

Certificate G83/1



Engineering Recommendation

Manufacturer: Jiangsu Eversolar New Energy CO., LTD.
Address: Building 9 No.198 Xiangyang Road,Suzhou
Postal code,place: 215011
Country: China

Test house details: Jiangsu Eversolar New Energy CO., LTD.
R&D Department,Suzhou

Type reference: Eversolar string Inverter
TL1500AS/TL2000AS

Max.AC power: 1650W/2000W

Nominal AC power: 1500W/2000W

The results of the G83/1 tests are summarized in this certificate.Eversolar declares hereby that all units shipped to the UK are within the specifications and parameters set by the G83/1 engineering recommendation.These settings cannot be changed by an installer,user or by any person other than Eversolar. Complete documentation on test details are available at Eversolar on demand.

Test details

Power quality

Hamrmonic current emissions as per BS EN 61000-3-2 A

Voltage fluctuations and flicker as per BS EN 61000-3-3 A

DC injection / Power ficator

Under / Over frequency switch off

Under / Over voltage switch off

Loss of mains test

Jiangsu Eversolar New Energy CO., LTD.

Suzhou,23-03-2010.

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Director of R&D Grid-connected Inverter Technology

Test results

I. POWER QUALITY

Harmonic current emissions as per BS EN 61000-3-2-Class A								
Harmonic	2nd	3rd	5th	7 th	9th	11th	13th	15th...39th
Limit (Amp.)	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 x (15/n)
Test value	0.039	0.015	0.025	0.009	0.016	0.015	0.017	<limit BS EN 61000-3-2
% of fund.	0.220	0.086	0.140	0.051	0.089	0.086	0.096	0.221

Voltage fluctuations and Flicker as per BS EN 61000-3-3 Class A				
Harmonic	Starting	Stopping	Running	
Limit	4%	4%	Pst = 1.0	Pit = 0.65
Test value	<1.7%	<2.1%	0.482	0.466

G83/1 limit	DC injection			Power Factor		
	Test level	10%	50%	100%	212V	230V
Test value	12.9mA	14.3mA	16.5mA	0.9993	0.9989	0.9983

2. UNDER / OVER FREQUENCY SWITCH OFF

Parameter	Under Frequency Switch Off						Over Frequency Switch Off					
	Frequency [Hz]			Time [s]			Frequency [Hz]			Time [s]		
G83/1 limit	47 Hz			0.5s			50.5 Hz			0.5s		
Output power	10%	50%	100%	10%	50%	100%	10%	50%	100%	10%	50%	100%
Actual setting	47.03 Hz	47.03 Hz	47.03 Hz	0.2s	0.2s	0.2s	50.47 Hz	50.47 Hz	50.47 Hz	0.2s	0.2s	0.2s
Trip value	47.03Hz	47.03Hz	47.03Hz	101.2ms	102.8ms	186.2ms	50.48Hz	50.48Hz	50.48Hz	94ms	95.8ms	86ms

3. UNDER / OVER VOLTAGE SWITCH OFF

Parameter	Under Voltage Switch Off						Over Voltage Switch Off					
	Voltage [V]			Time [s]			Voltage [V]			Time [s]		
G83/1 limit	207V			1.5s			264V			1.5s		
Output power	10%	50%	100%	10%	50%	100%	10%	50%	100%	10%	50%	100%
Actual setting	210V	210V	210V	0.1s	0.1s	0.1s	261V	261V	261V	0.1s	0.1s	0.1s
Trip value	211V	211V	211V	76.8ms	77.5ms	76.8ms	262V	262V	262V	77ms	77.2ms	77.6ms

4. LOSS OF MAINS TEST

Method used	Frequency shift		
Output power level	10%Prated	50%Prated	100%Prated
G83/1 limit	0.5s	0.5s	0.5s
Trip setting	0.5s	0.5s	0.5s
Trip value	411ms	472ms	465ms

5. RECONNECTION TIME MEASUREMENT

Reconnection time	Under/over Voltage	Under / over Frequency	Loss of Mains
Minimum value	180s	180s	180s
Actual setting	180s	180s	180s
Recorded value	185s	185s	185s

6. FAULT LEVEL CONTRIBUTION

As Photovoltaic SSEGs are inverter connected, they are deemed to automatically comply with regulations and no further tests are required

7. SELF MONITORING - SOLID STATE SWITCHING

Not applicable as electro-mechanical relays are used