. output voltage ($U_{ac \max}$)			270 V		
Frequency (f_r)			50 Hz / 60 Hz		
Frequency range ($f_{\min} - f_{\max}$)			46 Hz – 65 Hz		
Distortion factor (50 Hz / 60 Hz)			< 3% / < 3,5%		
Power factor ($\cos \phi_{ac,r}$)			1		

¹⁾ Fronius IG TL 5.0 devices destined for Germany, Austria, Belgium and the Czech Republic have an AC nominal output of 4,600 W.

GENERAL DATA	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
Dimensions (height x width x depth)			597 x 413 x 195 mm		
Weight			19.1 kg		
Degree of protection			IP 55 ²⁾		
Protection class			1		
Overvoltage category (DC / AC)			2 / 3		
Night-time consumption			< 1 W		
Inverter concept			Transformerless		
Cooling			Regulated air cooling		
Installation			Indoor and outdoor installation		
Ambient temperature range			from -20°C to +55°C		
Permitted humidity			0% to 95%		
DC connection technology			Screw terminal connection 2.5 mm ² – 16 mm ²		
AC connection technology			Screw terminal connection 2.5 mm ² – 16 mm ²		
Certificates and compliance with standards			DIN V VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712, EN 50438, G83, G59, C 10 / 11, CER 06-190, Guida per le connessioni alla rete elettrica di ENEL Distribuzione, AS 4777-1, AS 4777-2, AS 4777-3		

²⁾ Please refer to the information in the operating instructions regarding correct installation of the inverter.

EFFICIENCY	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
Max. efficiency	97.7 %	97.7 %	97.7 %	97.7 %	97.7 %
European efficiency (η_{EU})	97.1 %	97.2 %	97.3 %	97.3 %	97.3 %
η at 5% $P_{AC,R}^{3)}$	92.1 / 87.8 %	92.6 / 88.3 %	92.9 / 88.6 %	93.1 / 89.1 %	93.4 / 89.4 %
η at 10% $P_{AC,R}^{3)}$	94.2 / 90.2 %	95.3 / 91.2 %	95.7 / 91.8 %	96.0 / 92.6 %	96.1 / 92.9 %
η at 20% $P_{AC,R}^{3)}$	96.6 / 93.6 %	96.9 / 94.2 %	97.2 / 94.5 %	97.3 / 94.8 %	97.4 / 94.9 %
η at 25% $P_{AC,R}^{3)}$	97.0 / 94.3 %	97.2 / 94.7 %	97.4 / 94.9 %	97.5 / 95.2 %	97.6 / 95.3 %
η at 30% $P_{AC,R}^{3)}$	97.3 / 94.7 %	97.4 / 95.1 %	97.5 / 95.2 %	97.6 / 95.4 %	97.6 / 95.5 %
η at 50% $P_{AC,R}^{3)}$	97.6 / 95.5 %	97.6 / 95.7 %	97.7 / 95.7 %	97.7 / 95.8 %	97.7 / 95.8 %
η at 75% $P_{AC,R}^{3)}$	97.6 / 95.8 %	97.6 / 95.8 %	97.5 / 95.7 %	97.4 / 95.7 %	97.4 / 95.6 %
η at 100% $P_{AC,R}^{3)}$	97.5 / 95.7 %	97.4 / 95.6 %	97.3 / 95.5 %	97.2 / 95.4 %	97.0 / 95.2 %
MPP adaptation efficiency	> 99.9 %				

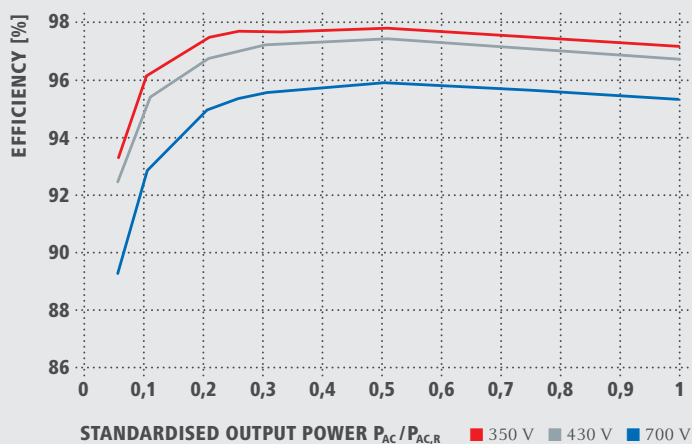
³⁾ and at $U_{mpp \min}$ / $U_{mpp \max}$

PROTECTIVE EQUIPMENT	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
DC insulation measurement	Universal current-sensitive fault monitoring				
Overload behaviour	Operating point shift, power limitation				
DC circuit breaker	Integrated				

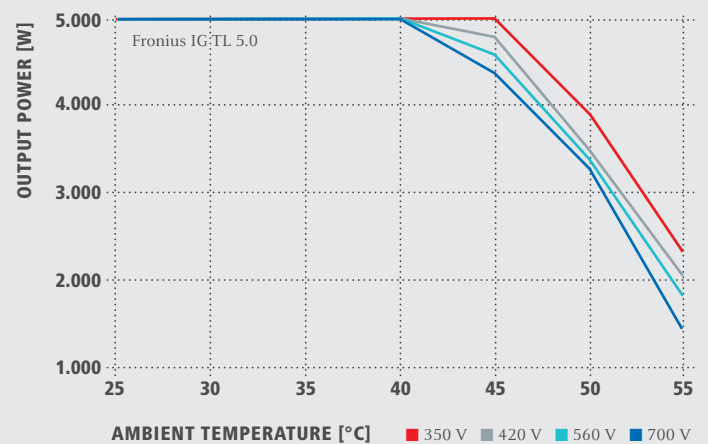
INTERFACES	IG TL 3.0	IG TL 3.6	IG TL 4.0	IG TL 4.6	IG TL 5.0
USB A socket	For USB sticks ⁴⁾ with max. dimensions of 80 x 33 x 20 mm (l x w x h)				
Signalling output	2-pin screw terminal, 12 V max. 300 mA				
Two RJ45 sockets (RS485)	Solar Net interface, interface protocol				

⁴⁾Please refer to the information in the operating instructions regarding the use of USB sticks (temperature range).

FRONIUS IG TL 5.0 EFFICIENCY CURVE



FRONIUS IG TL TEMPERATURE DERATING



FRONIUS CL CENTRAL INVERTER

/ The central inverter for long-term peak performance.



FRONIUS CL 36.0 / 48.0 / 60.0

/ A real powerhouse: 9, 12 or 15 power modules work together in the Fronius CL to achieve very high performance. The control system calculates which and how many power racks to switch on or off in partial load situations. This ensures that the workload is distributed equally between the PC boards, reducing operating hours for individual power modules and increasing the service life of the inverter.



