

# FRONIUS IG PLUS

/ The allrounder with maximum yield.

/ Fronius  
MIX™ technology/ HF transformer  
switchover/ WLAN  
interface/ Smart Grid  
Ready

/ The Fronius IG Plus generation of inverters represents an evolution of the proven Fronius IG product family. Power categories from 3.5 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.

## TECHNICAL DATA FRONIUS IG PLUS (35 V-1, 50 V-1, 55 V-1, 60 V-1, 55 V-2)

| INPUT DATA  | 35 V-1      | 50 V-1  | 55 V-1  | 60 V-1  | 55 V-2  |
|---|-------------|---------|---------|---------|---------|
| DC maximum power at $\cos \varphi = 1$              | 3,710 W     | 4,260 W | 5,260 W | 6,320 W | 5,260 W |
| Max. input current ( $I_{dc \max}$ )                | 16.2 A      | 18.6 A  | 22.9 A  | 27.5 A  | 22.9 A  |
| Max. array short circuit current                    | 24.3 A      | 27.9 A  | 34.4 A  | 41.3 A  | 34.4 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           |         |         |         |         |

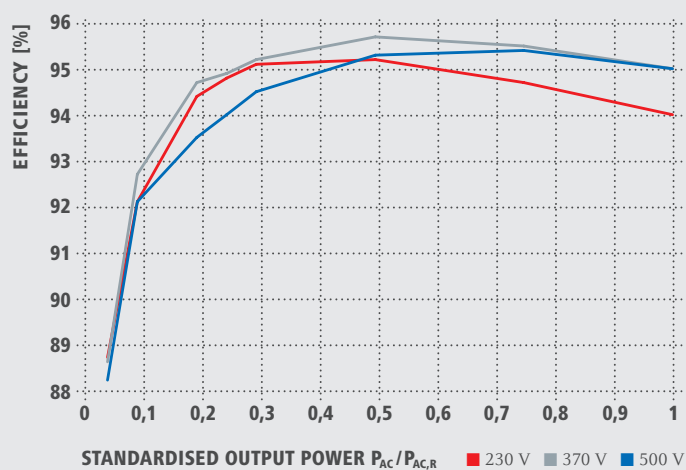
| OUTPUT DATA                                    | 35 V-1                             | 50 V-1   | 55 V-1   | 60 V-1   | 55 V-2              |
|--|------------------------------------|----------|----------|----------|---------------------|
| AC nominal output ( $P_{ac \text{ r}}$ )       | 3,500 W                            | 4,000 W  | 5,000 W  | 6,000 W  | 5,000 W             |
| Max. output power                              | 3,500 VA                           | 4,000 VA | 5,000 VA | 6,000 VA | 5,000 VA            |
| Max. output current ( $I_{ac \max}$ )          | 15.2 A                             | 17.4 A   | 21.7 A   | 26.1 A   | 10.9 A              |
| Grid connection ( $U_{ac \text{ r}}$ )         | 1-NPE 230 V                        |          |          |          | 2-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 – 65 Hz                         |          |          |          |                     |
| Distortion factor                              | < 3 %                              |          |          |          |                     |
| Power factor ( $\cos \varphi_{ac \text{ r}}$ ) | 0.75 – 1 ind. / cap. <sup>1)</sup> |          |          |          |                     |

| GENERAL DATA                               | 35 V-1  | 50 V-1 | 55 V-1 | 60 V-1             | 55 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 <sup>2)</sup>   |        |        |                    |        |
| Protection class                           | 1   |        |        |                    |        |
| Overvoltage category (DC / AC)             | 2 / 3   |        |        |                    |        |
| Night-time consumption                     | ca. 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 <sup>2</sup> – 16 mm <sup>2</sup>  |        |        |                    |        |
| AC connection technology                   | Screw terminal connection 2.5 mm <sup>2</sup> – 35 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, CEI 0-21, AS 4777-1, AS 4777-2, AS 4777-3, VDE AR N 4105, Generating systems on the medium-voltage network (BDEW) |        |        |                    |        |

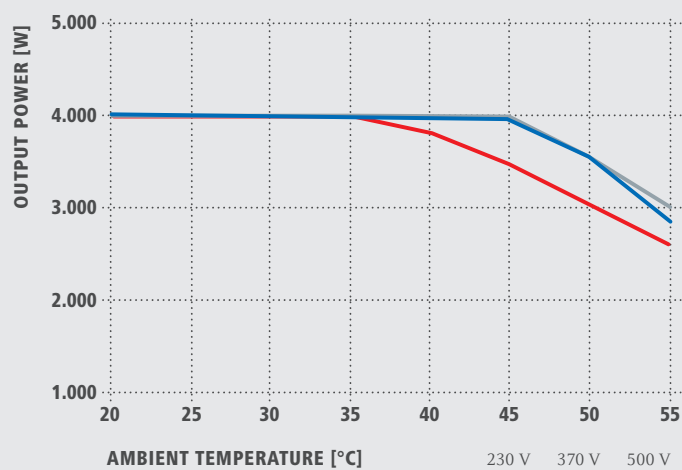
Fronius IG Plus 55 V-1, Fronius IG Plus 55 V-2 and Fronius IG Plus 60 V-1 devices do not comply with the German medium-voltage directive. Fronius IG Plus 55 V-1 and Fronius IG Plus 60 V-1 are not certified in accordance with the German low-voltage directive. Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

