



Certification Entity for Renewable Energies

Product Certificate Number	11043-CER
Applicant:	FRONIUS ESPANA, S.L.U. Parque Industrial La Laguna. Calle Arroyo del Soto, 17. 28914. Leganés. Madrid. SPAIN
Series/	PV inverters PRIMO-1
Model/	PRIMO 3.0-1, PRIMO 3.5-1, PRIMO3.6-1, PRIMO 4.0-1, PRIMO 4.6-1, PRIMO 5.0-1, PRIMO 5.0-1 AUS, PRIMO 6.0-1, PRIMO 8.2-1
Type of generating unit	Photovoltaic Inverter
Technical Data	See page 2
Network connection rule	Nota de interpretación técnica de la equivalencia de la separación galvánica de la conexión de instalaciones generadoras en baja tensión. Edición 0.

The above-mentioned generating unit complies with the requirements of the: "Nota de interpretación técnica de la equivalencia de la separación galvánica de la conexión de instalaciones generadoras en baja tensión. Edición 0".

Place, Date: Madrid, 30th of July of 2015

Miguel Martinez Lavin
Certification Manager



Certification Entity for Renewable Energies

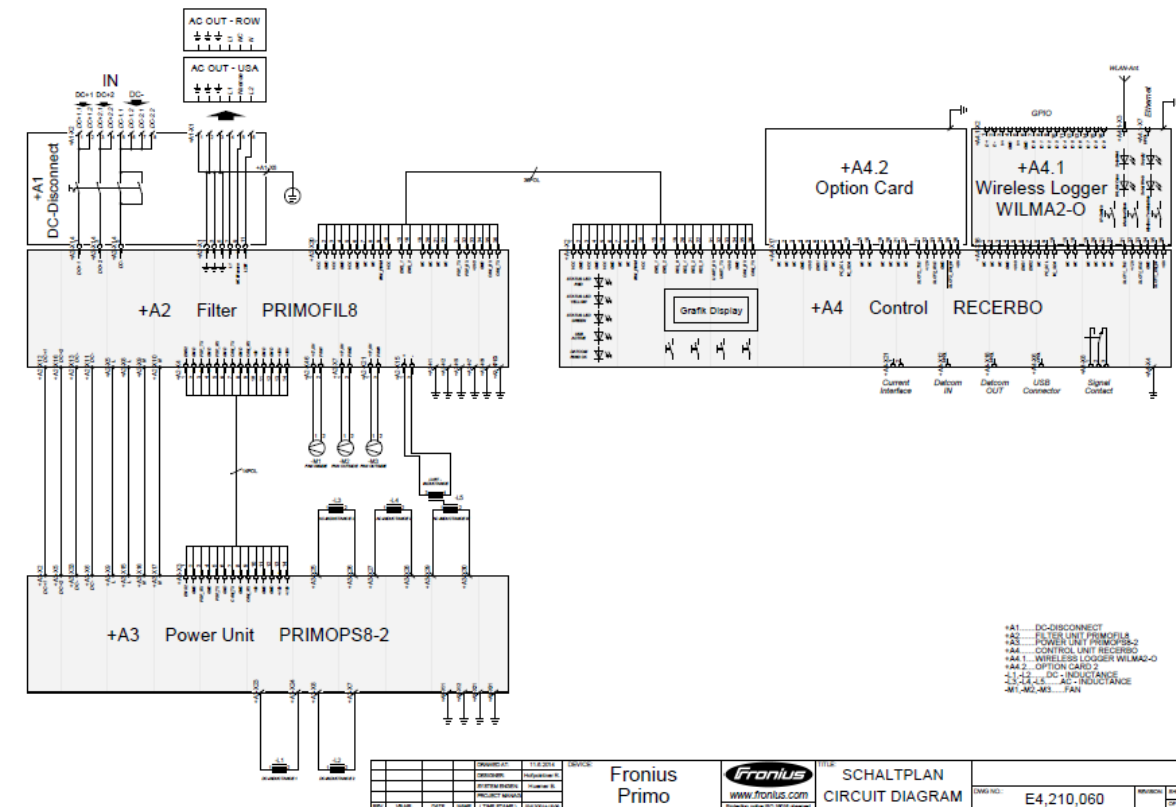
	PRIMO 3.0-1	PRIMO 3.5-1	PRIMO 3.6-1	PRIMO4.0-1	PRIMO 4.6-1
INPUT DATA					
Max. input current ($I_{DC\ MAX1} / I_{DC\ MAX2}$)	12.0 A/12.0 A				
Max. array short circuit current (MPP ₁ /MPP ₂)	18.0 A/18.0 A				
Min. input voltage ($U_{DC\ MIN}$)	80 V				
Feed-in start voltage ($U_{DC\ start}$)	80 V				
Nominal input voltage ($U_{DC, r}$)	700 V				
Max. input voltage ($U_{DC\ MAX}$)	1000V				
MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$)	200-800 V			210-800 V	240-800 V
Number of MPP trackers	2				
Number of DC connections	2+2				
OUTPUT DATA					
AC nominal output ($P_{AC, r}$)	3000 W	3500 W	3680 W	4000 W	4600 W
Max output power	3000 VA	3500 VA	3680 VA	4000 W	4600 W
AC output current ($I_{AC\ NOM}$)	13.0 A	15.2 A	16.0 A	17.4 A	20.0 A
Grid connection (voltage range)	1-NPE 220 V / 230 V (180 V – 270 V)				
Frequency (frequency range)	50 Hz / 60 Hz (45-65 Hz)				
Total harmonic distortion	< 5%				
Power factor ($\cos\phi_{AC, r}$)	0.85 – 1 ind /cap				
GENERAL DATA					
Degree of protection	IP 65				
Protection class	1				
Overvoltage category (DC/AC)	2/3				
Inverter Design	Transformerless				
Cooling	Regulated air cooling				
Installation	Indoor and outdoor installation				
Ambient temperature range	-40 – 55°C				
Permitted humidity	0-100%				
DC connection technology	2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm ²				
Mains connection technology	3-pole AC screw terminals 2.5-16 mm ²				
Dimensions (height, width, depth)	645 x 431 x 204 mm				
PROTECTIVE DEVICES					
DC insulation measurements	Yes				
Overload behaviour	Operating point shift. Power limitation				
DC disconnecter	Yes				