/ MIX™ concept



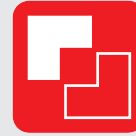
/ HF transformer switchover



/ Module Manager



/ PC board replacement concept



/ Mounting system



/ Ventilation concept

MAXIMUM YIELD, UNRIVALLED SYSTEM STABILITY, LONG SERVICE LIFE:

/ The Fronius CL combines efficient power electronics with a unique modular design of up to 15 identical power modules in the MIX™ concept. This makes the Fronius CL the perfect central inverter for PV systems of up to several hundred kilowatts. Other advantages: precise maximum power point tracking of the Module Manager, automatic transformer switchover, and much more.

/ Prompt servicing options:

During servicing, power modules can easily be pulled out and replaced like drawers on the Plug & Play principle.



/ Integrated earthing option:

When earthing modules, whether positive or negative, simply insert the fuse into the fuse holder and activate the software.

/ Low installation weight:

The power racks can be removed for installation. This reduces the weight, making it easier to move the housing. Re-insert the racks later – all done!

/ On-board interface card function:

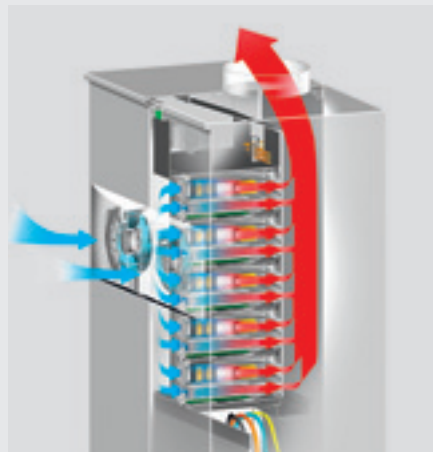
Reading system data in the open data protocol means there is no problem in using third-party components for system monitoring.

/ Built-in Signal Card function:

Practical alarm contacts mean, for example, that status changes on the system can be signalled via visual or audible signals, or that additional components such as an external fan can be controlled.

/ Intelligent cooling:

For cooling, air is sucked in through the front of the device and pressed through the individual power racks via a sealed channel. Within the hermetically sealed power modules, a small ventilator ensures uniform air conditioning.



TECHNICAL DATA: FRONIUS CL

INPUT DATA	CL 36.0	CL 48.0	CL 60.0
DC maximum power at $\cos \varphi = 1$	38.6 kW	51.4 kW	64.4 kW
Max. input current ($I_{dc \max}$)	167.8 A	223.4 A	280.2 A
Min. input voltage ($U_{dc \min}$)		230 V	
Feed-in start voltage ($U_{dc \text{start}}$)		260 V	
Nominal input voltage ($U_{dc,r}$)		370 V	
Max. input voltage ($U_{dc \max}$)		600 V	
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)		230 V – 500 V	
Number of DC inputs		3	

OUTPUT DATA	CL 36.0	CL 48.0	CL 60.0
AC nominal output ($P_{ac,r}$)	36 kW	48 kW	60 kW
Max. output power	36 kVA	48 kVA	60 kVA
Max. output current ($I_{ac \max}$)	52.2 A	69.6 A	87.0 A
Grid connection ($U_{ac,r}$)		3-NPE 400 V / 230 V	
Min. output voltage ($U_{ac \min}$)		180 V	
Max. output voltage ($U_{ac \max}$)		270 V	
Frequency (f_r)		50 Hz / 60 Hz	
Frequency range ($f_{\min} - f_{\max}$)		46 Hz – 65 Hz	
Distortion factor		< 3 %	
Power factor ($\cos \phi_{ac,r}$)		0.85 – 1 ind. / cap.	

GENERAL DATA	CL 36.0	CL 48.0	CL 60.0
Dimensions (height x width x depth)		1,830 x 1,105 x 722 mm	
Weight	248 kg	276 kg	303 kg
Degree of protection		IP 20	
Protection class		1	
Overvoltage category (DC / AC)		2 / 3	
Night-time consumption	11.4 W	11.6 W	12.2 W
Inverter concept		HF transformer	
Cooling		Regulated air cooling	
Installation		Indoor installation	
Ambient temperature range		from –20°C to +50°C	
Permitted humidity		0 % to 95 %	
DC connection technology		Bolt M10	
AC connection technology		Bolt M10	
Certificates and compliance with standards	VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712, G 59, CER 06-190, Guida per le connessioni alla rete elettrica di ENEL Distribuzione		

EFFICIENCY	CL 36.0	CL 48.0	CL 60.0
Max. efficiency	95.9 %	95.9 %	95.9 %
European efficiency (η_{EU})	95.3 %	95.4 %	95.5 %
η at 5% $P_{AC,R}^{(1)}$	89.6 / 90.8 / 91.4 %	90.5 / 90.9 / 91.7 %	91.1 / 93.7 / 91.4 %
η at 10% $P_{AC,R}^{(1)}$	93.3 / 94.4 / 94.1 %	93.9 / 94.7 / 94.1 %	93.5 / 95.2 / 93.9 %
η at 20% $P_{AC,R}^{(1)}$	94.4 / 95.3 / 95.0 %	94.7 / 95.5 / 94.8 %	94.6 / 95.7 / 94.8 %
η at 25% $P_{AC,R}^{(1)}$	94.8 / 95.5 / 95.1 %	95.0 / 95.7 / 95.2 %	94.9 / 95.7 / 94.9 %
η at 30% $P_{AC,R}^{(1)}$	95.0 / 95.7 / 95.1 %	95.1 / 95.7 / 95.3 %	94.9 / 95.8 / 95.0 %
η at 50% $P_{AC,R}^{(1)}$	95.1 / 95.9 / 95.3 %	95.2 / 95.9 / 95.4 %	95.1 / 95.9 / 95.2 %
η at 75% $P_{AC,R}^{(1)}$	94.4 / 95.4 / 95.3 %	94.4 / 95.5 / 95.3 %	94.5 / 95.5 / 95.3 %
η at 100% $P_{AC,R}^{(1)}$	93.3 / 94.8 / 94.9 %	93.4 / 94.8 / 94.8 %	93.4 / 94.8 / 94.8 %
MPP adaptation efficiency		> 99.9 %	

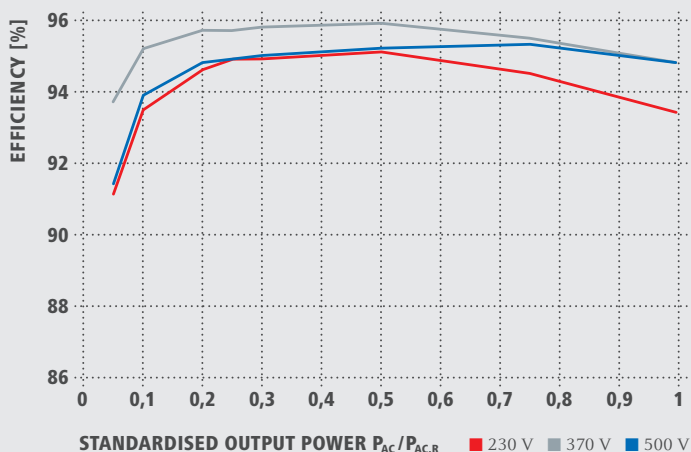
¹⁾ and at $U_{mpp \min} / U_{dc,r} / U_{mpp \max}$

