

# FRONIUS IG PLUS TRANSFORMER INVERTER

/ The allrounder with maximum yield.

/ Fronius  
MIX™ concept/ HF transformer  
switchover/ Fronius Module  
Manager/ PC board replace-  
ment 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 2.6 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 (25 V-1, 30 V-1, 35 V-1, 50 V-1, 55 V-1, 60 V-1)

INPUT DATA	25 V-1	30 V-1	35 V-1	50 V-1	55 V-1	60 V-1
DC maximum power at $\cos \varphi = 1$	2,740 W	3,170 W	3,710 W	4,260 W	5,260 W	6,320 W
Max. input current ( $I_{dc \max}$ )	11.9 A	13.8 A	16.2 A	18.6 A	22.9 A	27.5 A
Max. array short circuit current	17.9 A	20.7 A	24.3 A	27.9 A	34.4 A	41.3 A
Min. input voltage ( $U_{dc \min}$ )	230 V					
Feed-in start voltage ( $U_{dc \text{ start}}$ )	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	25 V-1	30 V-1	35 V-1	50 V-1	55 V-1	60 V-1
AC-Nennleistung ( $P_{ac,r}$ )	2,600 W	3,000 W	3,500 W	4,000 W	5,000 W	6,000 W
Max. output power	2,600 VA	3,000 VA	3,500 VA	4,000 VA	5,000 VA	6,000 VA
Max. output current ( $I_{ac \max}$ )	11.3 A	13.0 A	15.2 A	17.4 A	21.7 A	26.1 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 ( $f_r$ )	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. <sup>1)</sup>					

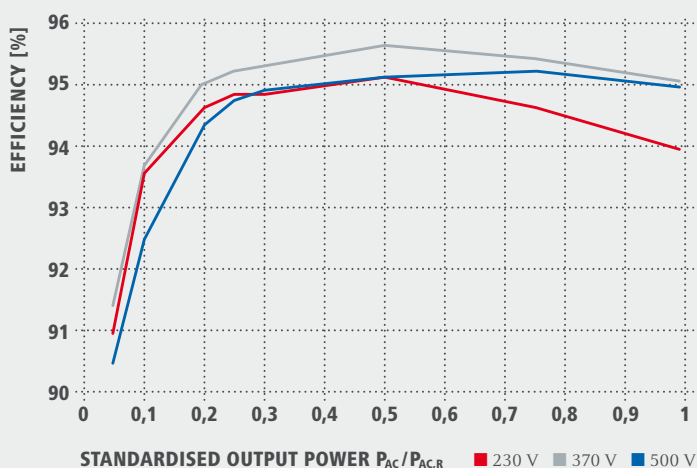
GENERAL DATA	25 V-1	30 V-1	35 V-1	50 V-1	55 V-1	60 V-1
Dimensions (height x width x depth)	673 x 434 x 250 mm				968 x 434 x 250 mm	
Weight	23.8 kg				36.9 kg	
Degree of protection	IP 54 <sup>2)</sup>					
Protection class	1					
Overvoltage category (DC / AC)	2 / 3					
Night-time consumption	ca. 1 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 25 V-1, Fronius IG Plus 55 V-1 and Fronius IG Plus 60 V-1 devices do not comply with the German medium-voltage directive. Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

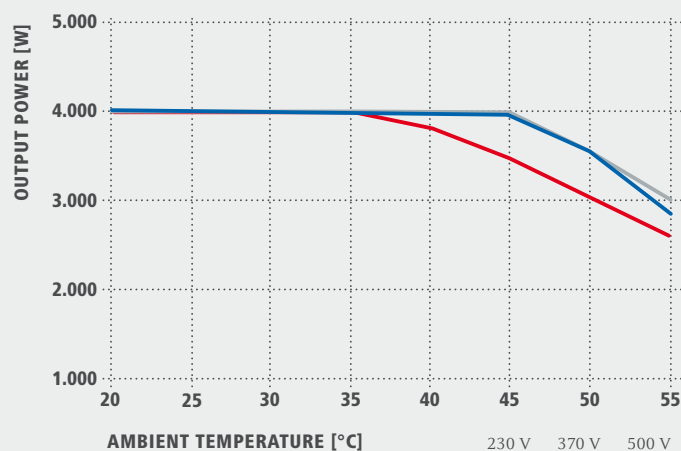
<sup>1)</sup> country-specific

<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 (25 V-1, 30 V-1, 35 V-1, 50 V-1, 55 V-1, 60 V-1)

