SHIFTING THE LIMITS

FRONIUS GALVO

/ Not just an inverter, but an energy management system.

/ PC board replacement process

/ Mounting system

/ HF transformer switchover

/ WLAN interface

/ Open data communication

/ Smart Grid Ready

/ With power categories ranging from 1.5 to 3.1 kW, the Fronius Galvo is perfect for households – and is especially suitable for self-consumption systems. The integrated energy management relay allows the self-consumption component to be maximised. A host of other smart features make the Fronius Galvo one of the most future-proof inverters in its class: for example, the integrated datalogging, the simple connection to the internet by WLAN, or the plug-in card technology for retrofitting additional functions.

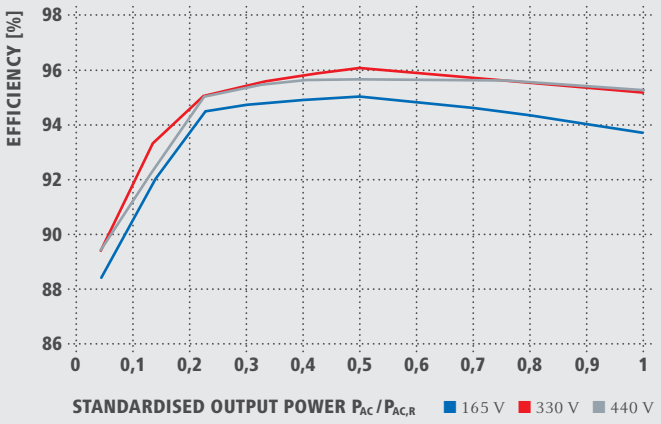
TECHNICAL DATA FRONIUS GALVO

INPUT DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
DC maximum power at cos φ = 1	1,580 W	2,140 W	2,630 W	3,210 W	3,320 W
Max. input current ($I_{dc\ max}$)	13.3 A	17.8 A	16.2 A	19.5 A	20.2 A
Max. array short circuit current	20.0 A	26.7 A	24.2 A	29.1 A	30.2 A
Min. input voltage ($U_{dc\ min}$)	120 V		165 V		
Feed-in start voltage ($U_{dc\ start}$)	120 V		165 V		
Nominal input voltage ($U_{dc,r}$)	260 V		330 V		
Max. input voltage ($U_{dc\ max}$)	420 V		550 V		
MPP voltage range ($U_{mpp\ min}$ – $U_{mpp\ max}$)	120 - 335 V		165 - 440 V		
Number of DC connections	3				

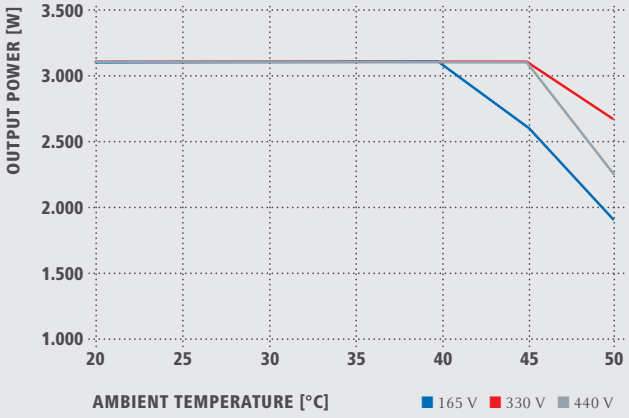
OUTPUT DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
AC nominal output ($P_{ac,r}$)	1,500 W	2,000 W	2,500 W	3,000 W	3,100 W
Max. output power	1,500 VA	2,000 VA	2,500 VA	3,000 VA	3,100 VA
Max. output current ($I_{ac\ max}$)	6.8 A	9.1 A	11.4 A	13.6 A	14.1 A
Grid connection ($U_{ac,r}$)	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})	45 - 65 Hz				
Total harmonic distortion	< 3.5 %				
Power factor (cos $\varphi_{ac,r}$)	0.85 - 1 ind. / cap.				

