



ENGINEERING RECOMMENDATION G83/1

CERTIFICATE & SAFETY - R&D

TR10001-1

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APPENDIX 4 TYPE VERIFICATION TEST SHEET

SSEG DETAILS

SSEG Type reference:		SolarRiver 3000TL	
SSEG Technology:		Photo voltaic (Annex C)	
Manufacturer:	Tel: +86-510-83593132-8061	Address:	
Samil Power Co.,Ltd.	Fax: +86-510-83593136	No.66 Taihangshan Road, Suyu Economic Development Zone, Suqian City, Jiangsu Province,P.R.China	
Technical file reference No.:			
Maximum export capability (SSEG rating less parasitic load)		2800W	

TEST HOUSE DETAILS

Name and address of test house	Samil Power Co., Ltd. R&D (Wuxi) Laboratories Rm 1312, No 18-1, Wenhui Rd, Huishan District, Wuxi, 214174, Jiangsu Province, P. R. China
Telephone number	+86-510-83593132-8061
Facsimile number	+86-510-83593136
E-mail address	yangkunjin@samilpower.com

Test details

Date of test	09.01.2011
Name of test Engineer	Yang kunjin
Signature of test Engineer	<i>Yang Kunjin</i>
Approval Manager	<i>Peter Ceni</i>



1. POWER QUALITY

Harmonic current emissions (A)								
Maximum permissible harmonic current as per BS EN 61000-3-2 Class A								
Harmonic	2 nd	3 rd	5 th	7 th	9 th	11 th	13 th	15 th - 39 th
Limit	1,08	2,3	1,14	0,77	0,4	0,33	0,21	0,15x(15/n)
Test value	0,044	0,1038	0,0962	0,0837	0,0919	0,1043	0,0739	0,0164

Voltage Fluctuations and Flicker				
Maximum permissible Voltage fluctuations and flicker as per BS EN 61000-3-2 Class A				
	Starting	Stopping	Running	
Limit	4%	4%	Pst = 1,0	Plt = 0,65
Test value	< 2%	< 2%	0,08	0,064

	DC Injection			Power factor		
Protection Limit	20mA, tested at three power levels*			0,95 lag-0,95 at three voltage levels		
	10%	55%	100%	212 V	230 V	248 V
Test value	Max. 10.28mA	Max. 16.21mA	Max. 15.32mA	0,998	0,998	0,998

*Indicative values are shown for minimum, medium and maximum power levels

2. UNDER / OVER FREQUENCY TESTS

	Under Frequency		Over Frequency	
Parameter	Frequency (Hz)	Time (s)	Frequency (Hz)	Time (s)
G83/1 Limit	47 Hz	0,5 sec	50,5 Hz	0,5 sec
Actual setting	47.01Hz	---	50,49 Hz	---
Trip value	47,01Hz	92 ms	50,49H	68ms



3. UNDER / OVER VOLTAGE TESTS

SSEG is configured to comply with the lower over voltage trip value.

Parameter	Under Voltage		Over Voltage	
	Voltage (V)	Time (s)	Voltage (V)	Time (s)
G83/1 Limit	207 V	1,5 sec	264 V	1,5 sec
Actual setting	209V	---	262 V	---
Trip value	209V	77 ms	262V	78 ms

4. LOSS OF MAINS TEST

According G83/1 requirements

Method used	Frequency shift		
Output power %	10%	55%	100%
Actual setting	---	---	---
Trip value	<0,2s	<0,4s	<0,3s

*indicative values are shown for minimum, medium and maximum power levels.

5. RECONNECTION TIMES

SSEG is configured to comply with the higher reconnection trip value.

Parameter	Under/Over voltage	Under/Over Frequency	Loss of mains
Minimum value	180 seconds	180 seconds	180 seconds
Actual setting	180 seconds	180 seconds	180 seconds
Recorded value	180 seconds	180 seconds	180 seconds



6. FAULT LEVEL CONTRIBUTION

As Photovoltaic SSEG's are inverter connected, they are deemed to automatically comply with regulations and no further tests are required.

7. SELF MONITORING – SOLID STATE SWITCHING

No applicable as electro-mechanical relay are used.