PROTECTIVE EQUIPMENT	CL 36.0	CL 48.0	CL 60.0
DC insulation measurement	Warning/shutdown (depending on country setup) at $R_{iso} < 500 \text{ kOhm}$		
Overload behaviour	Operating point shift, power limitation		
DC circuit breaker	Integrated		

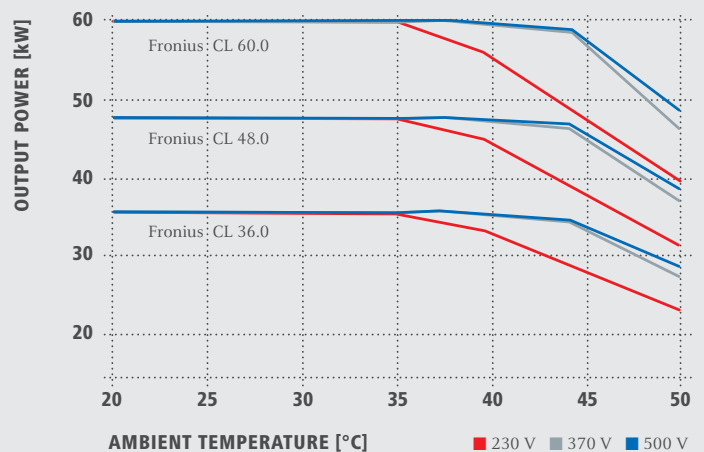
INTERFACES	CL 36.0	CL 48.0	CL 60.0
Two RJ45 sockets (RS485)	Solar Net interface, interface protocol		

SPECIAL FEATURES	CL 36.0	CL 48.0	CL 60.0
Feed-in from	80 W	95 W	120 W
Fronius CL devices for Germany are only supplied with a manual AC disconnecter.			

FRONIUS CL 60.0 EFFICIENCY CURVE



FRONIUS CL TEMPERATURE DERATING



ACCESSORIES FOR INVERTERS

/ Our accessories complement all PV systems, simplify installation and ensure that the system meets the required safety standards.

FRONIUS STRING CONTROL 100/12

/ Professional string control of up to 12 module strings

The Fronius String Control 100/12 can be used for comprehensive monitoring and recording of up to 12 module strings at a current carrying capacity of 100 A max. Continuous comparison of string currents reliably detects even the smallest errors in the entire system. **Area of application:** for Fronius IG Plus inverters.



TECHNICAL DATA	
Max. number of strings	12
Max. input current	100 A
Max. input current per string	20 A
Max. input voltage	600 V
Connections (DC in)	Terminals, 1.5 mm ² – 10 mm ² (with max. cable diameter of 7 mm)
Connections (DC out)	M12 cable lug, max. 95 mm ²
Connections Fronius DATCOM	Two RJ 45 or terminals
Environmental conditions	-25°C to +60°C
Degree of protection	IP 55
Power supply	12 V DC (optional)
Size (height x width x depth)	440 x 330 x 130 mm
Weight	5 kg

FRONIUS STRING CONTROL 250/25

/ Professional string control of up to 25 module strings

The Fronius String Control 250/25 can be used for comprehensive monitoring and recording of up to 25 module strings at a current carrying capacity of 250 A max. Continuous comparison of string currents reliably detects even the smallest errors in the entire system. **Area of application:** highly suitable for use in combination with Fronius central inverters.



TECHNICAL DATA	
Max. number of strings	25
Max. input current	250 A
Max. input current per string	20 A
Max. input voltage	600 V
Connections (DC in)	Terminals, 2.5 mm ² – 10 mm ² (with max. cable diameter of 7 mm)
Connections (DC out)	M12 cable lug, max. 120 mm ²
Connections Fronius DATCOM	Two RJ 45 or terminals
Environmental conditions	-25°C to +60°C
Degree of protection	IP 55
Power supply	12 V DC (optional)
Size (height x width x depth) incl. wall bracket	680 x 500 x 170 mm
Weight	10 kg



FRONIUS STRING CONTROL 250/25 DCD DF

/ Continuous string monitoring and all-pole fuse protection of up to 25 module strings

The Fronius String Control 250/25 DCD DF can be used for comprehensive monitoring and recording of up to 25 module strings at a current carrying capacity of 250 A max.

Area of application: suitable for combination with Fronius central inverters.

TECHNICAL DATA	
Max. number of strings	25
Max. input current	250 A
Max. input current per string	20 A
Max. input voltage	600 V
Connections (DC in)	Terminals, 2.5 mm ² – 10 mm ² (with max. cable diameter of 7 mm)
Connections (DC out)	M12 cable lug, max. 120 mm ²
Connections Fronius DATCOM	Two RJ 45 or terminals
Environmental conditions	–25°C to +55 °C
Degree of protection	IP 55
Power supply	12 V DC (optional)
Size (height x width x depth) incl. wall bracket	822 x 571 x 216 mm
Weight	18.4 kg

FRONIUS DC BOX 60/12

/ String collection box for up to 12 module strings

The Fronius DC Box 60/12 can store up to 12 module strings with a total current of up to 60 A max. It can connect a DIN rail-mounted overvoltage protector (type 2 or type 1).

Area of application: specifically for all three-phase Fronius IG Plus devices. Can also be used with other Fronius inverters.



TECHNICAL DATA	
Max. number of strings	12
Max. input current	60 A
Max. input current per string	20 A
Max. input voltage	850 V
Connections (DC in)	Terminals, 2.5 mm ² – 6 mm ² (with max. cable diameter of 10 mm)
Connections (DC out)	M10 cable lug, max. 95 mm ²
Environmental conditions	–25°C to +55 °C
Degree of protection	IP 65
Size (height x width x depth)	300 x 400 x 132 mm
Weight	3.8 kg



FRONIUS IG 15/20/30 DC ISOLATION BOX

/ String collection box for up to 4 module strings with DC isolator

The Fronius IG 15/20/30 DC isolation box can record up to 4 module strings. The integrated DC isolator allows both DC main line poles to be connected whilst de-energised during service.

Area of application: particularly suitable for use with the Fronius IG 15/20/30.

TECHNICAL DATA	
Max. number of strings	4
Max. input current	400 V DC 7 A* 150 V DC 20 A*
Max. input voltage	530 V
Connections (DC in)	Terminals, 2.5 mm ² – 6 mm ² (with max. cable diameter of 10 mm)
Connections (DC out)	Terminals, 2.5 mm ² – 16 mm ²
Environmental conditions	–25°C to +55 °C
Degree of protection	IP 54
Size (height x width x depth)	220 x 168 x 112.5 mm
Weight	1.4 kg

* To determine input current by linear interpolation.



FRONIUS IG 40/60 HV DC ISOLATION BOX

/ String collection box for up to 8 module strings with DC isolator

The Fronius IG 40/60 HV DC isolation box can store up to eight module strings. The integrated DC isolator allows both DC main line poles to be connected whilst de-energised during service.