EFFICIENCY	25 V-1	30 V-1	35 V-1	50 V-1	55 V-1	60 V-1
Max. efficiency	95.7 %	95.7 %	95.7 %	95.7 %	95.7 %	95.7 %
European efficiency ( $\eta_{EU}$ )	94.6 %	94.8 %	95.0 %	95.0 %	94.9 %	95.0 %
$\eta$ at 5 % $P_{ac,r}^{1)}$	87.5 / 87.3 / 86.8 %	87.9 / 87.6 / 87.2 %	88.2 / 88.1 / 87.4 %	88.7 / 88.6 / 88.2 %	89.7 / 90.3 / 89.6 %	90.2 / 91.0 / 90.0 %
$\eta$ at 10 % $P_{ac,r}^{1)}$	89.7 / 89.8 / 89.4 %	90.4 / 90.8 / 90.2 %	91.6 / 92.3 / 91.5 %	92.1 / 92.7 / 92.1 %	91.4 / 91.8 / 90.8 %	92.3 / 92.2 / 91.6 %
$\eta$ at 20 % $P_{ac,r}^{1)}$	93.0 / 93.6 / 92.8 %	93.6 / 94.2 / 93.2 %	94.1 / 94.6 / 93.4 %	94.4 / 94.7 / 93.5 %	93.9 / 94.1 / 92.9 %	94.6 / 94.5 / 93.7 %
$\eta$ at 25 % $P_{ac,r}^{1)}$	93.8 / 94.3 / 93.3 %	94.3 / 94.6 / 93.5 %	94.6 / 94.8 / 93.7 %	94.8 / 94.9 / 94.0 %	94.4 / 94.6 / 93.6 %	94.8 / 94.9 / 94.2 %
$\eta$ at 30 % $P_{ac,r}^{1)}$	94.4 / 94.8 / 93.6 %	94.7 / 94.9 / 93.8 %	94.9 / 95.0 / 94.1 %	95.1 / 95.2 / 94.5 %	94.6 / 94.6 / 94.0 %	95.0 / 95.2 / 94.7 %
$\eta$ at 50 % $P_{ac,r}^{1)}$	95.2 / 95.4 / 94.7 %	95.2 / 95.5 / 94.9 %	95.3 / 95.7 / 95.3 %	95.2 / 95.7 / 95.3 %	94.9 / 95.5 / 94.7 %	95.3 / 95.5 / 94.9 %
$\eta$ at 75 % $P_{ac,r}^{1)}$	95.2 / 95.7 / 95.3 %	95.1 / 95.7 / 95.4 %	94.9 / 95.6 / 95.4 %	94.7 / 95.5 / 95.4 %	95.0 / 95.6 / 94.9 %	95.1 / 95.7 / 95.3 %
$\eta$ at 100 % $P_{ac,r}^{1)}$	94.9 / 95.6 / 95.4 %	94.7 / 95.5 / 95.4 %	94.4 / 95.2 / 95.1 %	94.0 / 95.0 / 95.0 %	95.1 / 95.7 / 95.2 %	94.7 / 95.5 / 95.3 %
MPP adaptation efficiency	> 99.9%					
PROTECTIVE EQUIPMENT	25 V-1	30 V-1	35 V-1	50 V-1	55 V-1	60 V-1
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					

Fronius IG Plus 25 V-1, Fronius IG Plus 55 V-1 and Fronius IG Plus 60 V-1 devices do not comply with the German medium-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> and at  $U_{mpp \text{ min}} / U_{dc,r} / U_{mpp \text{ max}}$ .

