

Appendix B – Manufacturer’s CLS Product Information

This form is available in a Microsoft Word version from the ENA’s website.

G100/2 - Form B - Compliance Verification Report for Customer Export or Import Limitation Schemes

This form shall be used by the Manufacturer to demonstrate and declare compliance with the requirements of EREC G100. The form can be used in a variety of ways as detailed below:

1. For Fully Type Tested status

The Manufacturer can use this form to obtain Fully Type Tested status for a CLS by registering this completed form with the Energy Networks Association (ENA) Type Test Register.

2. To obtain Type Tested status for a product

The Manufacturer can use this form to obtain Type Tested status for one or more Components which are used in a CLS by registering this form with the relevant parts completed with the Energy Networks Association (ENA) Type Test Register.

3. One-off Installation

The Installer can use this form to confirm that the CLS has been tested to satisfy the requirements of this EREC G100. This form shall be submitted to the DNO before commissioning.

A combination of (2) and (3) can be used as required, together with Form C where compliance of the CLS is to be demonstrated on site.

Note:

If the CLS is Fully Type Tested and registered with the Energy Networks Association (ENA) Type Test Register, Form C shall include the Manufacturer’s reference number (the Type Test Register system reference), and this form does not need to be submitted.

Where the CLS is not registered with the ENA Type Test Register or is not Fully Type Tested this form (all or in parts as applicable) shall be completed and provided to the DNO, to confirm that the CLS has been tested to satisfy all or part of the requirements of this EREC G100.

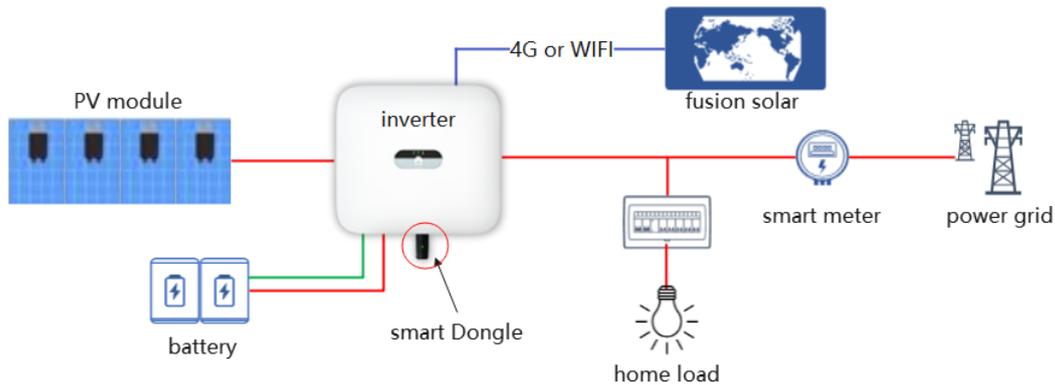
CLS Designation			
Manufacturer name		Huawei Technologies Co.,Ltd.	
Address		Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C	
Tel	0118 920 8008	Web site	https://solar.huawei.com/en
Email	Zhijian.huang@huawei.com		
Installer’s name			
Address			
Tel		Web site	
E:mail			

Export/Import capabilities

Export	Y	Import	Y
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Description of Operation

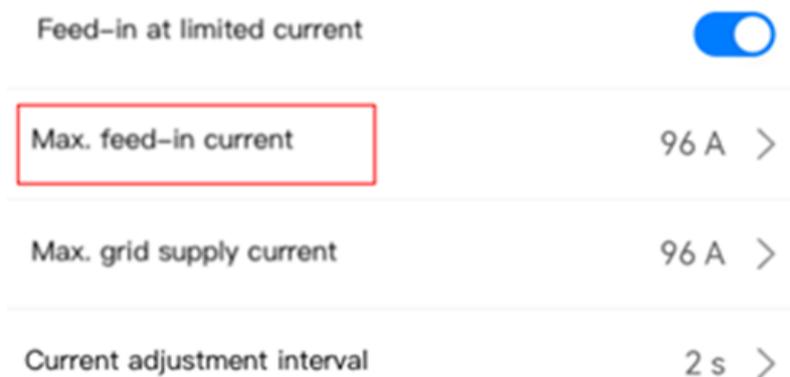
EREC G100 section 4.2 requires a description of the CLS, and schematic diagram, to be provided to the Customer. Please provide that description and the diagram here. **Error! Reference source not found.**



Photovoltaic modules convert sunlight into DC, and inverters convert DC into AC for household loads or directly to the power grid. The smart meter can obtain the inlet and outlet currents of the grid-tied point. The inverter controls the energy inlet and outlet of the grid-tied point based on the data fed back by the meter. so as not to exceed the MEL.

Users can obtain data through the Fusion Solar web page and mobile app.

How to set and control:



Enable the Feed-in at limited current in fusion solar app, you can set value to MAX. feed-in current , MAX. grid supply current and current adjustment interval. When the current exceeds the preset values, the inverter will adjust the current once in each adjustment interval. Ensure that the current is within the set value.

Communications Media

Document the provisions made for the use of various communication media, and both the inherent characteristics and the design steps made to ensure security and reliability.



