

# FRONIUS IG TL TRANSFORMERLESS INVERTER

/ Best in class with system monitoring as standard.

/ Fronius Module  
Manager/ PC board  
replacement concept

/ Mounting system



/ Ventilation concept



/ The Fronius IG TL combines all the benefits of a transformerless inverter with the high level of innovation and quality expected of Fronius. With power categories ranging from 3 to 5 kW, the Fronius IG TL is perfect for systems of any size from detached houses to 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.

## TECHNICAL DATA: FRONIUS IG TL

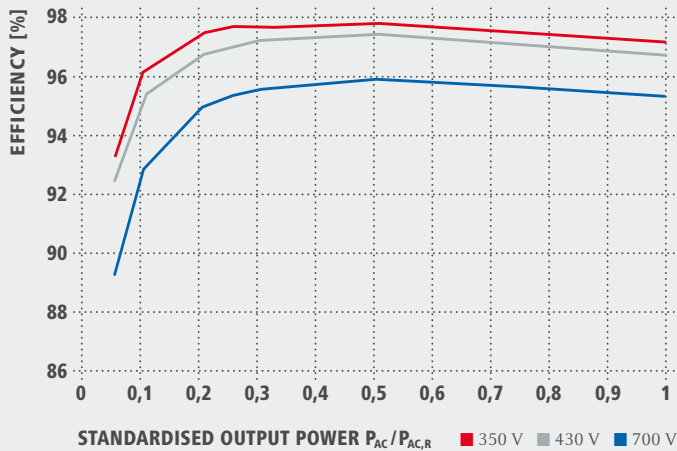
| INPUT DATA  | IG TL 3.0     | IG TL 3.6 | IG TL 4.0 | IG TL 4.6 | IG TL 5.0 |
|---|---------------|-----------|-----------|-----------|-----------|
| DC maximum power at $\cos \varphi = 1$              | 3,130 W       | 3,840 W   | 4,190 W   | 4,820 W   | 5,250 W   |
| Max. input current ( $I_{dc \max}$ )                | 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 <sup>1)</sup> / 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 ( $f_i$ )                       | 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 ( $\cos \varphi_{ac,r}$ )    | 1             |           |           |           |                                 |

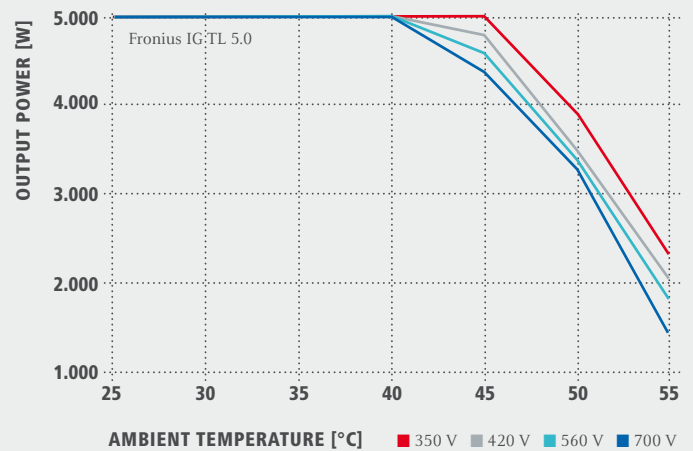
| GENERAL DATA                               | IG TL 3.0   | IG TL 3.6 | IG TL 4.0 | IG TL 4.6 | IG TL 5.0 |
|--|---|-----------|-----------|-----------|-----------|
| Dimensions (height x width x depth)        | 597 x 413 x 195 mm  |           |           |           |           |
| Weight                                     | 19.1 kg   |           |           |           |           |
| Degree of protection                       | IP 55 <sup>2)</sup>   |           |           |           |           |
| 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 – +55°C  |           |           |           |           |
| Permitted humidity                         | 0% – 95%  |           |           |           |           |
| DC connection technology                   | Screw terminal connection 2.5 mm <sup>2</sup> – 16 mm <sup>2</sup>  |           |           |           |           |
| AC connection technology                   | Screw terminal connection 2.5 mm <sup>2</sup> – 16 mm <sup>2</sup>  |           |           |           |           |
| Certificates and compliance with standards | DIN V VDE V 0126-1-1, ÖVE/ÖNORM E 8001-4-712, UTE C15-712-1, EN 50438, G83, G59, C 10 / 11, CER 06-190, AS 4777-1, AS 4777-2, AS 4777-3 |           |           |           |           |

Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).<sup>1)</sup> Fronius IG TL 5.0 devices destined for Austria, Belgium and the Czech Republic have an AC nominal output of 4,600 W.<sup>2)</sup> Please refer to the information in the operating instructions regarding correct installation of the inverter.

## FRONIUS IG TL 5.0 EFFICIENCY CURVE



## FRONIUS IG TL TEMPERATURE DERATING



## TECHNICAL DATA: FRONIUS IG TL

| 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 ( $\eta_{EU}$ ) | 97.1 %        | 97.2 %        | 97.3 %        | 97.3 %        | 97.3 %        |
| $\eta$ at 5% $P_{Ac,r}^{(1)}$       | 92.1 / 87.8 % | 92.6 / 88.3 % | 92.9 / 88.6 % | 93.1 / 89.1 % | 93.4 / 89.4 % |
| $\eta$ at 10% $P_{Ac,r}^{(1)}$      | 94.2 / 90.2 % | 95.3 / 91.2 % | 95.7 / 91.8 % | 96.0 / 92.6 % | 96.1 / 92.9 % |
| $\eta$ at 20% $P_{Ac,r}^{(1)}$      | 96.6 / 93.6 % | 96.9 / 94.2 % | 97.2 / 94.5 % | 97.3 / 94.8 % | 97.4 / 94.9 % |
| $\eta$ at 25% $P_{Ac,r}^{(1)}$      | 97.0 / 94.3 % | 97.2 / 94.7 % | 97.4 / 94.9 % | 97.5 / 95.2 % | 97.6 / 95.3 % |
| $\eta$ at 30% $P_{Ac,r}^{(1)}$      | 97.3 / 94.7 % | 97.4 / 95.1 % | 97.5 / 95.2 % | 97.6 / 95.4 % | 97.6 / 95.5 % |
| $\eta$ at 50% $P_{Ac,r}^{(1)}$      | 97.6 / 95.5 % | 97.6 / 95.7 % | 97.7 / 95.7 % | 97.7 / 95.8 % | 97.7 / 95.8 % |
| $\eta$ at 75% $P_{Ac,r}^{(1)}$      | 97.6 / 95.8 % | 97.6 / 95.8 % | 97.5 / 95.7 % | 97.4 / 95.7 % | 97.4 / 95.6 % |
| $\eta$ at 100% $P_{Ac,r}^{(1)}$     | 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 %      |               |               |

| 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 <sup>2)</sup> 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   |           |           |
| Fronius Solar Net (RS422) |           |           | Fronius Solar Net interface, interface protocol                                  |           |           |

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<sup>1)</sup> and at  $U_{mpp\ min}$  /  $U_{mpp\ max}$ .

<sup>2)</sup> Please refer to the information in the operating instructions regarding the use of USB sticks (temperature range).

/ Battery Charging Systems / Welding Technology / Solar Electronics

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v02.2012 EN

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