<sup>1)</sup> country-specific <sup>2)</sup> Please refer to the information in the operating instructions regarding correct installation of the inverter (e.g. IP 44 applies to Australia).

## FRONIUS IG PLUS 50 V-1 EFFICIENCY CURVE



## FRONIUS IG PLUS 50 V-1 TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS IG PLUS (35 V-1, 50 V-1, 55 V-1, 60 V-1, 55 V-2)

| EFFICIENCY                          | 35 V-1  | 50 V-1               | 55 V-1               | 60 V-1               | 55 V-2               |
|-------------------------------------|---|----------------------|----------------------|----------------------|----------------------|
| Max. efficiency                     | 95.7 %  | 95.7 %               | 95.7 %               | 95.7 %               | 95.7 %               |
| European efficiency ( $\eta_{EU}$ ) | 95.0 %  | 95.0 %               | 94.9 %               | 95.0 %               | 94.9 %               |
| $\eta$ at 5 % $P_{AC,R}^{(1)}$      | 88.2 / 88.1 / 87.4 %  | 88.7 / 88.6 / 88.2 % | 89.7 / 90.3 / 89.6 % | 90.2 / 91.0 / 90.0 % | 89.7 / 90.3 / 89.6 % |
| $\eta$ at 10 % $P_{AC,R}^{(1)}$     | 91.6 / 92.3 / 91.5 %  | 92.1 / 92.7 / 92.1 % | 91.4 / 91.8 / 90.8 % | 92.3 / 92.2 / 91.6 % | 91.4 / 91.8 / 90.8 % |
| $\eta$ at 20 % $P_{AC,R}^{(1)}$     | 94.1 / 94.6 / 93.4 %  | 94.4 / 94.7 / 93.5 % | 93.9 / 94.1 / 92.9 % | 94.6 / 94.5 / 93.7 % | 93.9 / 94.1 / 92.9 % |
| $\eta$ at 25 % $P_{AC,R}^{(1)}$     | 94.6 / 94.8 / 93.7 %  | 94.8 / 94.9 / 94.0 % | 94.4 / 94.6 / 93.6 % | 94.8 / 94.9 / 94.2 % | 94.4 / 94.6 / 93.6 % |
| $\eta$ at 30 % $P_{AC,R}^{(1)}$     | 94.9 / 95.0 / 94.1 %  | 95.1 / 95.2 / 94.5 % | 94.6 / 94.6 / 94.0 % | 95.0 / 95.2 / 94.7 % | 94.6 / 94.6 / 94.0 % |
| $\eta$ at 50 % $P_{AC,R}^{(1)}$     | 95.3 / 95.7 / 95.3 %  | 95.2 / 95.7 / 95.3 % | 94.9 / 95.5 / 94.7 % | 95.3 / 95.5 / 94.9 % | 94.9 / 95.5 / 94.7 % |
| $\eta$ at 75 % $P_{AC,R}^{(1)}$     | 94.9 / 95.6 / 95.4 %  | 94.7 / 95.5 / 95.4 % | 95.0 / 95.6 / 94.9 % | 95.1 / 95.7 / 95.3 % | 95.0 / 95.6 / 94.9 % |
| $\eta$ at 100 % $P_{AC,R}^{(1)}$    | 94.4 / 95.2 / 95.1 %  | 94.0 / 95.0 / 95.0 % | 95.1 / 95.7 / 95.2 % | 94.7 / 95.5 / 95.3 % | 95.1 / 95.7 / 95.2 % |
| MPP adaptation efficiency           | > 99.9 %  |                      |                      |                      |                      |
| PROTECTIVE EQUIPMENT                | 35 V-1  | 50 V-1               | 55 V-1               | 60 V-1               | 55 V-2               |
| DC insulation measurement           | Warning/shutdown (depending on country setup) at $R_{ISO} < 600 \text{ k}\Omega$              |                      |                      |                      |                      |
| Overload behaviour                  | Operating point shift, power limitation   |                      |                      |                      |                      |
| DC circuit breaker                  | Integrated  |                      |                      |                      |                      |
| INTERFACES                          | 35 V-1  | 50 V-1               | 55 V-1               | 60 V-1               | 55 V-2               |
| Optional with Fronius Datamanager   | WLAN, Ethernet, Modbus TCP, 6 digital inputs, 4 digital inputs/outputs, Datalogger, Webserver |                      |                      |                      |                      |

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> and at  $U_{mpp \text{ min}}$  /  $U_{dc,r}$  /  $U_{mpp \text{ max}}$ .