Area of application: particularly suitable for use with the Fronius IG 40, Fronius IG 50 and Fronius IG 60 HV.

TECHNICAL DATA	
Max. number of strings	8
Max. input current at*	400 V DC 14 A* 150 V DC 37 A*
Max. input voltage	530 V
Connections (DC in)	Terminals, 2.5 mm ² – 6 mm ² (with max. cable diameter of 10 mm)
Connections (DC out)	Terminals, 2.5 mm ² – 25 mm ²
Environmental conditions	–25°C to +50 °C
Degree of protection	IP 54
Dimensions (height x width x depth)	270 x 225 x 125 mm
Weight	2 kg

* To determine input current by linear interpolation.



ISOLATION TRANSFORMER 50 HZ

/ Isolation transformer for electrical isolation

Photovoltaic systems with a peak output of more than 20 kW must be fitted with additional electrical isolation using a 50 Hz transformer, in accordance with Italian regulations (the ENEL standard).

Area of application: entire inverter range Fronius CL 36.0 / 48.0 / 60.0.

TECHNICAL DATA	
Frequency	50/60 Hz
Nominal output	60 kVA
Maximum output	61 kVA
Operating mode	S1
Cooling	AN
Degree of protection	IP 23
Efficiency	97.8 %
Max. efficiency	97.8 %
Primary voltage	400 V
Secondary voltage	400 V +/- 5 %
Switch-on	Dyn5
Primary current	89.1 A
Max. primary current	90 A
Dimensions	1,050 x 700 x 760 mm
Weight	520 kg

FRONIUS UPDATE PACKAGE

/ For uncomplicated firmware updates

The Fronius Update Package makes Fronius inverter firmware updates easy. It includes the Fronius Com Card, Fronius Converter USB and connecting cable.

Area of application: suitable for all Fronius inverters.



TECHNICAL DATA		
Fronius Converter USB		
Degree of protection	IP 20	
Temperature range	0 °C to +40 °C	
Humidity	0% to 95%, non-condensing	
plug	1 x RJ 45 plug (permanently integrated terminating plug) 1 x USB connector (can be connected directly to PC)	
Dimensions	85 x 24 x 20 mm	
Fronius Com Card		
Supply voltage	208 V / 220 V / 230 V / 240 V / 277 V (+10 % / -15 %)	
Dimensions	140 x 100 x 28 mm	
Interfaces	Socket	Designation
RS422	RJ45	»IN«
RS422	RJ45	»OUT«

EXTENDED WARRANTIES FOR FRONIUS INVERTERS

/ Fronius offers a 5-year manufacturer warranty on all inverters as standard. You also have the option of extending the warranty period to 10, 15 or 20 years. If a claim is made, Fronius bears the costs for original replacement parts, transportation and work undertaken. The extended warranty therefore protects against any fluctuations in price for the entire warranty period. In addition, free support is on hand from our competent and easy to reach hotline team for the entire duration of the warranty period.

OTHER ADVANTAGES OF THE EXTENDED WARRANTY:

/ Simple

Claims are handled directly by the installation engineer and Fronius. There is no insurance policy between these two parties and no advance payments are necessary. There is a one-off premium payment.

/ Transparent

The extended warranty is assigned to the device with a unique serial number and an individual warranty certificate with all the relevant details is issued. The warranty automatically covers original replacement parts and replacement devices.

/ Flexible

The length of the warranty period can be adapted to suit individual requirements: extended warranties for 10, 15 or 20 years are possible.



**TRANSFORMER INVERTERS
FRONIUS IG**

	Total period	10 years	15 years	20 years
Fronius IG 15 / 20 / 30	Item number	41,200,107	41,200,126	41,200,130
Fronius IG 40 / 50 / 60 HV	Item number	41,200,108	41,200,127	41,200,131



**TRANSFORMER INVERTERS
FRONIUS IG PLUS**

	Total period	10 years	15 years	20 years
Fronius IG Plus 30 V-1 / 35 V-1 / 50 V-1	Item number	41,200,107	41,200,126	41,200,130
Fronius IG Plus 70 V-2 / 100 V-2	Item number	41,200,108	41,200,127	41,200,131
Fronius IG Plus 100 V-3 / 120 V-3 / 150 V-3	Item number	41,200,112	41,200,128	41,200,132



**TRANSFORMERLESS INVERTERS
FRONIUS IG TL**

	Total period	10 years	15 years	20 years
Fronius IG TL 3.0 / 3.6 / 4.0 / 4.6 / 5.0	Item number	41,200,107	41,200,126	41,200,130



**CENTRAL INVERTERS
FRONIUS CL**

	Total period	10 years	20 years
Fronius CL 36.0 / 48.0 / 60.0	Item number	41,200,120	41,200,121

You can apply for an extended warranty for Fronius inverters up to 6 months after the installation date.

You can find detailed information about the terms of warranty at:
WWW.FRONIUS.COM/SOLARELECTRONICS/TERMSOFWARRANTY

SYSTEM MONITORING: A CONSTANT EYE ON FUNCTION AND YIELD.

/ The Fronius DATCOM is the solution for recording, processing and storing system data. It is very user-friendly: hardware components can be installed quickly and easily and the software is intuitive in operation. Modular design means that the Fronius DATCOM can be upgraded at any time – for monitoring solutions for basic equipment right through to total remote system control. Only complete system monitoring can guarantee problem-free function of any PV system.



DATA LOGGING

/ Function and yield controls: recording and storing of a PV system



OPEN INTERFACES

Process data easily: integrate third-party components without any problems.

ADDITIONAL COMPONENTS

/ PV system basics and add-ons.

VISUALISATION

/ Hardware and software for the acquisition, analysis and visualisation of system data.



FRONIUS DATCOM

/ The complete solution for data: recording, processing, storing, displaying and analysing.

SENSORS

/ Reliable measurement of additional values: irradiation, ambient temperature, wind speed, and much more.

DATA LOGGING: THE INTERFACE BETWEEN INVERTER AND PC

/ In order to control the function and yield of a PV system, data must be recorded and stored. The datalogger acts as the interface between the inverter and the PC. It records system data and prepares it for processing using the Fronius Solar.access software. The datalogger can also be used for remote monitoring.



FRONIUS DATALOGGER WEB

/ Datalogger with WLAN functionality

All-rounder: the Fronius Datalogger can easily be integrated into existing networks via the Ethernet interface. This is also possible using an optional WLAN stick. Up-to-date information from systems with up to 100 inverters can be read in real time. In order to use these components, a Fronius Com Card must be installed.

TECHNICAL DATA	
Storage capacity	16 MB / max. 4,096 days
Supply voltage	12 V DC
Power consumption	Type 1.43 W
Degree of protection	IP 20
Dimensions	190 x 114 x 53 mm
INTERFACES	
Relay output	42 V AC / 6 A 60 V DC / 400 mA 40 V DC / 1 A 30 V DC / 6 A 0.8 – 1.5 mm ² cable cross-section
External supply, terminal	12 V DC / max. 1 A, Class 2 0.13 – 1.5 mm ² cable cross-section
RS 422 (Fronius Solar Net)	RJ 45
Ethernet LAN	RJ 45, 100 MBit
WLAN	via USB WLAN stick*

*optional

/ Accessories for the Fronius Datalogger Web: WLAN sticks

For integrating the Fronius Datalogger Web into existing networks. The WLAN stick is configured using the Fronius Datalogger Web website. WLAN sticks are available for indoor and outdoor use.