## TECHNICAL DATA: FRONIUS IG PLUS (55 V-2, 60 V-2, 70 V-2, 100 V-2)

INPUT DATA	55 V-2	60 V-2	70 V-2	100 V-2
DC maximum power at $\cos \varphi = 1$	5,260 W	6,320 W	6,880 W	8,520 W
Max. input current ( $I_{dc \max}$ )	22.9 A	27.5 A	30.0 A	37.1 A
Max. array short circuit current	34.4 A	41.3 A	45.0 A	55.7 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	55 V-2	60 V-2	70 V-2	100 V-2
AC nominal output ( $P_{ac \text{ r}}$ )	5,000 W	6,000 W	6,500 W	8,000 W
Max. output power	5,000 VA	6,000 VA	6,500 VA	8,000 VA
Max. output current ( $I_{ac \max}$ )	10.9 A	13.0 A	14.1 A (28.3 A) <sup>1)</sup>	17.4 A (34.8 A) <sup>1)</sup>
Grid connection ( $U_{ac \text{ r}}$ )	2-NPE 400 V / 230 V		2-NPE 400 V / 230 V (1-NPE 230 V) <sup>1)</sup>	
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>2)</sup>			
GENERAL DATA	55 V-2	60 V-2	70 V-2	100 V-2
Dimensions (height x width x depth)	968 x 434 x 250 mm			
Weight	36.9 kg			
Degree of protection	IP 54 <sup>3)</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-2 and Fronius IG Plus 60 V-2 devices do not comply with the German medium-voltage directive.

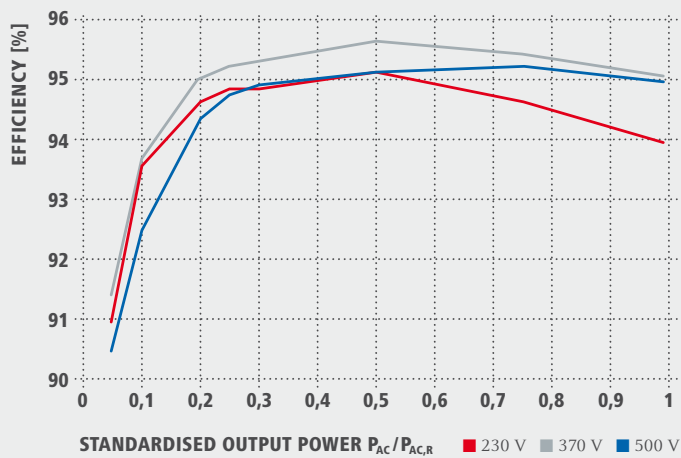
Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

<sup>1)</sup> Single-phase (opt.)

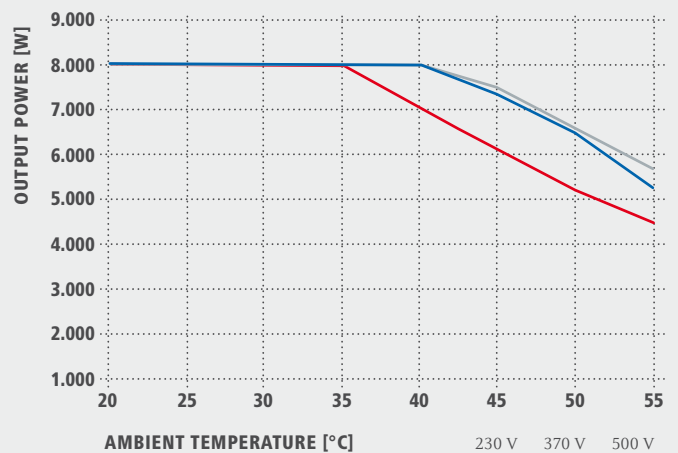
<sup>2)</sup> country-specific

<sup>3)</sup> Please refer to the information in the operating instructions regarding correct installation of the inverter (e.g. IG 44 applies to Australia).

