

## DECLARATION OF EN50438 for Ireland

|                     |                            |                                                                                         |
|---------------------|----------------------------|-----------------------------------------------------------------------------------------|
| Manufacturer        | Name                       | NINGBO GINLONG TECHNOLOGIES CO., LTD.                                                   |
|                     | Address                    | NO. 57 JINTONG ROAD, BINHAI INDUSTRIAL PARK, XIANGSHAN, NINGBO, ZHEJIANG, 315712, CHINA |
| Product             | Product Name               | GRID-TIE PV INVERTER                                                                    |
|                     | Model                      | THREE PHASE INVERTER:<br>Solis-6K/ Solis-10K/ Solis-15K                                 |
| Applicable Standard | EN50438 : 2007 for Ireland |                                                                                         |

## Test result

### Test details

|                                |                                                   |
|--------------------------------|---------------------------------------------------|
| Name and address of test house | Ginlong technical Research and develop laboratory |
| Telephone number               | (+86) 574 6578 1607                               |
| Date of test                   | 2014.07.23                                        |

### Under-/Overfrequency tests

| Parameter                | Underfrequency |        | Overfrequency |        |
|--------------------------|----------------|--------|---------------|--------|
|                          | Frequency      | Time   | Frequency     | Time   |
| Protection limit         | 48 Hz          | 0.5 s  | 50.5 Hz       | 0.5 s  |
| Actual setting           | 48.1 Hz        | 0.4 s  | 50.4 Hz       | 0.4 s  |
| Trip value (test result) | 48.1 Hz        | 0.38 s | 50.41 Hz      | 0.41 s |

### Under-/Overvoltage tests (single-stage protection)

| Parameter        | Undervoltage |       | Overvoltage |       |
|------------------|--------------|-------|-------------|-------|
|                  | Voltage      | Time  | Voltage     | Time  |
| Protection limit | 207 V        | 0.5 s | 253 V       | 0.5 s |
| Actual setting   | 210 V        | 0.4 s | 250 V       | 0.4 s |

|                               |         |        |         |        |
|-------------------------------|---------|--------|---------|--------|
| Trip value (test result) L1-N | 209.4 V | 0.40 s | 249.8 V | 0.38 s |
| Trip value (test result) L2-N | 209.5 V | 0.41 s | 250.2 V | 0.39 s |
| Trip value (test result) L3-N | 209.9 V | 0.37 s | 249.7 V | 0.40 s |

#### LoM test

| ROCOF (df/dt)            | Neg. gradient |        | Pos. gradient |        |
|--------------------------|---------------|--------|---------------|--------|
| Parameter                | Min.          | Time   | Max           | Time   |
| Protection limit         | -0.4 Hz/s     | 0.5 s  | +0.4 Hz/s     | 0.5 s  |
| Actual setting           | -0.4 Hz/s     | 0.4 s  | +0.4 Hz/s     | 0.4 s  |
| Trip value (test result) | -0.4 Hz/s     | 0.38 s | +0.4 Hz/s     | 0.41 s |

The product stated above have been achieved and processed to the fullness examination according to EN50438 : 2007 for Ireland.

Manufacture Stamp

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

Date and place of issue

Ningbo

28. July. 2014

Zhangkun

Zhangkun

Information:

All modification to should be confirmed by Ginlong, otherwise this declaration will no longer valid.