FRONIUS DATALOGGER EASY/PRO (CARD/BOX)

/ The introduction to data logging

The Fronius Datalogger easy is suitable for single inverter systems. The Datalogger pro is used for multi-inverter systems. Both can be connected to the inverter easily using the Plug & Play principle and are available in card or box form. In order to use these components, a Fronius Com Card must be installed.



TECHNICAL DATA			
Storage capacity		540 KB	
Storage time (1 Fronius IG or Fronius IG Plus, memory cycle 30 min)		approx. 1,000 days	
Supply voltage		12 V DC	
Power consumption – with the Fronius Wireless Transceiver Box		max. 0.6 W	
Box degree of protection		IP 20	
Dimensions (length x width x height) – Fronius Datalogger Card – Fronius Datalogger Box		140 x 100 x 26 mm 190 x 115 x 53 mm	
Interfaces Fronius Datalogger Card – USB – RS 232 – RS 232	Socket: USB 9-pin submin 9-pin submin		Designation: »USB« »PC« »Modem«
Interfaces Fronius Datalogger Box – USB – RS 232 – RS 232 – RS 422 – RS 422	USB 9-pin submin 9-pin submin RJ 45 RJ 45		»USB« »PC« »Modem« »IN« »OUT«

/ Fronius Datalogger easy/pro (card/box) accessories

/ Fronius Wireless Transceiver (card/box)

For the straightforward transfer of system data from inverter to PC via a wireless connection.

/ US Robotics Courier V.Everything 56 k

Using this analog modem ensures a secure and uninterrupted connection. The external modem is connected to the Fronius Datalogger using an RS 232 connection.

/ Cinterion TC35i Terminal

The industrial RS 232 standard interface is the perfect dual band GSM terminal for use with Fronius Dataloggers.



VISUALISATION: DISPLAYING, ANALYSING AND ARCHIVING PV SYSTEM DATA

/ From information conveyed simply through an audiovisual signal to remote monitoring via the Internet, Fronius can provide the right solution for any type of monitoring system. Visualisation options range from displays for private or public applications to the detailed presentation of system data on the PC or via the online Fronius Solar.web platform.



**FRONIUS PERSONAL DISPLAY DL
AVAILABLE FROM SEPTEMBER 2011**

FRONIUS PERSONAL DISPLAY DL

/ Read system data easily, from anywhere

The Fronius Personal Display DL delivers PV system performance data. It is easy to install in any room in the building, from where it continuously provides the latest data – for up to 15 inverters. Data transfer from the inverter to the display is via a wireless connection. That is why it is so easy to install: no tuning, no cable pulling – just Plug & Play!

TECHNICAL DATA

Frequency band	868 MHz; 915 MHz (USA)
Display	White backlight
Power supply (battery)	2 x 1.5 V RAM cells
Temperature range	0°C to +50°C
Degree of protection	IP 20
Dimensions (length x width x height)	190.2 x 113.8 x 52.8 mm

/ Fronius Personal Display DL accessories: Fronius Personal Display Card

Transfers data wirelessly to the Fronius Personal Display DL by inserting the card into the inverter. The accompanying antenna can be fitted either directly to the inverter or close to it.

/ Fronius Personal Display DL accessories: Fronius Personal Display DL Box

Transfers data wirelessly between the Personal Display DL and the inverter. The Fronius Personal Display DL Box has a cache memory, which retains system data, even if the wireless connection is terminated.



FRONIUS PUBLIC DISPLAY

/ Presenting system data effectively in public

A large-scale display for detailed visualisation of key PV system data. It can be fitted easily inside or to the outside of public buildings. System values for up to 100 inverters can be displayed. In order to use these components, a Fronius Com Card must be installed.

TECHNICAL DATA		
Storage temperature	-20°C to +70°C	
Operating temperature	-20°C to +50°C	
Supply voltage	12 V (via Fronius Solar Net)	
Max. current input	150 mA	
Max. energy consumption	1.8 W	
Display	Two lines of eight characters (alphanumeric)	
Reference	38 segment LCD	
Character height	50 mm	
Interfaces	Socket:	Designation:
- RS 422	RJ 45	»IN«
- RS 422	RJ 45	»OUT«
Degree of protection	IP 65	
Marks of conformity	CE	
Dimensions (length x width x height)	650 x 450 x 50 mm	
Weight	6 kg	

/ Fronius Public Display accessories: Fronius Public Display card/box

With the Fronius Public Display card/box interface, large-scale displays from other manufacturers can also be used to visualise PV system data.



FRONIUS SOLAR.ACCESS

/ Software for configuring PV systems and evaluating system data

Intelligent software for recording, storing and evaluating system data on the PC. System performance is displayed through clearly laid-out diagrams and graphics. Fronius Solar.access is available free of charge.



FRONIUS SOLAR.WEB INCL. SMARTPHONE APP

/ The free online portal for remote monitoring of systems

It enables PV systems to be monitored, analysed and compared quickly and easily from any PC connected to the Internet. Up-to-date system data can be accessed at any time and presented in a meaningful way: it is very user-friendly and easy to operate, and a comprehensive range of analysis tools is included. For smartphones, a 'Light version' is available from Fronius Solar.web.



FRONIUS SIGNAL CARD

/ Integrate warning elements easily

If there are any status changes on the inverter, the Fronius Signal Card emits an audiovisual signal, either by sounding an alarm or via a warning light. If the inverter indicates a fault, a potential-free contact is switched on and a warning signal sounds.

TECHNICAL DATA	
Supply voltage	5 V DC (through solar modules)
Dimensions (length x width x height)	140 x 100 x 26 mm
Maximum relay switching characteristics	
- U (DC)	50 V
- I (DC)	1 A
- U (AC)	250 V
- I (AC)	4 A
Maximum cable cross-section	1.5 mm ² / cable
Recommended connecting cable	3-pin 0.75 mm ² sheathed cable

OPEN INTERFACES: SIMPLE PROCESSING OF DATA

/ With open interfaces, third-party components can easily be integrated into PV systems. Furthermore, you can use your system data, for example, by incorporating it into your homepage. Fronius interface components have a serial interface with an open data protocol.



FRONIUS INTERFACE CARD EASY

/ Data processing from an inverter

This has a serial interface with an open data protocol that enables PV system data from a Fronius IG inverter to be read and processed.

TECHNICAL DATA	
Supply voltage	230 / 240 V AC
Dimensions (length x width x height)	140 x 100 x 27 mm
Interface	RS 232 with 9-pin submin plug



FRONIUS INTERFACE CARD/BOX

/ Processes data from up to 100 inverters

This has a serial interface with an open data protocol that enables the latest PV system data from up to 100 inverters to be read and processed.

