



**Photon**  
The Photovoltaic Magazine **International**

**IG TL 5.0**  
**A**

96.2 % at high irradiation      09/2010

[www.photon-international.com](http://www.photon-international.com)

# Fronius **IG TL**

Transformerless PV inverter  
with standard system monitoring



**POWERING YOUR FUTURE**



## Plug in the future. Lock in your yield.

The consistent expansion of a successful family: The Fronius IG TL incorporates all the advantages of a transformerless inverter concept with the high innovation and quality demands of Fronius. Perfect for system sizes ranging from single-family homes up to agricultural or commercial operations. Unique in its class is the standard system monitoring which makes it the most future-proof transformerless inverter providing maximum earnings security.



## Lock in your yield for the long-term

System monitoring with the Status Manager comes standard in the Fronius IG TL inverter. The Status Manager immediately reports any problems thus locking in system yields for the long-term.

**String malfunction detection.** The inverter continually compares the string currents of connected strings with each other. This enables the early detection of problems in the entire system (e.g. gnawing damage to cables from small animals, module failure, etc.). This can help to prevent an incremental loss of earnings.

**Detailed status codes.** Should any problems occur in the system, comprehensive and precise service codes are displayed. This makes it easier to isolate the exact source of the error and saves valuable time for fault diagnostics and correction.

**Direct signaling contact.** A warning signal (e.g. indicator light or buzzer) can be activated when there are status changes via the 12 V signal output integrated into the inverter. Malfunctions are reported immediately.

**The highest efficiency via the Module Manager.** Whoever can always remain at the maximum power point (MPP), can get the most out of each ray of light. This is the job of the Fronius Module Manager with its accurate MPP tracking.

## Always well-informed

The numerous information and analysis options of the Fronius IG TL inverter are very simple to operate. Current operating data can be easily transferred to a PC via a USB stick. Other DATCOM components can also be easily connected via the integrated Solar Net interface.

**Night display.** System information 24/7. The matrix display shows the most important information regardless of whether or not the inverter is in operation. This is made possible via the AC side power supply. For example, this enables you to access daily system data on the display even after sundown – including any status messages.



**Integrated Solar Net interface.** Other components for system monitoring (e.g. Fronius Datalogger) can be connected directly to the inverter through the standard Solar Net interface. This enables you to easily integrate high-end system monitoring that is 100% compatible with all other Fronius IG inverters as well as the comprehensive Fronius DATCOM world.



**Easy data exchange via USB.** A commercially-available USB stick that can be inserted into the inverter collects data during operation. System information can then be moved to a PC at any time and then analyzed and archived using Fronius Solar.access software. Time-consuming cabling is no longer required. Simply pull out the DATCOM slot, remove the USB stick and load the data to your PC.

## Future-proof with USB

Future challenges have already been designed into the Fronius IG TL during its development. Its easy USB update option ensures that it will always have access to the latest program functions. And the simple DATCOM slot makes sure that it is open to further product upgrades.



**DATCOM slot.** The DATCOM slot can be used for connecting the USB stick, optional DATCOM components as well as the direct signaling contact. It opens like a drawer providing easy access. Additional components can be connected later on as required.

**Update via USB.** The USB stick can be used to upload program updates to the inverter. When a software update is available, it can be downloaded from the Fronius homepage to the USB stick. Then simply insert the USB stick into the inverter and operating functions will be updated automatically. This means that the Fronius IG TL will always have the latest software technology.

## Proven quality

**Service-friendly installation system.** The connection area and power module are installed separately from each other. Time-consuming cabling is no longer required. When service is needed, the connector remains on the wall and the DATCOM slot remains onsite – all settings and configurations remain untouched. The standard string monitoring system checks the current of up to 6 strings.



**Completely heat and dust-free ventilation concept.** The well-thought-out ventilation concept precludes overheating or contamination. The device body is hermetically sealed. Only the cooling fins for the electronics remain on the outside. The electronics are air-cooled. The temperature-controlled fan circulates outside air through the cooling fins as required. This ensures that the inside of the device remains significantly cooler and that there is absolutely no exchange between inside and outside air.



