

FRONIUS IG PLUS TRANSFORMER INVERTER

/ The allrounder with maximum yield.



/ MIX™ concept



/ HF transformer switchover



/ Module Manager



/ PC board replacement concept



/ Mounting system



/ Ventilation concept



/ 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.

TECHNICAL DATA: FRONIUS IG PLUS (30 V-1, 35 V-1, 50 V-1, 70 V-2, 100 V-2)

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		

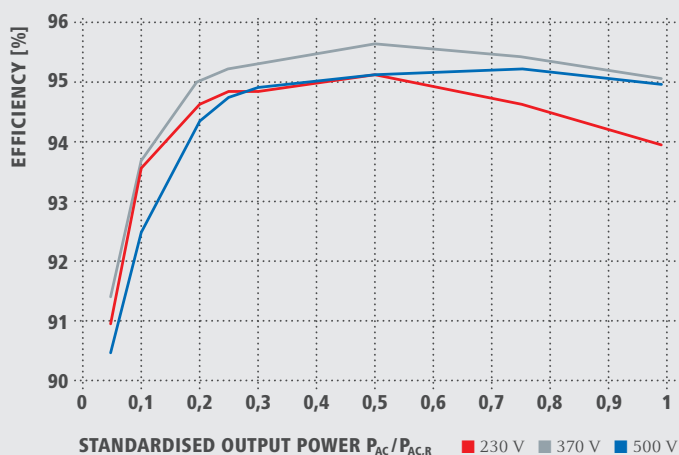
OUTPUT DATA	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
AC nominal output ($P_{ac \text{ r}}$)	3,000 W	3,500 W	4,000 W	6,500 W	8,000 W
Max. output power	3,000 VA	3,500 VA	4,000 VA	6,500 VA	8,000 VA
Max. output current ($I_{ac \max}$)	13.0 A	15.2 A	17.4 A	14.1 A (28.3 A) ¹⁾	17.4 A (34.8 A) ¹⁾
Grid connection ($U_{ac \text{ r}}$)		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 ($\cos \varphi_{ac \text{ r}}$)			0.85 – 1 ind. / cap.		

¹⁾ Single-phase (opt.)

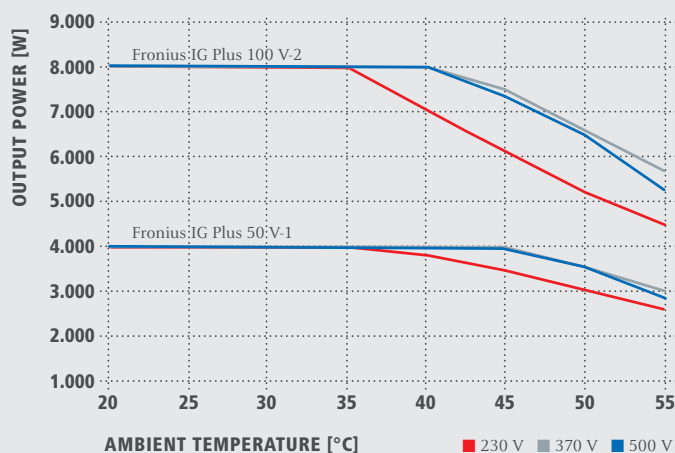
GENERAL DATA	30 V-1	35 V-1	50 V-1	70 V-2	100 V-2
Dimensions (height x width x depth)		673 x 434 x 250 mm		968 x 434 x 250 mm	
Weight		23.8 kg		36.9 kg	
Degree of protection			IP 54 ²⁾		
Protection class			1		
Overvoltage category (DC / AC)			2 / 3		
Night-time consumption _{CL}			< 1 W		
Inverter concept			HF transformer		
Cooling			Regulated air cooling		
Installation			Indoor and outdoor installation		
Ambient temperature range			from -20°C – +55°C		
Permitted humidity			0% – 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, 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.