## FRONIUS IG PLUS 100 V-2 EFFICIENCY CURVE



## FRONIUS IG PLUS 100 V-2 TEMPERATURE DERATING



## TECHNICAL DATA: FRONIUS IG PLUS (55 V-2, 60 V-2, 70 V-2, 100 V-2)

EFFICIENCY	55 V-2	60 V-2	70 V-2	100 V-2
Max. efficiency	95,7 %	95,7 %	95,7 %	95,7 %
European efficiency ( $\eta_{EU}$ )	94,9 %	95,0 %	95,1 %	95,2 %
$\eta$ at 5 % $P_{ac,r}^{1)}$	89,7 / 90,3 / 89,6 %	90,2 / 91,0 / 90,0 %	90,4 / 91,1 / 90,3 %	90,9 / 91,4 / 90,5 %
$\eta$ at 10 % $P_{ac,r}^{1)}$	91,4 / 91,8 / 90,8 %	92,3 / 92,2 / 91,6 %	93,0 / 93,2 / 92,0 %	93,6 / 93,7 / 92,5 %
$\eta$ at 20 % $P_{ac,r}^{1)}$	93,9 / 94,1 / 92,9 %	94,6 / 94,5 / 93,7 %	94,7 / 94,7 / 94,0 %	94,7 / 95,1 / 94,4 %
$\eta$ at 25 % $P_{ac,r}^{1)}$	94,4 / 94,6 / 93,6 %	94,8 / 94,9 / 94,2 %	94,9 / 95,1 / 94,4 %	94,9 / 95,3 / 94,8 %
$\eta$ at 30 % $P_{ac,r}^{1)}$	94,6 / 94,6 / 94,0 %	95,0 / 95,2 / 94,7 %	95,0 / 95,3 / 94,8 %	94,9 / 95,4 / 95,0 %
$\eta$ at 50 % $P_{ac,r}^{1)}$	94,9 / 95,5 / 94,7 %	95,3 / 95,5 / 94,9 %	95,3 / 95,5 / 94,9 %	95,2 / 95,7 / 95,2 %
$\eta$ at 75 % $P_{ac,r}^{1)}$	95,0 / 95,6 / 94,9 %	95,1 / 95,7 / 95,3 %	95,0 / 95,7 / 95,3 %	94,7 / 95,5 / 95,3 %
$\eta$ at 100 % $P_{ac,r}^{1)}$	95,1 / 95,7 / 95,2 %	94,7 / 95,5 / 95,3 %	94,5 / 95,4 / 95,2 %	94,0 / 95,1 / 95,0 %
MPP adaptation efficiency	> 99,9 %			
PROTECTIVE EQUIPMENT	55 V-2	60 V-2	70 V-2	100 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			

Fronius IG Plus 55 V-2 and Fronius IG Plus 60 V-2 devices do not comply with the German medium-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> and at  $U_{mpp \text{ min}} / U_{dc,r} / U_{mpp \text{ max}}$ .

## TECHNICAL DATA: FRONIUS IG PLUS (55 V-3 / 60 V-3 / 80 V-3 / 100 V-3 / 120 V-3 / 150 V-3)

INPUT DATA	55 V-3	60 V-3	80 V-3	100 V-3	120 V-3	150 V-3
DC maximum power at $\cos \varphi = 1$	5,250 W	6,300 W	7,360 W	8,430 W	10,590 W	12,770 W
Max. input current ( $I_{dc \max}$ )	22.8 A	27.5 A	32.0 A	36.7 A	46.2 A	55.6 A
Max. array short circuit current	34.2 A	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	55 V-3	60 V-3	80 V-3	100 V-3	120 V-3	150 V-3
AC nominal output ( $P_{ac \text{ r}}$ )	5,000 W	6,000 W	7,000 W	8,000 W	10,000 W	12,000 W
Max. output power	5,000 VA	6,000 VA	7,000 VA	8,000 VA	10,000 VA	12,000 VA
Max. output current ( $I_{ac \max}$ )	7.3 A	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	55 V-3	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	-20 - +55 °C					
Permitted humidity	0 % to 95 %					
DC connection technology	Screw terminal connection, 1.5 - 16 mm <sup>2</sup>					
AC connection technology	Screw terminal connection, 2.5 - 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)					