Name	Type	Function	Information
SUN2000	Inverter	Convert DC to AC; Controls the energy input and output of the grid-tied point;	Huawei device
Dongle	communication module SDongleA-05(AP+STA)/SDongle B-06	Communication Between the SUN2000 and HUAWEI CLOUD	Huawei device
Router	Router	Internet available	Third-party device
Fusion solar	Huawei Cloud	Server	Huawei server
Fusion solar App	Huawei App	user interface	Huawei App
Meter	Huawei Smart Power Sensor	Measure the electrical parameters of the grid-tied point for system control.	Huawei device

- 1、 The inverter and smart meter communicate with each other using dedicated cables, and Modbus protocol.
- 2、 The only communication interface between the SUN2000 and external devices is the system monitoring device, which can be connected using Ethernet cables, Wi-Fi, or 4G as required.

Cyber Security

Confirm that the Manufacturer or Installer of the CLS has provided a statement describing how the CLS has been designed to comply with cyber security requirements, as detailed in section 4.7. **Error! Reference source not found.**

- 1、 The communication between dongle and Fusion Solar is protected by the SSL encryption technology.
- 2、 Huawei's cyber security assessment is based on the ETSI EN 303 645 standard.

We Huawei Technologies Co.,Ltd., declare that G100 certified products,

And the variant models to be included in the certification,

Are in compliance with Cyber security requirements in accordance with the standards:

- G98-1 and G99-1
- ETSI EN 303 645;
- Relevant aspects of PAS 1879 “Energy smart appliances – Demand side response operation – Code of practice”;

<ul style="list-style-type: none"> • Relevant aspects of Distributed Energy Resources-Cyber Security Connection Guidance published by BEIS and the ENA • Any other relevant standard that has been incorporated in the design of Power Generating Module
Power Quality Requirements
Where the CLS includes the power electronics that controls generation or loads (as opposed to the power electronics being included in Devices that are subject to their own power quality compliance requirements) please submit the harmonic and disturbance information here as required by EREC G5 and EREC P28.
Not applicable to our system as it is not a stand-alone device, and it works as a system.

Fail Safe		
CLS internal failure: please submit here the description of the internal Fail Safe design and operation. Please also document how it has been demonstrated, including the non-volatile recording of times and numbers of state 2 operations, and confirm the overall response of the CLS to this internal failure.		
The meter (CLS) communicates with the inverter through the Modbus protocol. If a communication fault occurs between the meter and the inverter, the inverter can detect the fault in real time and report the fault code. In addition, the CLS forcibly enters state 3 and shuts down the power output to ensure that the current at the grid-tied point does not exceed the MEL. If the inverter fails to adjust the MEL and the grid-tied current exceeds the MEL, the inverter records the event and saves it in the memory. The event will not be lost even if the power is off. Once the fault is rectified, the CLS and inverter reset to state 1.		
Communication and power supply failures between Components and Devices. Please document here compliance with EREC G100 section 5.5. Error! Reference source not found.		
Component/Device number/description	Communication failure test	Power supply failure test
The smart meter (CLS) SmartPS-100A-S0	PASS	PASS
Inverter SUN2000-2/3/3.68/4/4.6/5/6KTL-L1	PASS Remove/interrupt communication of between CLS and inverter(Inverter shown communication failure, which is forced into state3, if the issue fixed, inverter and CLS immediately reset into state1 operation)	PASS Inverter Power supply removed(Inverter shutdown immediately, if the issue fixed, inverter and CLS immediately reset into state1 operation)
Battery LUNA2000-5/10/15-S0	PASS	PASS

Operational Tests

In accordance with EREC G100 section 5.6 undertake the tests A to D to confirm correct operation in state 1 and state 2, that transition into state 3 occurs as required, and that behaviour in state 3 is also as required. **Error! Reference source not found.**

Test A

Nominal Export Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp: 10A

Nominal Import Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp: 10A

No	Starting level	Step value	CLS registers change in level?	CLS and/or Component and/or Device initiates correct response of $\geq 5\%$?	Duration of step in test	Correct state 1/state 2 operation
1	9.8A	10.3A	Yes	Yes	58s	1 > 2 > 1
2	9.8A	10.8A	Yes	Yes	58s	1 > 2 > 1
3	9.8A	11.7A	Yes	Yes	58s	1 > 2 > 1
4	9.8A	10.3A	Yes	Yes	58s	1 > 2 > 1
5	9.8A	10.8A	Yes	Yes	58s	1 > 2 > 1
6	9.8A	11.7A	Yes	Yes	58s	1 > 2 > 1

Test B

Nominal Export Limit: 10A

Nominal Import Limit 10A

No	Starting level	Step value	CLS registers change in level?	CLS and/or Component and/or Device initiates correct response of $\geq 5\%$?	Duration of step in test	Correct state 3 operation
7	9.8A	10.3A	Yes	Yes	62s	1 > 2 > 3
8	--	--	--	--	--	--

State 3 Reset

These tests are to demonstrate compliance with section EREC G100 4.5.2. **Error! Reference source not found.**

Please document how the reset from state 3 to state 1 has been demonstrated. Please include how the reset is achieved.

Please confirm that for CLSs to be installed in Domestic installations three (3) resets causes lockout or that for non-domestic installations lockout can only be reset after four hours. Please explain how lockout is reset.

1. After entering state 3, the system generates an alarm indicating that the power control of the grid-tied point is abnormal and the inverter enters the locked state.
2. Users or installers troubleshoot the system.
3. The installers performs reset settings through the app, and starts unlocking and enters state 1. At this time, the system displays Grid Connected, indicating that the system has returned to normal operation mode state 1.
4. If three resets occur, the system will remain locked until 30 days later.