TECHNICAL DATA		
Supply voltage	12 V DC	
Power consumption		
– Fronius Interface Card	1.2 W	
– Fronius Interface Box	1.6 W	
Box degree of protection	IP 20	
Dimensions (length x width x height)		
– Fronius Interface Card	140 x 100 x 26 mm	
– Fronius Interface Box	197 x 110 x 57 mm	
Interfaces	Socket:	Designation:
– RS 232	9-pin submin	»Data«
The Fronius Interface Box also has:		
– RS 422	RJ 45	»IN«
– RS 422	RJ 45	»OUT«
Adjustable baud rates using the „baud“ adjuster:		
– 2400, 4800, 9600, 14400, 19200		



FRONIUS DATALOGGER & INTERFACE BOX

/ Combined device for new systems and retrofitting

The Fronius Datalogger & Interface Box combines the Fronius system monitoring data with the monitoring data from third-party components.

TECHNICAL DATA		
Storage capacity	540 KB	
Storage time (1 Fronius IG or Fronius IG Plus, memory cycle 30 min)	approx. 1,000 days	
Supply voltage	12 V DC	
Power consumption	2.8 W	
Box degree of protection	IP 20	
Dimensions (length x width x height)	210 x 110 x 72 mm	
Interfaces	Socket:	Description:
- USB	USB	»USB«
- RS 232	9-pin submin	»PC«
- RS 232	9-pin submin	»Modem«
- RS 232	9-pin submin	»Data«
- RS 422	RJ 45	»IN«
- RS 422	RJ 45	»OUT«

FRONIUS SOLAR.INTERFACE

/ Software for creating an independent remote station

This software program acts a remote station for the Fronius Interface Card or Box and supports potential developers in setting up an independent remote station for the processing of PV system data.

FRONIUS CONVERTER RS 232 BOX/CARD

/ Interface converter for converting the RS 422 interface into an RS 232 interface

The interface converter allows third-party components to be used for the professional monitoring of PV systems. It converts the Fronius DATCOM system RS 422 interface into an RS 232 hardware interface. The software protocol (Fronius Solar Net or Interface Protocol) is not converted.



FRONIUS CONVERTER USB

/ Interface converter for converting the Fronius DATCOM interface into a USB interface

Converts the Fronius DATCOM system interface into a USB interface. The software protocol (Fronius Solar Net or Interface Protocol) is not converted.



SENSORS: PRECISE MEASUREMENT OF ADDITIONAL VALUES

/ Integrating sensors into a PV system enables additional measured values, such as irradiation, ambient temperature, etc., to be recorded.



FRONIUS SENSOR CARD/BOX

/ For integrating different sensors

With the Fronius Sensor Card/Box, sensors for measuring irradiation, ambient temperature, module temperature, wind speed, etc. can be integrated into the Fronius DATCOM system.

TECHNICAL DATA		
Supply voltage	12 V DC	
Power consumption		
– Fronius Sensor Card	1.1 W	
– Fronius Sensor Box	1.3 W	
Box degree of protection	IP 20	
Dimensions (length x width x height)		
– Fronius Sensor Card	140 x 100 x 26 mm	
– Fronius Sensor Box	197 x 110 x 57 mm	
Interfaces (Fronius Sensor Box only)	Socket:	Designation:
– RS 422	RJ 45	»IN«
– RS 422	RJ 45	»OUT«
T1 / T2 channels		
– Sensors	PT1000	
– Measuring range	–25°C to +75°C	
– Accuracy	0.5°C	
– Resolution	1°C	
Irradiance channel		
– Measuring ranges	0...100 mV 0...200 mV 0...1 V	
– Accuracy	3 %	
D1 / D2 channels		
– max. voltage level	5.5 V	
– max. frequency	2,500 Hz	
– minimum pulse duration	250 µs	
– Operating point „OFF“ („LOW“)	0...0.5 V	
– Operating point „ON“ („HIGH“)	3...5.5 V	
Current input channel		
– Measuring ranges	0...20 mA 4...20 mA	
– Accuracy	5 %	



FRONIUS IRRADIATION SENSOR

/ For measuring the radiated energy.



FRONIUS AMBIENT TEMPERATURE SENSOR

/ For measuring the ambient temperature.



FRONIUS MODULE TEMPERATURE SENSOR

/ For measuring the module temperature.



FRONIUS WIND SPEED SENSOR

/ For measuring the wind speed.

ADDITIONAL COMPONENTS: DATA COMMUNICATION AND REMOTE CONTROL

/ The Fronius DATCOM accessories give you the essentials for system monitoring.



FRONIUS COM CARD

/ The basic product for every PV system

The Fronius Com Card is the network card that all inverters require for data communication. Amongst other things, it provides the power supply for the entire Fronius DATCOM system. In the case of Fronius IG Plus and Fronius CL, the open interface protocol is output via the Fronius Com Card.

TECHNICAL DATA		
Supply voltage	208 V / 220 V / 230 V / 240 V / 277 V (+10% / -15%)	
Dimensions (length x width x height) – as plug-in card only	140 x 100 x 28 mm	
Interfaces	Socket:	Description:
– RS 422	RJ 45	»IN«
– RS 422	RJ 45	»OUT«



FRONIUS POWER CONTROL BOX

/ Power reduction by remote control

Box for remote-controlled power reduction of PV systems >100 kW in accordance with the German EEG 2009 standard. The Fronius Power Control Box is part of the Fronius DATCOM system and can be connected to the grid operator's remote control device.

TECHNICAL DATA		
Supply voltage	12 V DC	
Power consumption	1.3 W	
Box degree of protection	IP 20	
Dimensions (length x width x height)	197 x 110 x 57 mm	
Ambient temperature range	0°C to +50°C	
D1 / D4 channels	Operating point: „OUT“ („LOW“): „ON“ („HIGH“):	0...0.5 V 3...5.5 V
Current input channel*	Measuring ranges: Accuracy:	0...20 mA / 4...20 mA 5 %
Irradiance channel*	Measuring ranges: Accuracy:	0...100 mV / 0...200 mV / 0...1 V 3 %
Interfaces	Socket:	Description:
– RS 422	RJ 45	»IN«
– RS 422	RJ 45	»OUT«

* Not yet supported in the latest version. This channel is intended for future upgrades.

SYSTEM DESIGN

/ Dimension PV systems correctly: determine the number of modules and how they are connected or the best type of inverter.

FRONIUS SOLAR. CONFIGURATOR

/ Software for optimum system design.

FRONIUS SOLAR.CONFIGURATOR: TO HELP YOU GET THE DIMENSIONING OF YOUR SYSTEM RIGHT

/ With the Fronius Solar.configurator, complex PV systems dimension themselves - problem-free and with optimum results. You receive the various configuration options quickly and easily. Clear presentation and intuitive functions included!

FRONIUS SOLAR.CONFIGURATOR

/ The Fronius Solar.configurator software supports the precise dimensioning of PV systems. It calculates the ideal combination of PV modules and Fronius inverters.