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	PRIMO 5.0-1	PRIMO 5.01 AUS	PRIMO 6.01	PRIMO 8.2-1
INPUT DATA				
Max. input current ($I_{DC\ MAX1} / I_{DC\ MAX2}$)	12.0 A/12.0 A	18.0 A/18.0 A		
Max. array short circuit current (MPP ₁ /MPP ₂)	18.0 A/18.0 A	27.0 A/27.0 A		
Min. input voltage ($U_{DC\ MIN}$)	80 V			
Feed-in start voltage ($U_{DC\ start}$)	80 V			
Nominal input voltage ($U_{DC, r}$)	700 V			
Max. input voltage ($U_{DC\ MAX}$)	1000V			
MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$)	270-800 V			270-800 V
Number of MPP trackers	2			
Number of DC connections	2+2			
OUTPUT DATA				
AC nominal output ($P_{AC, r}$)	5000 W	4600 W	6000 W	8200 W
Max output power	5000 W	5000 W	6000 W	8200 W
AC output current ($I_{AC\ NOM}$)	21.7 A	21.7 A	26.1 A	35.7 A
Grid connection (voltage range)	1-NPE 220 V / 230 V (180 V – 270 V)			
Frequency (frequency range)	50 Hz / 60 Hz (45-65 Hz)			
Total harmonic distortion	< 5%			
Power factor ($\cos\phi_{AC, r}$)	0.85 – 1 ind /cap			
GENERAL DATA				
Degree of protection	IP 65			
Protection class	1			
Overvoltage category (DC/AC)	2/3			
Inverter Design	Transformerless			
Cooling	Regulated air cooling			
Installation	Indoor and outdoor installation			
Ambient temperature range	-40 – 55°C			
Permitted humidity	0-100%			
DC connection technology	2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm ²			
Mains connection technology	3-pole AC screw terminals 2.5-16 mm ²			
Dimensions (height, width, depth)	645 x 431 x 204 mm			
PROTECTIVE DEVICES				
DC insulation measurements	Yes			
Overload behaviour	Operating point shift. Power limitation			
DC disconnecter	Yes			

Electrical Diagram of PV inverters PRIMO-1 series:



Manufacturer:

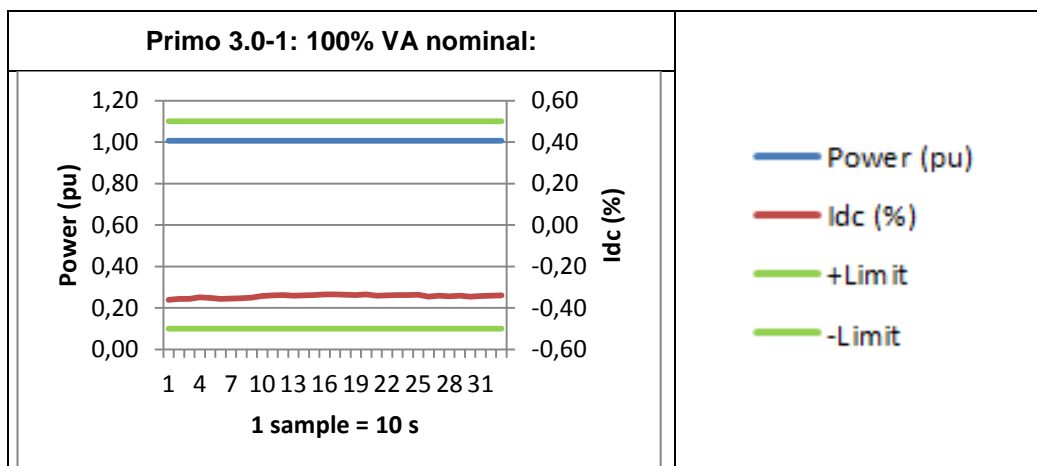
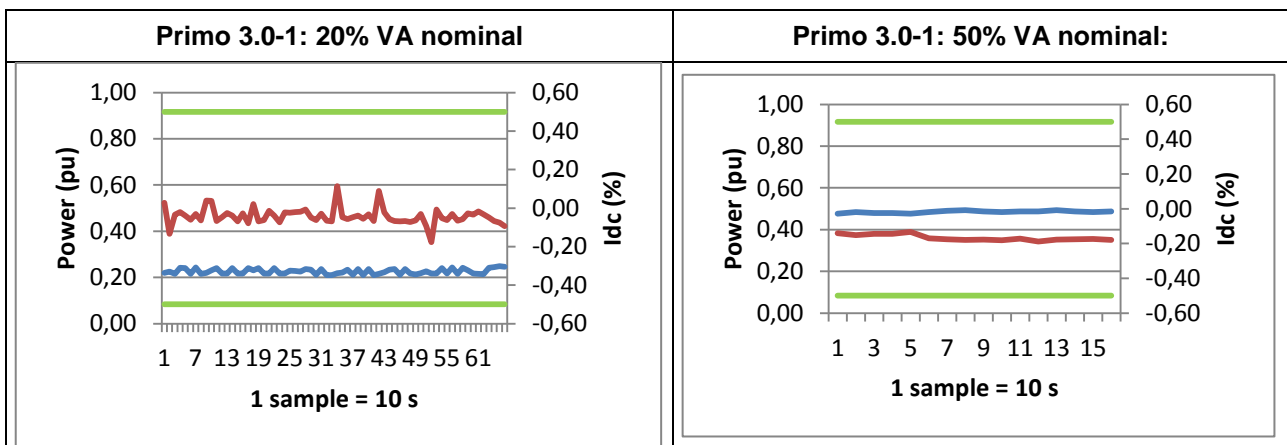
Fronius International GmbH
 Froniusplatz 1
 4600 Wels
 Austria

The models included in this certificate are covered by the models tested due the similar electrical and software characteristics.

PRIMO 3.0-1:

DC Current injected to the grid:

Power (% VA nominal)	(20 <P<30)	(40<P<60)	(80<P<100)	
W	0,67 kW	1,46 kW	3,02 kW	
Vrms	221,60 V	222,27 V	223,65 V	
Arms	3,14 A	6,63 A	13,48 A	
Cos φ	0,975	0,993	0,997	
CC (m A)	-0,0055 A	-0,0229 A	-0,0442 A	LIMIT
CC (% In)	-0,04%	-0,16%	-0,32%	± 5 % In



PRIMO 8.2-1:

DC Current injected to the grid:

Power (% VA nominal)	(20 <P<30)	(40<P<60)	(80<P<100)	
W	1,89 kW	4,57 kW	6,93 kW	
Vrms	223,28 V	225,70 V	227,27 V	
Arms	8,51 A	20,15 A	30,47 A	
Cos φ	0,996	0,998	0,998	
CC (m A)	-0,0350 A	-0,0647 A	-0,0754 A	LIMIT
CC (% In)	-0,098%	-0,18%	-0,21%	± 5 % In

