






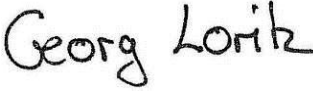
**BUREAU  
VERITAS**

# TEST REPORT SUMMARY

## Nota de interpretación técnica de la equivalencia de la separación galvanica de la conexión de instalaciones Generadoras en baja tension

### Sobre conexión de instalaciones fotovoltaicas a la red de baja tensión

Report reference number .....	14TH0397-DC-Injection_SUM_0	
Date of issue .....	2015-03-04	
Total number of pages .....	6	
Testing laboratory name .....	<b>Bureau Veritas Consumer Products Services Germany GmbH</b>	 <b>DAkkS</b> Deutsche Akkreditierungsstelle D-PL-12024-03-01
Address .....	Businesspark A96 86842 Türkheim Germany	
Applicant's name .....	<b>SMA Solar Technology AG</b>	
Address .....	Sonnenallee 1, 34266 Niestetal	
<b>Test specification</b>		
Standard.....	Nota de interpretación técnica de la equivalencia de la separación galvanica de la conexión de instalaciones Generadoras en baja tension	
<b>Certificate.....</b>	<b>Certificate of compliance</b>	
Test report form number .....	DC-Injection	
Master TRF .....	Bureau Veritas Consumer Products Services Germany GmbH	
<b>Test item description .....</b>	<b>Grid-tied photovoltaic inverter</b>	
Trademark.....		
Model / Type .....	SB1.5-1VL-40, SB2.5-1VL-40	
<b>Ratings .....</b>	<b>SB1.5-1VL-40</b>	<b>SB2.5-1VL-40</b>
MPP DC voltage range [V].....	160 - 500	260 - 500
Input DC voltage range [V].....	50 - 600	50 - 600
Input DC current [A] .....	10	10
Output AC voltage [V] .....	230	230
Output AC current [A].....	7	11
Output power [VA].....	1500	2500

<b>Testing Location .....</b>	<b>Bureau Veritas Consumer Products Services Germany GmbH</b>
<b>Address .....</b>	Businesspark A96, 86842 Türkheim, Germany
<b>Tested by (name and signature) .....</b>	Alastair Schmid 
<b>Approved by (name and signature) .....</b>	Georg Loritz 
<b>Manufacturer's name .....</b>	<b>SMA Solar Technology AG</b>
<b>Factory address .....</b>	Sonnenallee 1, 34266 Niestetal

<b>Document History</b>			
<b>Date</b>	<b>Internal reference</b>	<b>Modification / Change / Status</b>	<b>Revision</b>
2015-03-04	Alastair Schmid	Initial report was written	0
Supplementary information:			

### Test items particulars

Equipment mobility..... : Permanent connection  
Operating condition..... : Continuous  
Class of equipment ..... : Class I  
Protection against ingress of water.. : IP65 according to EN 60529  
Mass of equipment [kg]..... : 9,2

### Test case verdicts

Test case does not apply  
to the test object..... : N/A  
Test item does meet  
the requirement..... : P(ass)  
Test item does not meet  
the requirement..... : F(ail)

### Testing

Date of receipt of test item ..... : 2014-11-20  
Date(s) of performance of test ..... : 2015-03-04