The latest version of the software is available on the Internet at any time and can be downloaded for free! The operating instructions and information about installation can also be downloaded in pdf format.

**SIMPLY DOWNLOAD FROM
THE INTERNET!**

DESIGN OPTIONS WITH THE FRONIUS SOLAR.CONFIGURATOR

/ The Fronius Solar.configurator software offers two ways of calculating the optimum system design:

1. Module field calculation:

/ Enter either the desired system power or the number of modules and module types. The ideal inverter type will then be calculated automatically.



2. Stand-alone inverter design:

/ Simply enter the inverter and module types. The number of required modules and their connections will appear. Ready!



THE FRONIUS ENERGY CELL: CLEAN ENERGY – RELIABLE ENERGY

/ The energy concept of the future: Fronius has discovered a new solution that will provide a year-round autonomous energy supply from photovoltaics – the Fronius Energy Cell. This involves converting hydrogen into energy extremely efficiently and with no impact on the environment.



**FRONIUS
ENERGY CELL
25F AND 50F**

**ENERGY
CONCEPT
OF THE
FUTURE**



FRONIUS ENERGY CELL 25F / 50F

/ The Fronius Energy Cell is the world's first TÜV Süd-certified hydrogen-powered fuel cell system to generate emission-free electricity. Applications are mainly in the area of autonomous power supply and emergency power supply.

- / High overall efficiency
- / Quiet and smooth operation
- / Comprehensive range of safety features
- / Simple, user-friendly operation
- / Total remote monitoring of system
- / Connection concept for operation independently of the surrounding air

/ **From a technical point of view, the Fronius Energy Cell comprises two parts:**

Part 1: the Fronius Energy Cell low-temperature fuel cell system is an electrochemical generator. The fuel cell system is fitted with a PEM (Proton Exchange Membrane) stack and converts the energy source - hydrogen - into direct current. This part of the Fronius Energy Cell is already on the market.

Part 2: the integrated, high-pressure electrolysis system. Here, the excess solar power is converted into hydrogen in situ. This product will be ready for the market in a few years.

MEDIA DATA	25F	50F
Fuel	Hydrogen 5.0 (other purity grades on request)	
Hydrogen supply pressure	5 – 15 bar	
Hydrogen consumption	< 1.7 Nm ³ /h	< 3.3 Nm ³ /h
Cooling air inlet / outlet	700 Nm ³ /h	1,400 Nm ³ /h
Hydrogen ventilation (H ₂ input pressure relief device)	< 10 Nm ³ /h	
Concentration of hydrogen in exhaust air (average over one minute)	< 1%	
Reaction chamber exhaust air	< 65 Nm ³ /h	
Reaction condensate (purified water, fully desalinated)	< 2 l/h	< 3 l/h

ELECTRICAL DATA	25F	50F
DC continuous output power	2 kW	4 kW
System voltage	24 – 30 V DC	48 – 56 V DC
Maximum output current	82 A	
System efficiency	up to 47%	
Data interface	USB, CAN	

GENERAL DATA	25F	50F
Degree of protection	IP 20	
Marks of conformity	CE, TÜV Süd Fuel Cell Safety	
Measurement unit, fuel cell technology	EN 62282-5-1:2007	
Dimensions (length x width x height)	850 x 470 x 850 mm	
Weight	125 kg	132 kg
Permitted ambient temperature (at 95% rel. humidity)	+3°C to +40°C	
Permitted storage temperature (at 95% rel. humidity)	+3°C to +50°C	
Altitude above sea level	max. 2,000 m	

For further information, the latest news and Fronius Energy Cell reference projects please go to:
WWW.FRONIUS.COM/ENERGYCELL
 If you have any queries about the Fronius Energy Cell, please write to energycell@fronius.com

EVERYTHING AT A GLANCE: ITEM NUMBERS

/ So that you can always find what you are looking for quickly, we have listed all the item numbers on the following pages.

FRONIUS IG PLUS TRANSFORMER INVERTERS

ITEM DESIGNATION	ITEM NUMBER
Fronius IG Plus 30 V-1	4,210,019
Fronius IG Plus 35 V-1	4,210,015
Fronius IG Plus 50 V-1	4,210,011
Fronius IG Plus 70 V-1	4,210,016
Fronius IG Plus 70 V-2	4,210,017
Fronius IG Plus 100 V-1	4,210,012
Fronius IG Plus 100 V-2	4,210,013
Fronius IG Plus 100 V-3	4,210,020
Fronius IG Plus 120 V-3	4,210,018
Fronius IG Plus 150 V-3	4,210,014

Country setups

AT, AU, BE, CH, CN, CZ, DE, DE MS, ES, EU, FR, FR overseas, FR PRC, FR overseas PRC, GB, IE, IL, IT, KR, NL, PT, SK, TR, TW, Asia 60 Hz, GR, international 50 Hz.

Fuses	
Fuse 1A F 600V DC	41,0007,0187
Fuse 5A F 600V DC	41,0007,0205
Fuse 8A 600V DC	41,0007,0223
Fuse 10A F 600V DC	41,0007,0207
Fuse 15A F 600V DC	41,0007,0217
Fuse 20A F 600V DC	41,0007,0200
Grounding Kit Fronius IG Plus	4,001,690
Accessories	
DC connector Kit IG Plus	4,001,687
Fronius DC Box 60/12	42,0300,2872
Fronius Power Relay Card retrofit	4,070,993,Z
Dummy devices (with functioning display)	
Dummy Fronius IG Plus 50 V	4,210,988
Dummy Fronius IG Plus 100 V	4,210,983
Dummy Fronius IG Plus 150 V	4,210,984
Fronius IG Plus 50 desktop stands	4,045,999
Fronius IG Plus / IG TL product stands	42,0411,0047
IG Plus / IG TL bag for product stands	42,0411,0048

FRONIUS IG TRANSFORMER INVERTERS

ITEM DESIGNATION	ITEM NUMBER
Fronius IG 15	4,200,001
Fronius IG 20	4,200,002
Fronius IG 30	4,200,003
Fronius IG 40	4,200,004
Fronius IG 50	4,200,007
Fronius IG 60 HV	4,200,006

Country setups

with ENS: AT, BE, DE, FR, GR

without ENS: AUS, CH, CZ, ES, FR overseas, GB, IR, IT, KOR, MX 240V CSA, MX 208V CSA, NL, PT, SK, TR, TW, Asia 60 Hz, international 50 Hz.

