

FRONIUS IG TRANSFORMER INVERTER

/ The dependable PV inverter range.

/ Fronius
MIX™ concept/ HF transformer
switchover/ Fronius Module
Manager/ PC board
replacement concept

/ With the Fronius IG product family, Fronius has launched a generation of inverters rated from 1.3 to 5 kW that is compatible with all solar modules. What makes the inverters so appealing is their intuitive operation and ease of use, together with their highly informative analyses of system values in every situation. In short: a PV inverter that any system operator would welcome.

TECHNICAL DATA: FRONIUS IG

INPUT DATA	IG 15	IG 20	IG 30	IG 40	IG 60 HV
DC maximum power at $\cos \varphi = 1$	1,610 W	2,150 W	2,850 W	4,410 W	5,380 W
Max. input current ($I_{dc \max}$)	10.8 A	14.3 A	19.0 A	29.4 A	35.8 A
Min. input voltage ($U_{dc \min}$)			150 V		
Feed-in start voltage ($U_{dc \text{ start}}$)			170 V		
Nominal input voltage ($U_{dc \text{ r}}$)			280 V		
Max. input voltage ($U_{dc \max}$)			500 V		530 V
MPP voltage range ($U_{mpp \min} - U_{mpp \max}$)			150 V – 400 V		
Number of DC inputs			5		

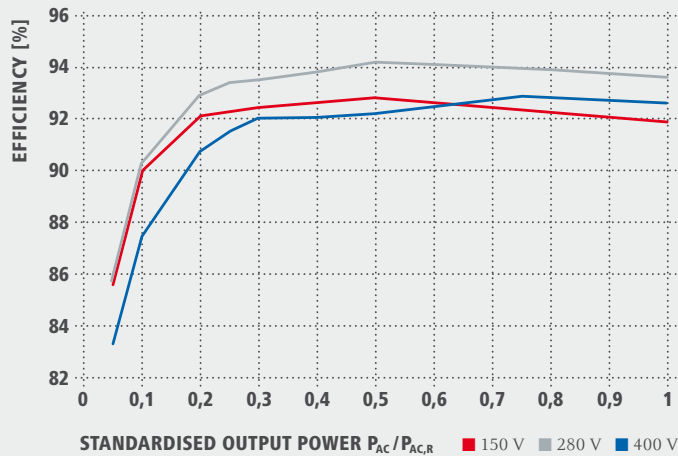
OUTPUT DATA	IG 15	IG 20	IG 30	IG 40	IG 60 HV
AC nominal output ($P_{ac \text{ r}}$)	1,300 W	1,800 W	2,500 W	3,500 W	4,600 W
Max. output power	1,500 W	2,000 W	2,650 W	4,100 W	5,000 W
Max. output current ($I_{ac \max}$)	6.5 A	8.7 A	11.5 A	17.8 A	21.7 A
Grid connection ($U_{ac \text{ r}}$)			1-NPE 230 V		
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 ($f_{\min} - f_{\max}$)			47 Hz – 65 Hz		
Distortion factor			< 3 %		
Power factor ($\cos \varphi_{ac \text{ r}}$)			1		

GENERAL DATA	IG 15	IG 20	IG 30	IG 40	IG 60 HV
Dimensions (height x width x depth)	366 x 344 x 220 mm / 500 x 435 x 225 mm ¹⁾			610 x 344 x 220 mm / 733 x 435 x 225 mm ¹⁾	
Weight	9 kg / 12 kg ¹⁾			16 kg / 20 kg ¹⁾	
Degree of protection				IP 21 / IP 45 ¹⁾	
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 ¹⁾	
Ambient temperature range				from -20°C to +50°C	
Permitted humidity				0 % to 95 %	
DC connection technology Fronius Indoor				Screw terminal connection 1.5 – 10 mm ² ; DC plug optional ²⁾	
DC connection technology Fronius Outdoor				DC plug ²⁾	
AC connection technology Fronius Indoor				Screw terminal connection 1.5 – 10 mm ² ; plug optional	
AC connection technology Fronius Outdoor				Screw terminal connection 1.5 – 10 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, AS 4777-1, AS 4777-2, AS 4777-3				

