



Ningbo Ginlong Technologies Co.,Ltd.

## CERTIFICATION OF CONFORMITY

**Manufacturer:** Ningbo Ginlong Technologies Co., Ltd.

No.57 jintong Road,Seafront(Binhai)Industrial park,Xiangshan  
Demonstration Industrial  
Estate,Xiangshan,Ningbo,Zhejinag,315712,P.R.China

**Product:** Automatic disconnection device between a generator and the public low-voltage grid

**Model:** Solis-mini-3600-4G , Solis-mini-3000-4G , Solis-mini-2500-4G,  
Solis-mini-2000-4G, Solis-mini-1500-4G, Solis-mini-1000-4G,  
Solis-mini-700-4G,

### Use in accordance with regulations:

Automatic disconnection device with single-phase mains surveillance in accordance with EN 50438 for photovoltaic systems with a single-phase parallel coupling via an inverter in the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter. This serves as a replacement for the disconnection device with isolating function that can access the distribution network provider at any time.

### Applied rules and standards :

The result according to EN 50438:2013 for Ireland.  
The safety concept of an aforementioned representative product corresponds at the time of issue of this certificate of valid safety specifications for the specified use in accordance with regulations.

**Certificate Number:** GLDQ170802

**Date:** 2017-08-18

**Valid until:** 2022-08-17

宁波锦浪新能源科技有限公司  
NINGBO GINLONG TECHNOLOGIES CO., LTD.

**Date and place**  
Ningbo  
2017-08-18

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## Power quality

Harmonic current emissions								
	EVS-EN 61000-3-2 Limit (A)							
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	15th ≤ n ≤ 39th
Limit	1,08	2,3	1,14	0,77	0,4	0,33	0,21	0,15·(15/n)
Test value	0.11	0.25	0.15	0.13	0.21	0.05	0.03	<limits BS EN 61000-3-2A
Voltage fluctuation and flicker								
Maximum permissible voltage fluctuation (expressed as percentage of nominal voltage at rated poHer) and flicker (standard EVS-EN 61000-3-3)								
	Starting		Stopping		Running (at rated poHer)			
Limit	3,3 %		3,3 %		$P_{st} = 1,0$		$P_{lt} = 0,65$	
Test value	<1%		<1%		0.05		0.08	
Power factor								
EN 50438 limit	+ 0,95 -0,95 at three voltage levels							
Test level (AC voltage)	210 V			230 V			250 V	
Test value(at rated power)	0.998			0.999			0.999	

## Under / Over frequency tests

Parameter	Under frequency		Over frequency	
	Frequency	Time	Frequency	Time
Protection limit	47.0 Hz	0.5 s	51.0 Hz	0.5 s
Actual setting	47.0 Hz	0.5s	51.0 Hz	0.5 s
Trip value (test result)	47.0 Hz	0.44s	51.0 Hz	0.45 s

## Under / Over voltage tests (single stage protection)

Parameter	Under voltage		Over voltage	
	Voltage	Time	Voltage	Time
Protection limit	230V-15%	1.5 s	230+15%	0.2 s
Actual setting	195.5	1.5 s	264.5	0.2 s
Trip value (test result)	195	1.45	264	0.17 s

## Fault level contribution

Short-circuit current at micro-generator terminals, 18A
Short-circuit applied to micro-generator at normal running condition 0 -2 s

## Comments

The test result is based on Solis-mini-3600-4G. All the series of inverters electrical character are the same. So the test result can cover all series.