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 Digital Power Technologies Co., Ltd.	
Address		Office 01, 39th Floor, Block A, Antuoshan Headquarters Towers, 33 Antuoshan 6th Road, Futian District, Shenzhen, 518043, P.R. China	
Tel		Web site	
E:mail			
Installer's name			
Address			
Tel		Web site	
E:mail			

Export/Import capabilities			
Export	Y	Import	Y

Description of Operation

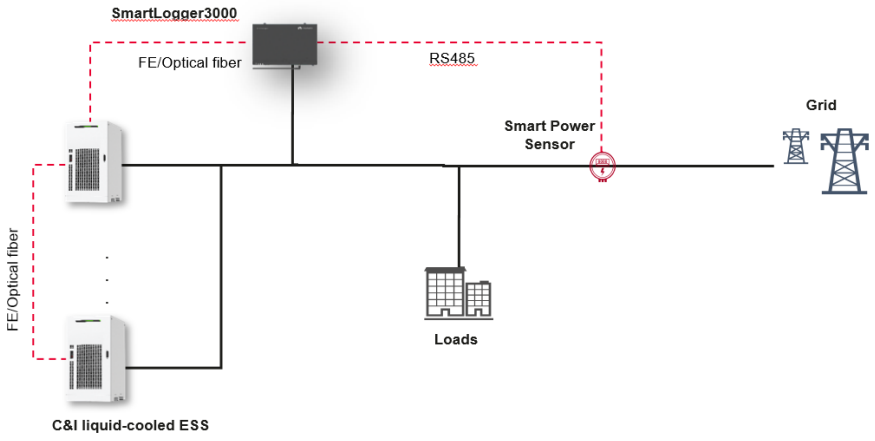
EREC G100 section 4.2 requires a description of the CLS, and schematic diagram, to be provided to the Customer. Please provide that description and the diagram here.

Huawei C&I PV and ESS solution includes 2 scenarios:

Scenario 1—C&I ESS System：Only applied to non-domestic installations. Smartlogger is used as the control subject of the CLS. The system may includes multi ESSs. Real-time communication and control between the SmartLogger and smart meters, and ESSs meet EREC G100 version 2 policy requirements.

Scenario 2—C&I PV and ESS System：Only applied to non-domestic installations. Smartlogger is used as the control subject of the CLS. The system may includes multi inverters and/or ESSs. Real-time communication and control between the SmartLogger and smart meters, inverters, and ESSs meet EREC G100 version 2 policy requirements.

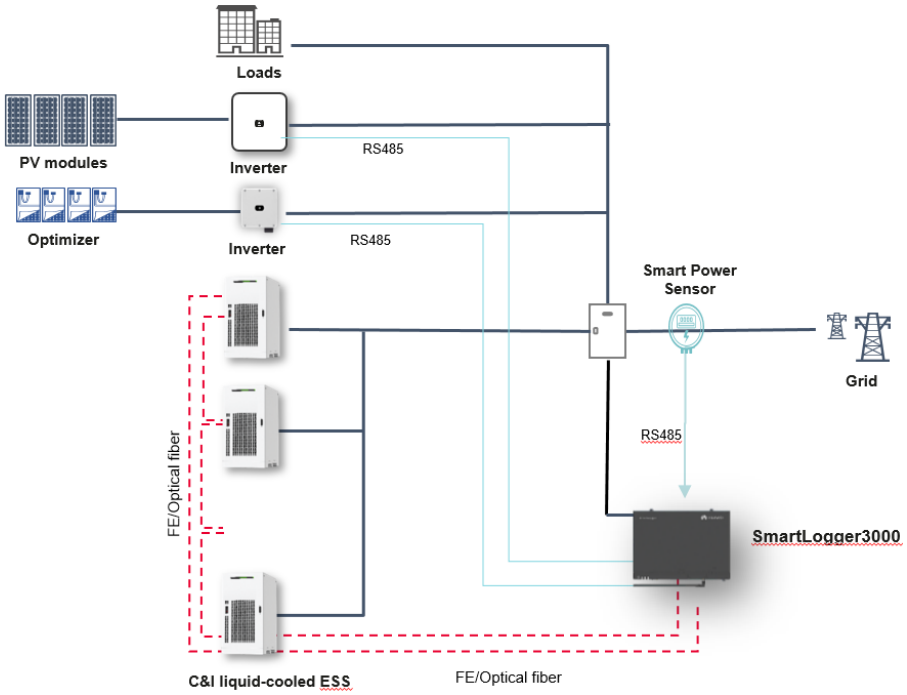
C&I ESS System



ESS can charge from power grid，and discharge for loads or directly to the power grid. The smart meter can obtain the inlet and outlet currents of the grid-tied point. The Smartlogger 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.