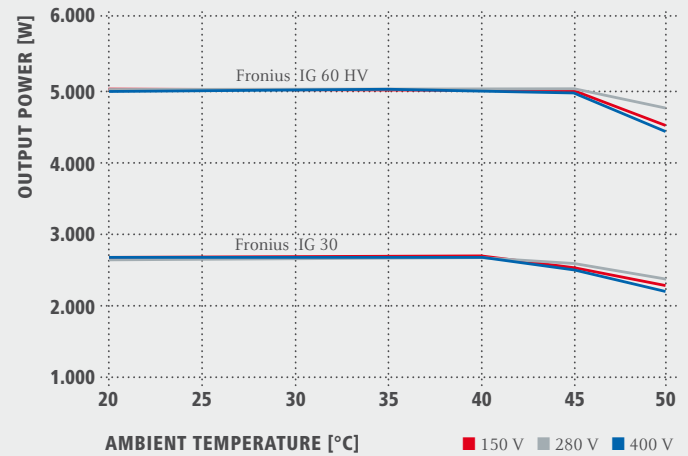
¹⁾ This applies to Fronius IG Outdoor ²⁾ MC3, MC4 or Tyco

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

FRONIUS IG 60 HV EFFICIENCY CURVE



FRONIUS IG TEMPERATURE DERATING



TECHNICAL DATA: FRONIUS IG

EFFICIENCY	IG 15	IG 20	IG 30	IG 40	IG 60 HV
Max. efficiency	94,2 %	94,3 %	94,3 %	94,3 %	94,3 %
European efficiency (η_{EU})	91,4 %	92,3 %	92,9 %	93,2 %	93,5 %
η at 5% $P_{ac,r}^{1)}$	75,0 / 76,9 / 71,1 %	77,4 / 80,6 / 71,1 %	81,6 / 83,1 / 81,4 %	82,7 / 83,3 / 80,2 %	85,6 / 85,8 / 83,3 %
η at 10% $P_{ac,r}^{1)}$	81,6 / 83,1 / 81,4 %	84,9 / 86,2 / 83,4 %	87,4 / 88,6 / 85,9 %	88,5 / 89,3 / 85,0 %	90,0 / 90,3 / 87,5 %
η at 20% $P_{ac,r}^{1)}$	87,8 / 89,2 / 85,9 %	89,7 / 90,5 / 87,3 %	91,2 / 91,8 / 89,1 %	91,5 / 92,3 / 89,6 %	92,2 / 93,0 / 90,8 %
η at 25% $P_{ac,r}^{1)}$	89,3 / 89,9 / 86,8 %	90,8 / 91,3 / 88,5 %	91,8 / 92,7 / 90,2 %	92,1 / 92,9 / 90,6 %	92,4 / 93,5 / 91,6 %
η at 30% $P_{ac,r}^{1)}$	90,1 / 90,7 / 87,9 %	91,5 / 92,3 / 89,8 %	92,3 / 93,2 / 90,9 %	92,4 / 93,3 / 91,1 %	92,5 / 93,6 / 92,1 %
η at 50% $P_{ac,r}^{1)}$	92,0 / 92,9 / 90,3 %	92,6 / 93,7 / 91,4 %	92,8 / 94,0 / 92,4 %	92,7 / 93,9 / 91,5 %	92,9 / 94,3 / 92,3 %
η at 75% $P_{ac,r}^{1)}$	92,7 / 93,8 / 91,7 %	92,8 / 94,3 / 92,6 %	92,4 / 94,3 / 92,8 %	92,9 / 94,1 / 92,6 %	92,5 / 94,1 / 92,9 %
η at 100% $P_{ac,r}^{1)}$	92,8 / 94,2 / 92,5 %	92,4 / 94,0 / 92,9 %	92,0 / 93,4 / 92,6 %	92,5 / 94,3 / 92,9 %	92,0 / 93,7 / 92,7 %
MPP adaptation efficiency	> 99,9 %				

PROTECTIVE EQUIPMENT	IG 15	IG 20	IG 30	IG 40	IG 60 HV
DC insulation measurement	Warning/shutdown (depending on country setup) at $R_{ISO} < 500$ kOhm				
Overload behaviour	Operating point shift, power limitation				
Reverse polarity protection	Integrated				

¹⁾ and at $U_{mpp\ min} / U_{dc,r} / U_{mpp\ max}$.

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/ Battery Charging Systems / Welding Technology / Solar Electronics

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/ Whether Battery Charging Systems, Welding Technology or Solar Electronics - our goal is clearly defined: to be the technology and quality leader. With around 3,000 employees worldwide, we shift the limits of what's possible - our more than 850 active patents are testimony to this. While others progress step by step, we innovate in leaps and bounds. Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com



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