## TECHNICAL DATA FRONIUS IG PLUS (60 V-3 / 80 V-3 / 100 V-3 / 120 V-3 / 150 V-3)

| INPUT DATA  | 60 V-3  | 80 V-3   | 100 V-3  | 120 V-3   | 150 V-3   |
|---|---|----------|----------|-----------|-----------|
| DC maximum power at $\cos \varphi = 1$              | 6,300 W   | 7,360 W  | 8,430 W  | 10,590 W  | 12,770 W  |
| Max. input current ( $I_{dc \max}$ )                | 27.5 A  | 32.0 A   | 36.7 A   | 46.2 A    | 55.6 A    |
| Max. array short circuit current                    | 41.3 A  | 48.0 A   | 55.1 A   | 69.3 A    | 83.4 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   | 60 V-3  | 80 V-3   | 100 V-3  | 120 V-3   | 150 V-3   |
| AC nominal output ( $P_{ac \text{ r}}$ )            | 6,000 W   | 7,000 W  | 8,000 W  | 10,000 W  | 12,000 W  |
| Max. output power                                   | 6,000 VA  | 7,000 VA | 8,000 VA | 10,000 VA | 12,000 VA |
| Max. output current ( $I_{ac \max}$ )               | 8.7 A   | 10.2 A   | 11.6 A   | 14.5 A    | 17.4 A    |
| Grid connection ( $U_{ac \text{ r}}$ )              | 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 – 65 Hz  |          |          |           |           |
| Distortion factor                                   | < 3 %   |          |          |           |           |
| Power factor ( $\cos \varphi_{ac \text{ r}}$ )      | 0.75 – 1 ind. / cap. <sup>1)</sup>  |          |          |           |           |
| GENERAL DATA  | 60 V-3  | 80 V-3   | 100 V-3  | 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 <sup>2)</sup>   |          |          |           |           |
| Protection class                                    | 1   |          |          |           |           |
| Overvoltage category (DC / AC)                      | 2 / 3   |          |          |           |           |
| Night-time consumption                              | ca. 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 <sup>2</sup> – 16 mm <sup>2</sup>  |          |          |           |           |
| AC connection technology                            | Screw terminal connection 2.5 mm <sup>2</sup> – 35 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, CEI 0-21, AS 4777-1, AS 4777-2, AS 4777-3, VDE AR N 4105, Generating systems on the medium-voltage network (BDEW) |          |          |           |           |

Fronius IG Plus 60 V-3 and Fronius IG Plus 80 V-3 devices do not comply with the German medium-voltage directive.

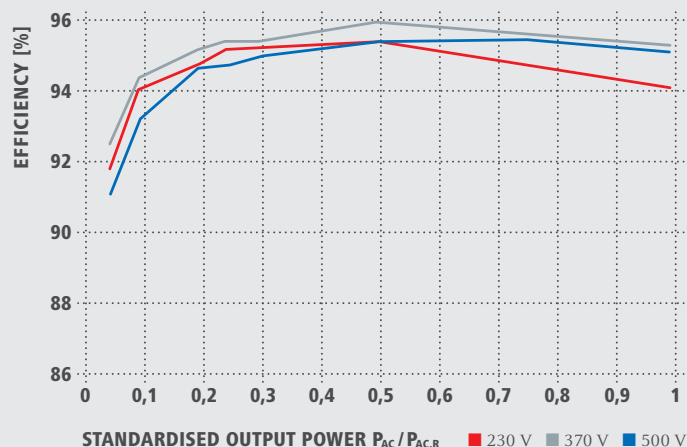
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<sup>1)</sup> country-specific

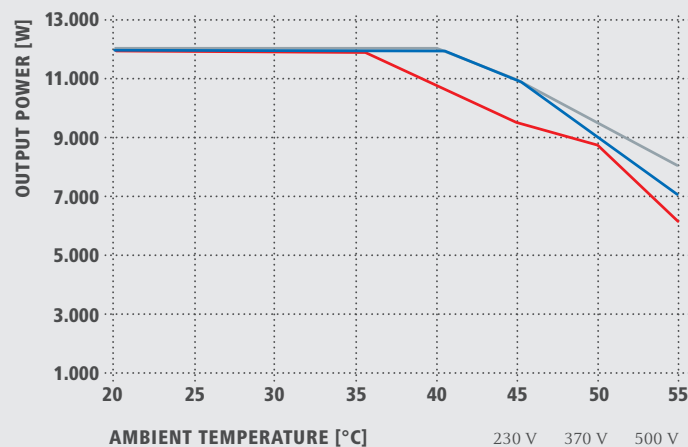
<sup>2)</sup> Please refer to the information in the operating instructions regarding correct installation of the inverter (e.g. IG 44 applies to Australia).

