

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 ($U_{dc,start}$)	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 – 500 V				
Number of DC inputs	6				

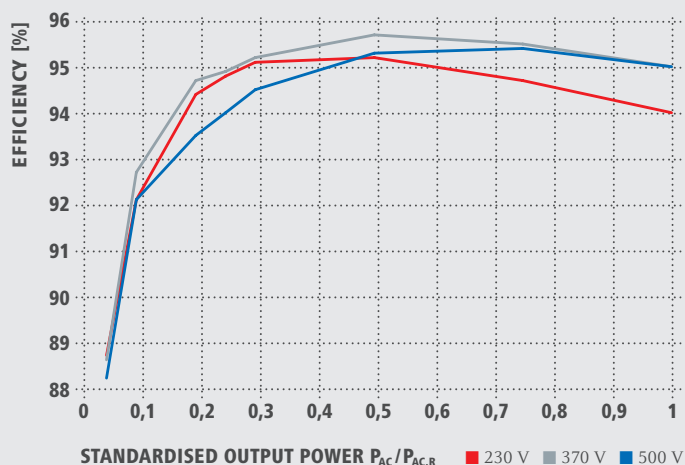
OUTPUT DATA	35 V-1	50 V-1	55 V-1	60 V-1	55 V-2
AC nominal output ($P_{ac,r}$)	3,500 W	4,000 W	5,000 W	6,000 W	5,000 W
Max. output power	3,500 VA	4,000 VA	5,000 VA	6,000 VA	5,000 VA
Max. output current ($I_{ac,max}$)	15.2 A	17.4 A	21.7 A	26.1 A	10.9 A
Grid connection ($U_{ac,r}$)	1-NPE 230 V				2-NPE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

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 ²⁾				
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 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 C15-712-1, 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)				

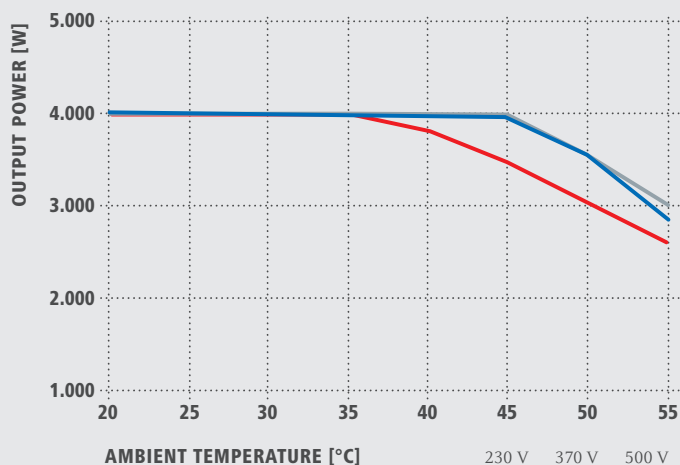
Fronius IG Plus 55 V-1 and Fronius IG Plus 60 V-1 devices do not comply with the German medium-voltage directive. Fronius IG Plus 55 V-1 and Fronius IG Plus 60 V-1 are not certified in accordance with the German low-voltage directive. Further information regarding the availability of the inverters in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

¹⁾ country-specific ²⁾ 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 (η_{EU})	95.0 %	95.0 %	94.9 %	95.0 %	94.9 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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, Webservice				

Further information regarding the availability of the inverters in your country can be found at www.fronius.com.

¹⁾ 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 ($U_{dc,start}$)	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 – 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 ($P_{ac,r}$)	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 ($U_{ac,r}$)	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 ($\cos \varphi_{ac,r}$)	0.75 – 1 ind. / cap. ¹⁾				

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 ²⁾				
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 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 C15-712-1, 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.

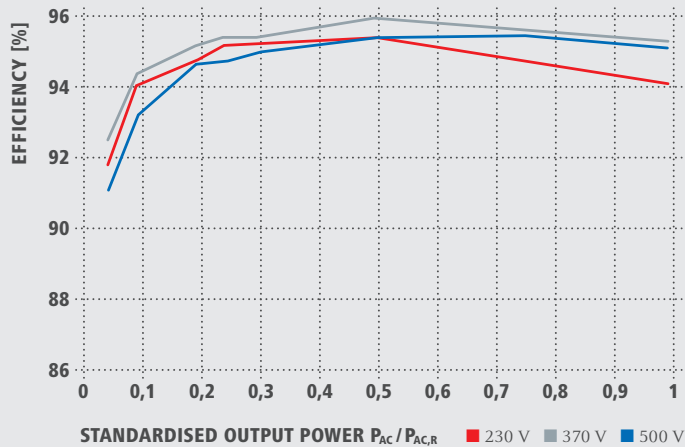
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¹⁾ country-specific

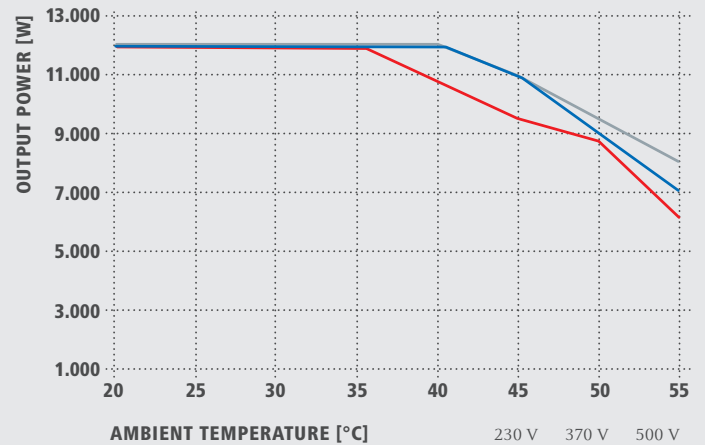
²⁾ Please refer to the information in the operating instructions regarding correct installation of the inverter (e.g. IG 44 applies to Australia).

**BROAD 3-PHASE INVERTER
RANGE FROM 6 BIS 12 KW!**

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 (η_{EU})	95.0 %	95.1 %	95.3 %	95.4 %	95.4 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 %
η 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 $R_{ISO} < 600 \text{ k}\Omega$				
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, Webservice				

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

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WE HAVE THREE DIVISIONS AND ONE PASSION: SHIFTING THE LIMITS OF POSSIBILITY.

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Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com

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