FRONIUS IG PLUS 100 V-2 EFFICIENCY CURVE



FRONIUS IG PLUS V TEMPERATURE DERATING



TECHNICAL DATA: FRONIUS IG PLUS (30 V-1, 35 V-1, 50 V-1, 70 V-2, 100 V-2)

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 $R_{ISO} < 500\ k\Omega$				
Overload behaviour	Operating point shift, power limitation				
DC circuit breaker	Integrated				

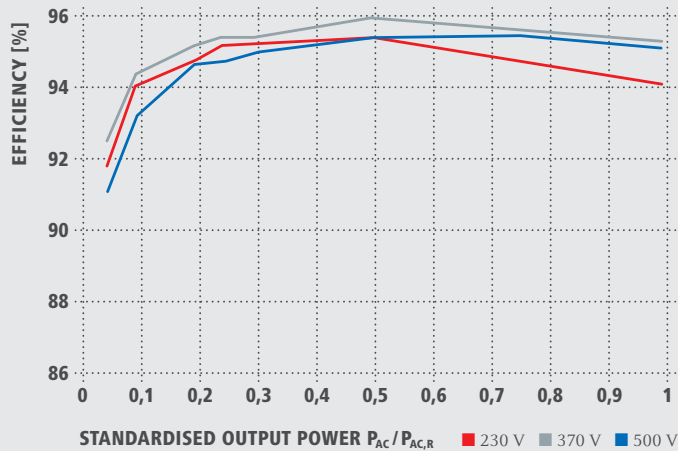
TECHNICAL DATA: FRONIUS IG PLUS (100 V-3, 120 V-3, 150 V-3)

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 ($U_{dc \text{r}}$)		370 V	
Max. input voltage ($U_{dc \max}$)		600 V	
MPP voltage range ($U_{\text{mpp min}} - U_{\text{mpp max}}$)		230 – 500 V	
Number of DC inputs		6	
OUTPUT DATA	100 V-3 ¹⁾	120 V-3	150 V-3
AC nominal output ($P_{ac \text{r}}$)	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 ($U_{ac \text{r}}$)		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 Hz – 65 Hz	
Distortion factor		< 3 %	
Power factor ($\cos \varphi_{ac \text{r}}$)		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 – +55°C	
Permitted humidity		0% – 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, Guida per le connessioni alla rete elettrica di ENEL Distribuzione, AS 4777-1, AS 4777-2, AS 4777-3	

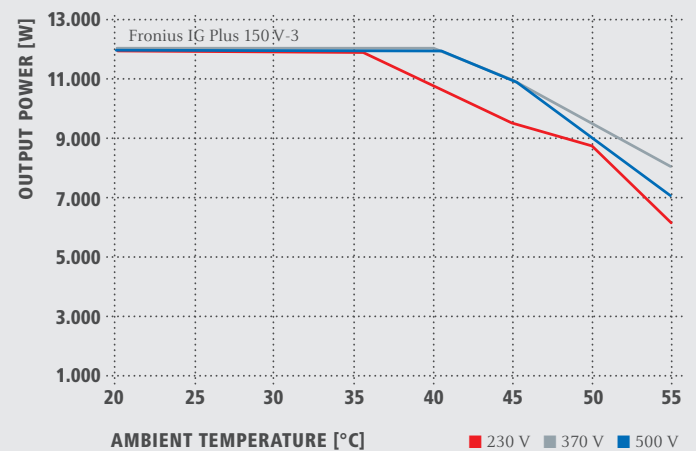
¹⁾ Fronius IG Plus 100 V-3 devices may only be used in Europe (except Italy).

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

FRONIUS IG PLUS 150 V-3 EFFICIENCY CURVE



FRONIUS IG PLUS V TEMPERATURE DERATING



TECHNICAL DATA: FRONIUS IG PLUS (100 V-3, 120 V-3, 150 V-3)

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 $R_{ISO} < 500\ k\Omega$	
Overload behaviour		Operating point shift, power limitation	
DC circuit breaker		Integrated	

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