GENERAL DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
Dimensions (height x width x depth)	645 x 431 x 204 mm				
Weight	16.8 kg				
Degree of protection	IP 55				
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	-25 - +50 °C				
Permitted humidity	0 to 100 %				
DC connection technology	Screw terminal connection 2.5 mm² - 16 mm²				
Mains connection technology	Screw terminal connection 2.5 mm² - 16 mm²				
Certificates and compliance with standards	AS 4777-2&3, AS3100, IEC 62109-1&2, IEC 61727, IEC 62116, G83, G59, DIN V VDE 0126-1-1/A1, VDE AR N 4105, CER 06-190, CEI 0-21, EN 50438, ÖVE / ÖNORM E 8001-4-712				

FRONIUS GALVO 3.1-1 EFFICIENCY CURVE



FRONIUS GALVO 3.1-1 TEMPERATURE DERATING



TECHNICAL DATA FRONIUS GALVO

EFFICIENCY	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
Max. efficiency	95.9 %	96.0 %	96.1 %		
European efficiency (ηEU)	94.5 %	94.9 %	95.2 %	95.4 %	95.4 %
η at 5 % $P_{ac,r}$[1]	84.5 / 86.0 / 86.0 %	84.2 / 86.1 / 85.9 %	88.6 / 89.6 / 89.4 %	88.2 / 89.2 / 89.1 %	88.4 / 89.4 / 89.4 %
η at 10 % $P_{ac,r}$[1]	87.5 / 89.7 / 89.6 %	89.6 / 91.4 / 91.3 %	91.2 / 92.3 / 91.4 %	91.8 / 93.1 / 92.1 %	91.9 / 93.3 / 92.3 %
η at 20 % $P_{ac,r}$[1]	91.3 / 93.3 / 93.1 %	92.6 / 94.3 / 93.9 %	94.0 / 94.8 / 94.5 %	94.4 / 95.0 / 94.9 %	94.5 / 95.0 / 95.0 %
η at 25 % $P_{ac,r}$[1]	92.4 / 94.1 / 93.9 %	93.3 / 94.9 / 94.5 %	94.5 / 95.1 / 95.0 %	94.8 / 95.5 / 95.3 %	94.8 / 95.5 / 95.4 %
η at 30 % $P_{ac,r}$[1]	93.0 / 94.6 / 94.3 %	93.6 / 95.2 / 94.9 %	94.8 / 95.5 / 95.3 %	94.8 / 95.7 / 95.6 %	94.9 / 95.8 / 95.6 %
η at 50 % $P_{ac,r}$[1]	93.9 / 95.5 / 95.2 %	94.3 / 95.8 / 95.2 %	95.0 / 95.7 / 95.2 %	95.0 / 96.0 / 95.5 %	95.0 / 96.1 / 95.6 %
η at 75 % $P_{ac,r}$[1]	94.2 / 95.6 / 95.4 %	94.0 / 95.9 / 95.6 %	94.8 / 95.9 / 95.6 %	94.6 / 95.8 / 95.6 %	94.5 / 95.6 / 95.6 %
η at 100 % $P_{ac,r}$[1]	94.0 / 95.9 / 95.6 %	93.5 / 95.6 / 95.5 %	94.4 / 95.7 / 95.5 %	93.9 / 95.4 / 95.3 %	93.7 / 95.2 / 95.3 %
MPP adaptation efficiency	> 99.9 %				

PROTECTION DEVICES	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
DC insulation measurement	Warning/shutdown (depending on country setup) at R_{ISO} < 600 kOhm				
Overload behavior	Operating point shift, power limitation				
DC circuit breaker	Included				

INTERFACES	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1	GALVO 3.1-1
WLAN / Ethernet LAN	Fronius Solar.web / Fronius Solar.web, Modbus TCP, JSON				
6 inputs or 4 digital inputs/outputs	Interface to ripple control receiver				
USB (A socket)[2]	For USB sticks				
2x RS422 (RJ45 socket)[2]	Fronius Solar Net, interface protocol				
S0 input / signalling output[2]	Energy management (4-20 mA input / potential-free relay output)				
Datalogger and Webserver	Included				

[1] and at $U_{mpp\ min}$ / $U_{dc,r}$ / $U_{mpp\ max.}$ [2] also available in the light version.

/ Battery Charging Systems / Welding Technology / Solar Electronics

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