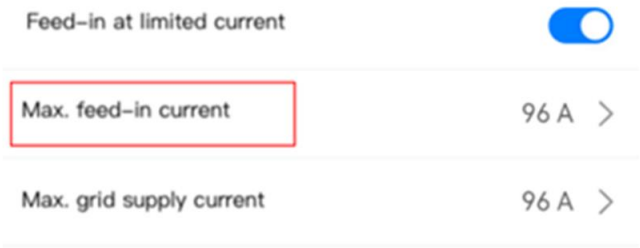
C&I PV and ESS System



PV modules convert sunlight into DC, and inverters convert DC into AC for loads or directly to the power grid. ESS can charge from power grid or PV system， and discharge for loads or directly to the power grid.The smart meter can obtain the inlet and outlet currents of the grid-tied point. The Smartlogger 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:

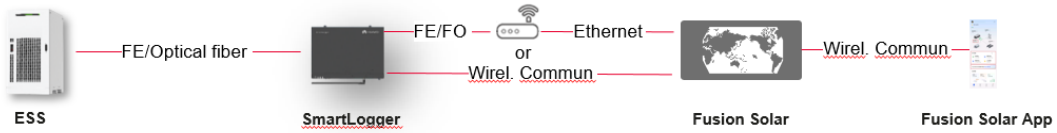


Enable the Feed-in at limited current in Fusion Solar app, you can set value to MAX. feed-in current , MAX. grid supply current. When the current exceeds the preset values, the inverter will adjust the current once in each adjustment interval. Ensure that the current is within the set value.

Communications Media

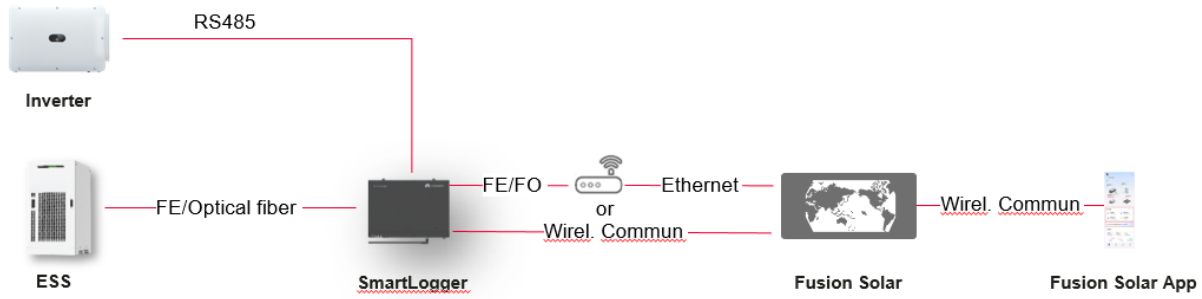
Document the provisions made for the use of various communication media, and both the inherent characteristics and the design steps made to ensure security and reliability.

C&I ESS System



Name	Type	Function	Information
ESS	Energy storage system LUNA2000-215-2S10	ESS: capable of storing energy to supply power at a later time	Huawei device
Smartlogger	Communication control module SmartLogger3000	Connects inverter, ESS to the Internet Controls the energy input and output of the grid-tied point;	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: SmartPS-80AI-T0	Measure the electrical parameters of the grid-tied point for system control.	Huawei device

C&I PV and ESS System



Name	Type	Function	Information
Inverter	Inverter SUN2000-30/36/40KTL-M3 SUN2000-100/115KTL-M2	Convert DC to AC; Controls the energy input and output of the grid-tied point;	Huawei device
ESS	Energy storage system LUNA2000-215-2S10	ESS: capable of storing energy to supply power at a later time	Huawei device
Smartlogger	Communication control module SmartLogger3000	Connects inverter, ESS to the Internet Controls the energy input and output of the grid-tied point;	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: SmartPS-80AI-T0	Measure the electrical parameters of the grid-tied point for system control.	Huawei device

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.