### General remarks:

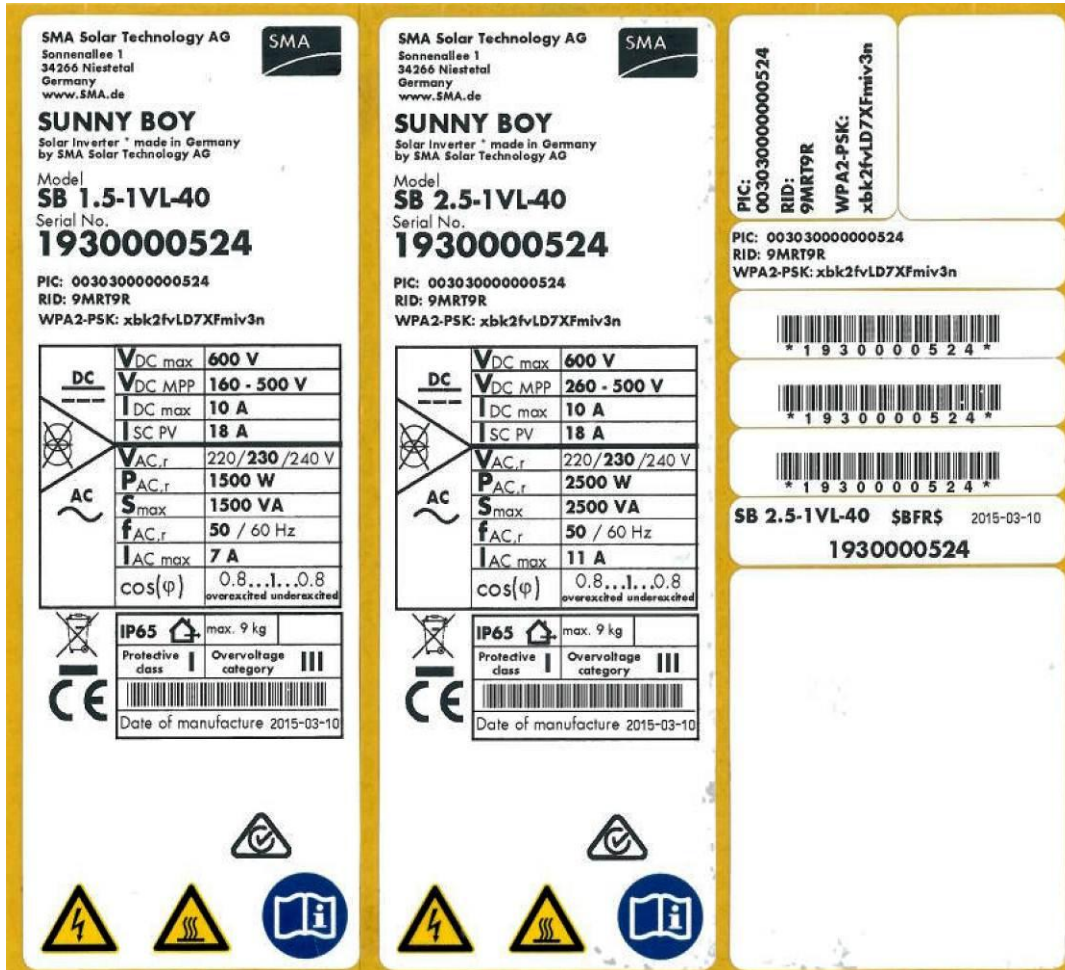
The test result presented in this report relate only to the object(s) tested.  
The report shall state compliance of the tested objects with the requirements of NOTA DE INTERPRETACIÓN TECNICA DE LA EQUIVALENCIA DE LA SEPARACIÓN GALVÁNICA DE LA CONEXIÓN DE INSTALACIONES GENERADORAS EN BAJA TENSIÓN.  
This report must not be reproduced in part or in full without the written approval of the issuing testing laboratory.  
"(see Annex #)" refers to additional information appended to the report.  
"(see appended table)" refers to a table appended to the report.  
Throughout this report a comma is used as the decimal separator.

### This Test Report consists of the following documents:

1. Test Results
2. Annex No. 1 – Pictures of the unit
3. Annex No. 2 – Test equipment list

Copy of marking plates:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



**General product information:**

Dimension of EUT: 460 by 357 by 122 mm.

The Solar converter converts DC voltage into AC voltage.

The unit is providing EMC filtering at the output toward mains. The unit does not provide galvanic separation from input to output (transformer). The output is switched off redundant by the high power switching bridge and a two relays. This assures that the opening of the output circuit will also operate in case of one error.

PCB versions: PH-AST23.02 Ver.R3

Software version: 2.02.05.R

Serial number EUT: 1930000330

**Description of the electrical circuit:**

PV-FT-CF-C connectors are provided to connected the photovoltaic source The DC input is routed through a DC switch which can disconnect all "+" and "-" paths simultaneously. An EMC filter consisting of x-, y-capacitors and an inductance is provided to remove distortions coming from the inverter to the PV side. The input current is measured via current sensors. The step up converters consist of inductances, transistors and diodes which increase the DC input voltage to the DC link which consists of electrolytic capacitors in series and in parallel. The sine wave is generated from the IGBT bridges which receive a PWM signal from the internal processor. The generated sine is smoothed by inductances and routed through redundant relay contacts in each line to the output filter. For safety purposes a fault current and earth leakage monitoring is provided. The EMC filter consists of x-, y-capacitors and inductances.

## Test report

NOTA DE INTERPRETACIÓN TÉCNICA DE LA EQUIVALENCIA DE LA SEPARACIÓN GALVÁNICA DE LA CONEXIÓN DE INSTALACIONES GENERADORAS EN BAJA TENSIÓN		
Article	Test	Result
14	Type test:	
14	Monitoring of DC-Injection	P