

# FRONIUS GALVO

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



/ PC board replacement process



/ SnapINverter Technology



/ 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 <sup>1)</sup>	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 ( $U_{dc\ start}$ )	140 V			185 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 <sup>1)</sup>	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.				

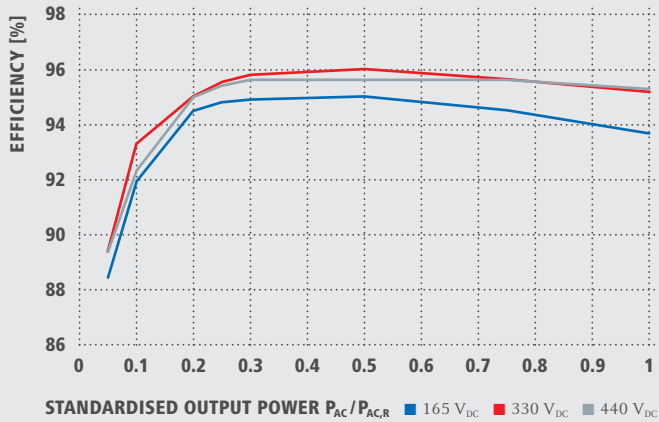
  

GENERAL DATA	GALVO 1.5-1	GALVO 2.0-1	GALVO 2.5-1	GALVO 3.0-1 <sup>1)</sup>	GALVO 3.1-1
Dimensions (height x width x depth)	645 x 431 x 204 mm				
Weight	16.4 kg			16.8 kg	
Degree of protection	IP 65				
Protection class	1				
Overvoltage category (DC / AC) <sup>2)</sup>	2 / 3				
Night-time consumption	< 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 <sup>2</sup> - 16 mm <sup>2</sup>				
AC connection technology	Screw terminal connection 2.5 mm <sup>2</sup> - 16 mm <sup>2</sup>				
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				

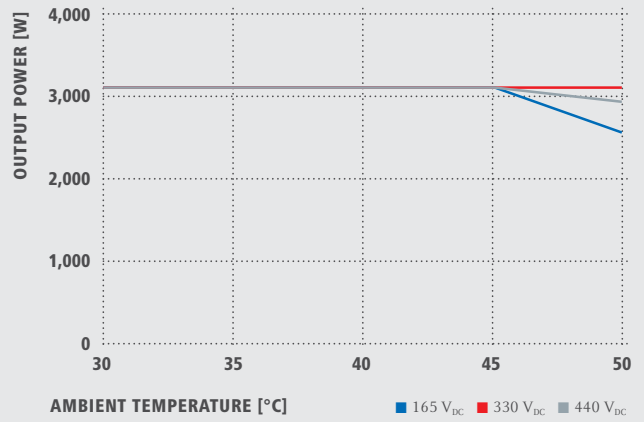
<sup>1)</sup> Available for countries where 3 kW restrictions apply. <sup>2)</sup> Testing to IEC 62109-1.

Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://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 <sup>1)</sup>	GALVO 3.1-1
Max. efficiency	95.9 %	96.0 %		96.1 %	
European efficiency ( $\eta_{EU}$ )	94.5 %	94.9 %	95.2 %	95.4 %	95.4 %
$\eta$ at 5 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 10 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 20 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 25 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 30 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 50 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 75 % $P_{AC,R}$ <sup>2)</sup>	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 %
$\eta$ at 100 % $P_{AC,R}$ <sup>2)</sup>	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 <sup>1)</sup>	GALVO 3.1-1
DC insulation measurement		Warning/shutdown (depending on country setup) at $R_{ISO} < 600 \text{ k}\Omega$			
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 <sup>1)</sup>	GALVO 3.1-1
WLAN / Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)			
6 inputs and 4 digital inputs/outputs		Interface to ripple control receiver			
USB (A socket) <sup>3)</sup>		Datalogging, inverter update via USB flash drive			
2x RS422 (RJ45 socket) <sup>3)</sup>		Fronius Solar Net, interface protocol			
Signalling output <sup>3)</sup>		Energy management (floating relay output)			
Datalogger and Webserver		Included			
RS485 <sup>4)</sup>		Modbus RTU SunSpec or meter connection			

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

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