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## FRONIUS IG PLUS 150 V-3 EFFICIENCY CURVE



## FRONIUS IG PLUS 150 V-3 TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS IG PLUS (60 V-3 / 80 V-3 / 100 V-3 / 120 V-3 / 150 V-3)

| EFFICIENCY                          | 60 V-3  | 80 V-3               | 100 V-3              | 120 V-3              | 150 V-3              |
|-------------------------------------|---|----------------------|----------------------|----------------------|----------------------|
| Max. efficiency                     | 95.9 %  | 95.9 %               | 95.9 %               | 95.9 %               | 95.9 %               |
| European efficiency ( $\eta_{EU}$ ) | 95.0 %  | 95.1 %               | 95.3 %               | 95.4 %               | 95.4 %               |
| $\eta$ at 5 % $P_{AC,R}^{1)}$       | 90.7 / 91.6 / 90.1 %  | 90.8 / 91.8 / 90.2 % | 91.7 / 91.9 / 90.3 % | 91.5 / 92.2 / 90.7 % | 91.8 / 92.5 / 91.1 % |
| $\eta$ at 10 % $P_{AC,R}^{1)}$      | 91.8 / 92.5 / 91.1 %  | 92.1 / 92.8 / 91.5 % | 93.1 / 93.1 / 92.0 % | 93.4 / 93.7 / 92.6 % | 94.0 / 94.3 / 93.2 % |
| $\eta$ at 20 % $P_{AC,R}^{1)}$      | 94.1 / 94.3 / 93.2 %  | 94.2 / 94.5 / 93.6 % | 94.3 / 94.9 / 94.2 % | 94.6 / 95.2 / 94.5 % | 94.7 / 95.1 / 94.6 % |
| $\eta$ at 25 % $P_{AC,R}^{1)}$      | 94.4 / 94.7 / 93.8 %  | 94.6 / 94.9 / 94.3 % | 94.6 / 95.2 / 94.5 % | 94.7 / 95.3 / 94.7 % | 95.1 / 95.3 / 94.7 % |
| $\eta$ at 30 % $P_{AC,R}^{1)}$      | 94.5 / 95.0 / 94.4 %  | 94.6 / 95.2 / 94.6 % | 94.7 / 95.2 / 94.5 % | 95.0 / 95.4 / 94.7 % | 95.1 / 95.3 / 94.9 % |
| $\eta$ at 50 % $P_{AC,R}^{1)}$      | 95.1 / 95.4 / 94.6 %  | 95.1 / 95.5 / 94.9 % | 95.3 / 95.8 / 95.0 % | 95.3 / 95.9 / 95.1 % | 95.3 / 95.9 / 95.3 % |
| $\eta$ at 75 % $P_{AC,R}^{1)}$      | 95.3 / 95.7 / 95.0 %  | 95.3 / 95.9 / 95.1 % | 95.3 / 95.9 / 95.3 % | 95.0 / 95.5 / 95.4 % | 94.7 / 95.6 / 95.4 % |
| $\eta$ at 100 % $P_{AC,R}^{1)}$     | 95.3 / 95.9 / 95.3 %  | 95.1 / 95.7 / 95.4 % | 94.9 / 95.7 / 95.4 % | 94.6 / 95.5 / 95.3 % | 94.0 / 95.2 / 95.1 % |
| MPP adaptation efficiency           | > 99.9 %  |                      |                      |                      |                      |
| PROTECTIVE EQUIPMENT                | 60 V-3  | 80 V-3               | 100 V-3              | 120 V-3              | 150 V-3              |
| DC insulation measurement           | Warning/shutdown (depending on country setup) at $R_{ISO} < 600 \text{ kOhm}$                 |                      |                      |                      |                      |
| Overload behaviour                  | Operating point shift, power limitation   |                      |                      |                      |                      |
| DC circuit breaker                  | Integrated  |                      |                      |                      |                      |
| INTERFACES                          | 60 V-3  | 80 V-3               | 100 V-3              | 120 V-3              | 150 V-3              |
| Optional with Fronius Datamanager   | WLAN, Ethernet, Modbus TCP, 6 digital inputs, 4 digital inputs/outputs, Datalogger, Webserver |                      |                      |                      |                      |

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

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Further information about all Fronius products and our global sales partners and representatives can be found at [www.fronius.com](http://www.fronius.com)

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