**On-site PCB replacement.** If service is required, all certified Fronius Service Partners can replace the PCB onsite. This means the quickest reaction time and minimal downtime.



**Fronius IG TL**

The first transformerless PV inverter  
with standard system monitoring for  
maximum earnings security.



## Fronius IG TL Overview

Naturally, all Fronius IG TL devices have the **CE** mark and meet all required guidelines and standards. For more information about certificates as well as details about equipment analysis and control using the DATCOM system, please go to [www.fronius.com](http://www.fronius.com).

INPUT DATA	Fronius IG TL 3.0	Fronius IG TL 3.6	Fronius IG TL 4.0	Fronius IG TL 5.0
DC maximum output	3130 W	3840 W	4190 W	5250 W
Max. input current ( $I_{dc\ max}$ )	8.8 A	10.8 A	11.8 A	14.7 A
Max. input voltage ( $U_{dc\ max}$ )	850 V	850 V	850 V	850 V
MPP voltage range ( $U_{mpp\ min} - U_{mpp\ max}$ )	350 - 700 V	350 - 700 V	350 - 700 V	350 - 700 V

OUTPUT DATA	Fronius IG TL 3.0	Fronius IG TL 3.6	Fronius IG TL 4.0	Fronius IG TL 5.0
AC nominal output ( $P_{ac,r}$ )	3000 W	3680 W	4000 W	4600 W* / 5000 W
Max. output power	3000 W	3680 W	4000 W	5000 W
Max. output current ( $I_{ac\ max}$ )	13.0 A	16.0 A	17.4 A	21.7 A
Maximum efficiency	97.7 %	97.7 %	97.7 %	97.7 %
European efficiency ( $\eta_{EU}$ )	97.1 %	97.2 %	97.3 %	97.3 %
MPP adjustment efficiency	> 99.9 %			
Mains connection	1~NPE 230 V			
Frequency ( $f_r$ )	50 Hz/60 Hz			
Distortion factor	< 3 %			
Power factor ( $\cos \varphi_{ac,r}$ )	1			
Nighttime consumption	< 1 W			

GENERAL DATA	Fronius IG TL 3.0	Fronius IG TL 3.6	Fronius IG TL 4.0	Fronius 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			
Inverter	Transformerless			
Cooling	Controlled air cooling			
Installation	Indoors and outdoors			
Ambient temperature range	-20°C to +55°C			
Permitted humidity	0% to 95%			

PROTECTIVE EQUIPMENT	Fronius IG TL 3.0	Fronius IG TL 3.6	Fronius IG TL 4.0	Fronius IG TL 5.0
DC insulation measurement	Universal-current-sensitive fault monitoring			
Overload behaviour	Operating point adjustment, power limitation			
DC disconnecter	Integrated			

INTERFACES	Fronius IG TL 3.0	Fronius IG TL 3.6	Fronius IG TL 4.0	Fronius IG TL 5.0
USB A socket	For USB sticks** no bigger than 80 x 33 x 20 mm (l x w x h)			
Signalling output (NO contact)	2-pin screw terminal, 12 V max. 300 mA			
2x RJ45 sockets (RS485)	Solar Net interface, interface protocol			

\* Fronius IG TL 5.0 devices destined for Germany, Austria, Belgium and the Czech Republic have an AC nominal output of 4600 W.

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

**FRONIUS AUSTRALIA PTY LTD.**  
90-92 Lambeck Drive  
Tullamarine VIC 3043  
E-Mail: [pv-sales-australia@fronius.com](mailto:pv-sales-australia@fronius.com)

**FRONIUS UK LTD.**  
Maidstone Road, Kingston  
Milton Keynes, MK10 0BD  
E-Mail: [pv-sales-uk@fronius.com](mailto:pv-sales-uk@fronius.com)



**FRONIUS INTERNATIONAL GMBH**  
Froniusplatz 1, 4600 Wels, Austria  
E-Mail: [PV@fronius.com](mailto:PV@fronius.com)

[www.fronius.com](http://www.fronius.com)