Huawei's cyber security assessment is based on the ETSI EN 303645 standard.

We Huawei Digital Power 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:

- ETSI EN 303 645

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.

C&I ESS System

The meter communicates with the smartlogger through the Modbus protocol. If a communication fault (including meter faults) occurs between the meter and the smartlogger, the smartlogger 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 smartlogger fails to adjust the MEL and the grid-tied current exceeds the MEL, the smartlogger 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 will automatically recover. In addition, communication failure occuring on several PCSs will lead to state 3 operation of these faulty PCSs, and effective operation of others. Non-volatile recording in Smartlogger guarantee automatic recovery of CLS，which implementation method is the same as that of Single Inverter System.

C&I PV and ESS System

The same communication failure protection mechanism occurs between the meter and SmartLogger including meter and Smartlogger fault,which causes fail safe operation of the whole CLS to ensure the feed-in current do not exceed MEL. In addition, communication failure occuring on several inverters/PCSs will lead to state 3 operation of these faulty inverters/PCSs, and effective operation of others. Non-volatile recording in Smartlogger guarantee automatic recovery of CLS， which implementation method is the same as that of Single ESS System.

Communication and power supply failures between Components and Devices. Please document here compliance with EREC G100 section 5.5.**错误!未找到引用源。**

Component/Device number/description	Communication failure test	Power supply failure test
C&I ESS System		
The smart meter SmartPS-80AI-T0	PASS	PASS
Smarterlogger Smartlogger3000	PASS	PASS
ESS LUNA2000-215-2S10	PASS	PASS
C&I PV and ESS System		
The smart meter SmartPS-80AI-T0	PASS	PASS
Smarterlogger Smartlogger3000	PASS	PASS
Inverter SUN2000-30/36/40KTL -M3 SUN2000-100/115KTL -M2	PASS	PASS
ESS LUNA2000-215-2S10	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.						
Test A						
Nominal Export Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp:						100A
Nominal Import Limit (for type tests this will be at maximum, minimum and one intermediate setting) in Amp:						100A
No	Starting • level	Step value	CLS registers change in level?	CLS and/or Component and/or Device initiates correct response of ≥ 5%?	Duration of step in test	Correct state 1/state 2 operation
1	95A	105 A	Yes	Yes	58s	1 > 2 > 1
2	95A	110A	Yes	Yes	58s	1 > 2 > 1
3	95A	120A	Yes	Yes	58s	1 > 2 > 1
4	95A	105A	Yes	Yes	58s	1 > 2 > 1
5	95A	110A	Yes	Yes	58s	1 > 2 > 1
6	95A	120A	Yes	Yes	58s	1 > 2 > 1
Test B						
Nominal Export Limit:						100A
Nominal Import Limit						100A
No	Starting level	Step value	CLS registers change in level?	CLS and/or Component and/or Device initiates correct response of ≥ 5%?	Duration of step in test	Correct state 3 operation
7	95A	105A	Yes	Yes	62s	1 > 2 > 3
8	--	--	--	--	--	--

State 3 Reset
These tests are to demonstrate compliance with section EREC G100 4.5.2.

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.
C&I ESS System 1. After entering state 3, the system generates an alarm indicating that the power control of the grid-tied point is abnormal and the ESSs 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 Normal, indicating that the system has returned to normal operation mode state 1. 4. C&I ESS System only applied to non-domestic installations, lockout can only be reset after four hours. **C&I PV and ESS System** 1. After entering state 3, the system generates an alarm indicating that the power control of the grid-tied point is abnormal and the inverters and/or ESSs 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 Normal, indicating that the system has returned to normal operation mode state 1. 4. C&I PV and ESS System only applied to non-domestic installations, lockout can only be reset after four hours.