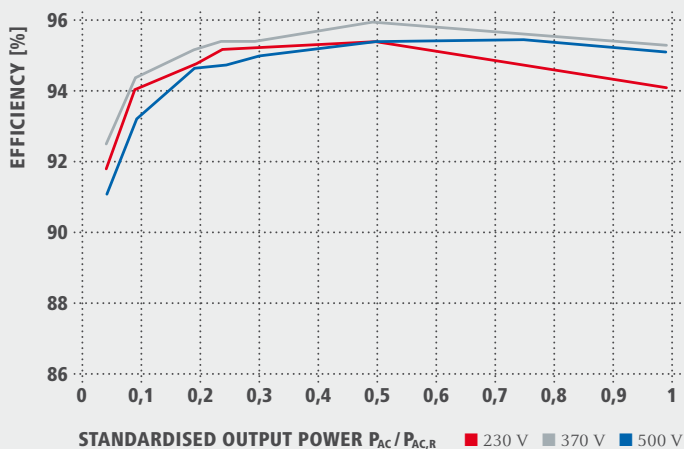
Fronius IG Plus 55 V-3, Fronius IG Plus 60 V-3 and Fronius IG Plus 80 V-3 devices do not comply with German medium-voltage directive. Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

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

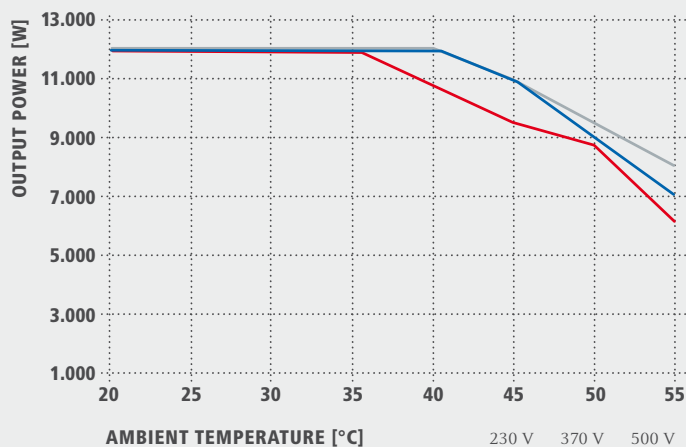
<sup>2)</sup> Please refer to the information in the operating instructions regarding correct installation of the inverter (e.g. IP 44 applies to Australia).

**BROAD 3-PHASE INVERTER  
RANGE FROM 5 TO 12 KW!**

## FRONIUS IG PLUS 150 V-3 EFFICIENCY CURVE



## FRONIUS IG PLUS 150 V-3 TEMPERATURE DERATING



## TECHNICAL DATA: FRONIUS IG PLUS (55 V-3 / 60 V-3 / 80 V-3 / 100 V-3 / 120 V-3 / 150 V-3)

EFFICIENCY	55 V-3	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 %	95.9 %
European efficiency ( $\eta_{EU}$ )	94.9 %	95.0 %	95.1 %	95.3 %	95.4 %	95.4 %
$\eta$ at 5% $P_{AC,R}^{1)}$	90.5 / 91.6 / 89.9 %	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% $P_{AC,R}^{1)}$	91.5 / 92.2 / 90.8 %	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% $P_{AC,R}^{1)}$	93.4 / 93.6 / 93.3 %	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% $P_{AC,R}^{1)}$	94.1 / 94.2 / 93.3 %	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% $P_{AC,R}^{1)}$	94.4 / 94.5 / 93.8 %	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% $P_{AC,R}^{1)}$	94.7 / 95.4 / 94.7 %	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% $P_{AC,R}^{1)}$	95.2 / 95.7 / 95.0 %	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 / 95.2 %	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	55 V-3	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					

Fronius IG Plus 55 V-3, Fronius IG Plus 60 V-3 and Fronius IG Plus 80 V-3 devices do not comply with German medium-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> and at  $U_{mpp \text{ min}} / U_{dc,r} / U_{mpp \text{ max}}$ .

/ Battery Charging Systems / Welding Technology / Solar Electronics

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Fronius Australia Pty Ltd.  
90-92 Lambeck Drive  
Tullamarine VIC 3043  
Australia  
pv-sales-australia@fronius.com  
www.fronius.com.au

Fronius UK Limited  
Maidstone Road, Kingston  
Milton Keynes, MK10 0BD  
United Kingdom  
pv-sales-uk@fronius.com  
www.fronius.co.uk

Fronius International GmbH  
Froniusplatz 1  
4600 Wels  
Austria  
pv@fronius.com  
www.fronius.com