Housing options

Outdoor standard with display	44,0240,1005
Outdoor large with display	44,0240,1006

Connection options for Fronius IG 15 – 60 HV indoor

Fronius IG screw terminal	44,0240,3000
1 DC plug MC4 no AC plug	44,0240,3041
2 DC plug MC4 no AC plug	44,0240,3042
3 DC plug MC4 no AC plug	44,0240,3043
4 DC plug MC4 no AC plug	44,0240,3044
5 DC plug MC4 no AC plug	44,0240,3045
1 DC plug MC4 and AC plug	44,0240,3046
2 DC plug MC4 and AC plug	44,0240,3047
3 DC plug MC4 and AC plug	44,0240,3048
4 DC plug MC4 and AC plug	44,0240,3049
5 DC plug MC4 and AC plug	44,0240,3050

Connection options for Fronius IG 15 – 60 HV outdoor

1 DC plug MC4 outdoor	44,0240,3051
2 DC plug MC4 outdoor	44,0240,3052
3 DC plug MC4 outdoor	44,0240,3053
4 DC plug MC4 outdoor	44,0240,3054
5 DC plug MC4 outdoor	44,0240,3055

Fuses

Fuse 1A F 600V DC	41,0007,0187
Fuse 5A F 600V DC	41,0007,0205
Fuse 8A 600V DC	41,0007,0223
Fuse 10A F 600V DC	41,0007,0207
Fuse 15A F 600V DC	41,0007,0217
Fuse 20A F 600V DC	41,0007,0200
Grounding Kit Fronius IG	4,001,692

Accessories

Fronius IG 15/20/30 DC isolation box	42,0300,2438
Fronius IG 40/60 DC isolation box	42,0300,2672

Dummy devices (with functioning display)

Dummy Fronius IG 30 Indoor	4,240,990
Dummy Fronius IG 30 Outdoor	4,240,994
Dummy Fronius IG 60 Indoor	4,240,992
Dummy Fronius IG 60 Outdoor. Easy	4,240,991
Fronius IG stand	4,045,894
Fronius IG 30 Indoor desktop stands	4,045,987
Fronius IG 30 Outdoor desktop stands	4,045,988

FRONIUS IG TL TRANSFORMERLESS INVERTER

ITEM DESIGNATION	ITEM NUMBER
Fronius IG TL 3.0	4,210,219
Fronius IG TL 3.6	4,210,220
Fronius IG TL 4.0	4,210,221
Fronius IG TL 4.6	4,210,223
Fronius IG TL 5.0	4,210,222

Country setups

AT, AU, BE, CH, CZ, DE, ES, EU, FR, FR overseas, GB, GR, IL, IT, NL, PT, SK, TR, TW, Asia 60 Hz, international 50 Hz.

Dummy devices

Dummy Fronius IG TL	4,210,997
Dummy Fronius IG TL easy	4,210,998
Fronius IG Plus / IG TL product stands	42,0411,0047

FRONIUS CL CENTRAL INVERTER

ITEM DESIGNATION	ITEM NUMBER
Fronius CL 36.0	4,210,240
Fronius CL 48.0	4,210,241
Fronius CL 60.0	4,210,242

Country setups

AT, AU, BE, CH, CZ, DE, DE MS, ES, FR, GB, GR, IE, IL, IT, KR, NL, PT, SK, TR, TW, Asia 60 Hz, international 50 Hz., overseas

Accessories

Fronius CL EU base	44,0240,0005
Isolation transformer 50Hz 61kVA 90A	43,0030,0124
Fronius CL DM 315 mm non-return valve	42,0201,3134
Fronius String Control 250/25	4,240,140
Fronius String Control 250/25 DCD DF	4,240,142
Vector surge relay retrofit	4,240,902

Fuses for Fronius String Control

Fuse 1A F 600V DC	41,0007,0187
Fuse 5A F 600V DC	41,0007,0205
Fuse 8A 600V DC	41,0007,0223
Fuse 10A F 600V DC	41,0007,0207
Fuse 15A F 600V DC	41,0007,0217
Fuse 20A F 600V DC	41,0007,0200
Grounding Kit Fronius CL 2A	4,001,714
Grounding Kit Fronius CL 3A	4,001,715

Dummy devices

Dummy Fronius CL DE	4,210,989
Dummy Fronius CL	4,210,999

FRONIUS DATCOM SYSTEM MONITORING

ITEM DESIGNATION	ITEM NUMBER
Fronius Com Card	4,240,001
Fronius Com Card retrofit	4,240,001,Z
Fronius Datalogger pro Card	4,240,002
Fronius Datalogger pro Card retrofit	4,240,002,Z
Fronius Datalogger pro Box	4,240,102
Fronius Datalogger easy Card	4,240,003
Fronius Datalogger easy Card retrofit	4,240,003,Z
Fronius Datalogger easy Box	4,240,103
Fronius Datalogger Web	4,240,123
Fronius Sensor Card	4,240,004
Fronius Sensor Card retrofit	4,240,004,Z
Fronius Sensor Box	4,240,104
Fronius Interface Card	4,240,009
Fronius Interface Card retrofit	4,240,009,Z
Fronius Interface Box	4,240,109
Fronius Interface Card easy	4,240,013
Fronius Interface Card easy retrofit	4,240,013,Z
Fronius Datalogger & Interface Box	4,240,105
Fronius Signal Card	4,240,012
Fronius Signal Card retrofit	4,240,012,Z
Fronius Wireless Transceiver Card	4,240,015,Z
Fronius Wireless Transceiver Box	4,240,115
Fronius Update Package	4,240,019
Fronius Power Control Box	4,240,120
Fronius Converter RS232 Card	4,240,018
Fronius Converter RS232 Card retrofit	4,240,018,Z
Fronius Converter RS232 Box	4,240,118
Fronius Converter USB	4,240,119
WLAN stick 802.11g Indoor	41,0018,0070
WLAN stick 802.11g Outdoor	41,0018,0071
Retrofit packages	
Package 15 Fronius Com Card retrofit	4,240,201,Z
Package 15 Fronius DL Card easy retrofit	4,240,203,Z
Package 15 Fronius Signal Card retrofit	4,240,212,Z
Displays	
Fronius Public Display Card	4,240,006
Fronius Public Display Card retrofit	4,240,006,Z
Fronius Public Display Box	4,240,106
Fronius Public Display	4,240,306
Fronius Personal Display Card	4,240,007
Fronius Personal Display Card retrofit	4,240,007,Z
Fronius Personal Display DL	4,240,132
Fronius Personal Display DL Box	4,240,136
Fronius Personal Display Dummy	4,240,907
Fronius Tester personal display	4,240,117
Sensors	
Ambient temperature sensor	43,0001,1188
Module temperature sensor	43,0001,1190
Irradiance sensor	43,0001,1189
Wind sensor	42,0411,0027

Cables and accessories

8-pin ribbon cable 100m	40,0003,0384
SFTP 26AWG/1m/CAT5 patch cable	43,0004,2435
SFTP 26AWG/20m/CAT5 patch cable	43,0004,2434
STP 26AWG/60m/CAT5 patch cable	43,0004,2436
8-pin RJ45 plug, unshielded	43,0003,0815
9-pin interface cable 2m	43,0004,1692
USB cable 2m, A-B connection	43,0004,2345
Crimping tool RJ45 plug 8/8	42,0435,0019
RG174 coax cable 2m	43,0004,2859
LLC200 coax cable 6m	43,0004,2969
DATCOM power supply 12V	43,0001,1194
Power supply for demo devices	43,0001,1214

Modem types

USR Courier 56K modem	41,0018,0054
TC35i GSM modem	41,0018,0055