



SHIFTING THE LIMITS

FRONIUS GALVO

/ The future-proof inverter for small self-consumption systems.



/ PC board replacement process



/ SnapINverter Technologie



/ HF transformer switchover



/ Integrated 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 ¹⁾	GALVO 3.1-1
Max. input current ($I_{dc\ max}$)	13.3 A	17.8 A	16.6 A	19.8 A	20.7 A
Max. array short circuit current	20.0 A	26.8 A	24.8 A	29.6 A	31.0 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 MPP trackers				1	
Number of DC connections				3	

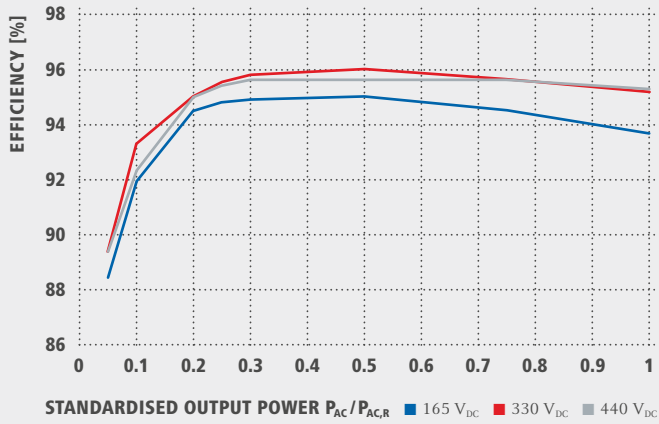
OUTPUT DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1 ¹⁾	GALVO 3.1-1
AC nominal output ($P_{ac,r}$)	1,500 W	2,000 W	2,500 W	3,000 W	3,100 W
Max. output power	1,500 VA	2,000 VA	2,500 VA	3,000 VA	3,100 VA
Max. output current ($I_{ac\ max}$)	7.2 A	9.7 A	12.1 A	14.5 A	15.0 A
Grid connection (voltage range)	1-NPE 230 V (+17 % / -20 %)				
Frequency (frequency range)	50 Hz / 60 Hz (45 - 65 Hz)				
Total harmonic distortion	< 4 %				
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 ¹⁾	GALVO 3.1-1
Dimensions (height x width x depth)	645 x 431 x 204 mm				
Weight	16.4 kg			16.8 kg	
Degree of protection	IP 65				
Protection class	1				
Overvoltage category (DC / AC) ²⁾	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 %				
Max. altitude	2,000 m / 3,500 m (unrestricted / restricted voltage range)				
DC connection technology	Screw terminal connection 2.5 mm ² - 16 mm ²				
AC connection technology	Screw terminal connection 2.5 mm ² - 16 mm ²				
Certificates and compliance with standards	ÖVE / ÖNORM E 8001-4-712, AS 4777-2, AS 4777-3, AS3100, DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1-2, IEC 62116, IEC 61727, CER 06-190, CEI 0-21, EN 50438, G83, G59				

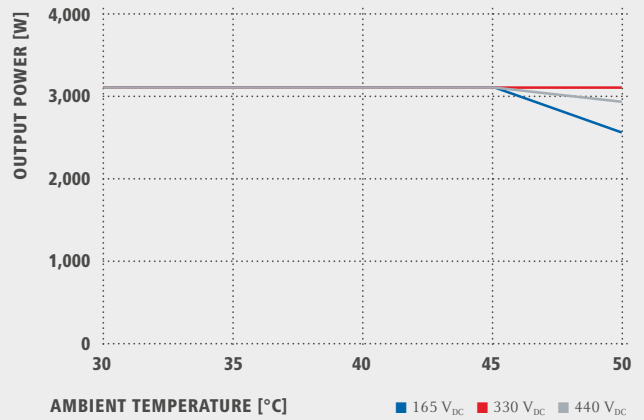
¹⁾ Available for countries where 3 kW restrictions apply. ²⁾ Testing to IEC 62109-1.

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

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 ¹⁾	GALVO 3.1-1
Max. efficiency	95.9 %	96.0 %		96.1 %	
European efficiency (η _{EU})	94.5 %	94.9 %	95.2 %	95.4 %	95.4 %
η at 5 % P _{AC,r} ²⁾	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} ²⁾	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} ²⁾	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} ²⁾	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} ²⁾	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} ²⁾	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} ²⁾	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} ²⁾	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 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 disconnecter		Included			

INTERFACES	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1 ¹⁾	GALVO 3.1-1
WLAN / Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)			
6 inputs or 4 digital inputs/outputs		Interface to ripple control receiver			
USB (A socket) ³⁾		Datalogging, inverter update via USB flash drive			
2x RS422 (RJ45 socket) ³⁾		Fronius Solar Net, interface protocol			
Signalling output ³⁾		Energy management (floating relay output)			
Datalogger and Webserver		Included			
RS485 ⁴⁾		Modbus RTU SunSpec or meter connection			

¹⁾ Available for countries where 3 kW restrictions apply. ²⁾ And at U_{mpp min} / U_{dcr} / U_{mpp max}. ³⁾ Also available in the light version. ⁴⁾ Available from autumn 2014. Further information regarding the availability of the inverters in your country can be found at www.fronius.com.

/ Perfect Welding / Solar Energy / Perfect Charging

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

/ Whether welding technology, photovoltaics or battery charging technology – our goal is clearly defined: to be the innovation 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. Just as we've always done. The responsible use of our resources forms the basis of our corporate policy.

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



v02 Feb 2014 EN

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