

Certificate G83/1

The results of the G83/1 tests are summarized in this certificate.

Power-One Italy S.p.a. declares that the units shipped to the UK are characterized by the following features:

- The internal specification and parameters are set to be compliant with G83/1 engineering requirements.
- All units have identical internal parameter setting.
- These parameters cannot be changes by a user, an installer or by any person other than the manufacturer.
- All units are tested before shipping according to G83/1 engineering specification.

SSEG DETAILS

SSEG Type Reference:	PHOTO-VOLTAIC GRID TIED INVERTER
SSEG Model Reference:	PVI-3.0-OUTD-UK PVI-3.6-OUTD-UK PVI-4.2-OUTD-UK
SSEG Technology (as per Annex):	ANNEX C. PHOTOVOLTAIC (PV)
Manufacturer:	Power-one Italy S.p.A.
Telephone number:	+39-055-91951
Fax number:	+39-055-9195248
Address	Via S. Giorgio, 642 52028 Terranuova Bracciolini Arezzo - Italy
Maximum export capability (SSEG rating less parasitic load)	3300W (PVI-3.0-OUTD-UK) 4000W (PVI-3.6-OUTD-UK) 4600W (PVI-4.2-OUTD-UK)
Nominal Output AC Power	3000W (PVI-3.0-OUTD-UK) 3600W (PVI-3.6-OUTD-UK) 4200W (PVI-4.2-OUTD-UK)

TEST HOUSE DETAILS

Name:	Power-one Italy S.p.A. - R.& D. Department
Address:	Via S. Giorgio 642, 52028 Terranuova Bracciolini, Arezzo - Italy
Telephone number:	+39-055-91951
Fax number:	+39-055-9195248
E-mail address	service@power-one.com

TEST RESULTS SUMMARY

Power Quality:

- Harmonic Current Emission as per BS EN 61000-3-2, Class A
- Voltage Fluctuation and Flickers as per BS 61000-3-3
- DC Injection
- Power Factor

Under/Over Frequency Tests

Under/Over Voltage Tests

Reconnection Times

Loss of Mains Test

Power-One Italy S.p.a.

Terranuova Bracciolini, 27 April 2010



Robert White

(Director Safety & Environmental Compliance)

G83/1 TEST RESULTS DETAILS – TYPE VERIFICATION TEST SHEET

POWER QUALITY

Harmonic Current Emission 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 [A]	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 x (15/n)
Test Value [A]	0.05	0.3	0.1	0.1	0.07	0.06	0.04	0.03

Voltage Fluctuation and Flicker as per BS EN 61000-3-3				
	Starting	Stopping	Running	
Limit	4%	4%	P _{st} =1.0	P _{it} =0.65
Test Value	2.542	2.542	0.573	0.420

	DC injection			Power Factor		
G83/1 Limit	20mA, tested at three power levels			0.95 lag – 0.95 lead at three voltage levels		
Test Level	10%	55%	100%	215 Vac	230Vac	255Vac
Test Value	-4	-1	3	>0.99	>0.99	>0.99

UNDER/OVER FREQUENCY TESTS

Parameter	Under Frequency		Over Frequency	
	Frequency	Time	Frequency	Time
G83/1 Limit	47 Hz	0.5 (5.0) sec	50.5 Hz	0.5 (5.0) sec
Actual setting	47.05 Hz	0.320 sec	50.45 Hz	0.320 sec
Trip value	>47.05 Hz	<0.4 sec	<50.47 Hz	<0.4 sec

UNDER/OVER VOLTAGE TESTS

Parameter	Under Voltage		Over Voltage	
	Voltage	Time	Voltage	Time
G83/1 Limit	207 V	1.5 (5.0) sec	264 V	1.5 (5.0) sec
Actual setting	211.6 V	1.3 sec	259.2 V	1.3 sec
Trip value	>211.3	<1.34 sec	<259 V	<1.33 sec

RECONNECTION TIMES

	Under/Over voltage	Under/Over Frequency	Loss of Main
Minimum Value	180 sec	180 sec	180 sec
Actual setting	180 sec	180 sec	180 sec
Recorded value	>186 sec	>188 sec	>188 sec

LOSS OF MAIN TESTS

Method used	Rate Of Change Of Frequency and Active Power Variation		
	10%P _{rated}	55%P _{rated}	100%P _{rated}
G83/1 Limit	0.5 (5.0) sec	0.5 (5.0) sec	0.5 (5.0) sec
Trip setting	1 sec	1 sec	1 sec
Trip value	<3 sec	<3 sec	<3 sec

SSEG Short Circuit Current Contribution Test

According to Clause C.4.6, as Photovoltaic SSEGs are inverter connected, they are deemed to automatically comply with regulations and no further tests are required.

SELF MONITORING – SOLID STATE SWITCHING

Not applicable because electro-mechanical relays are used

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