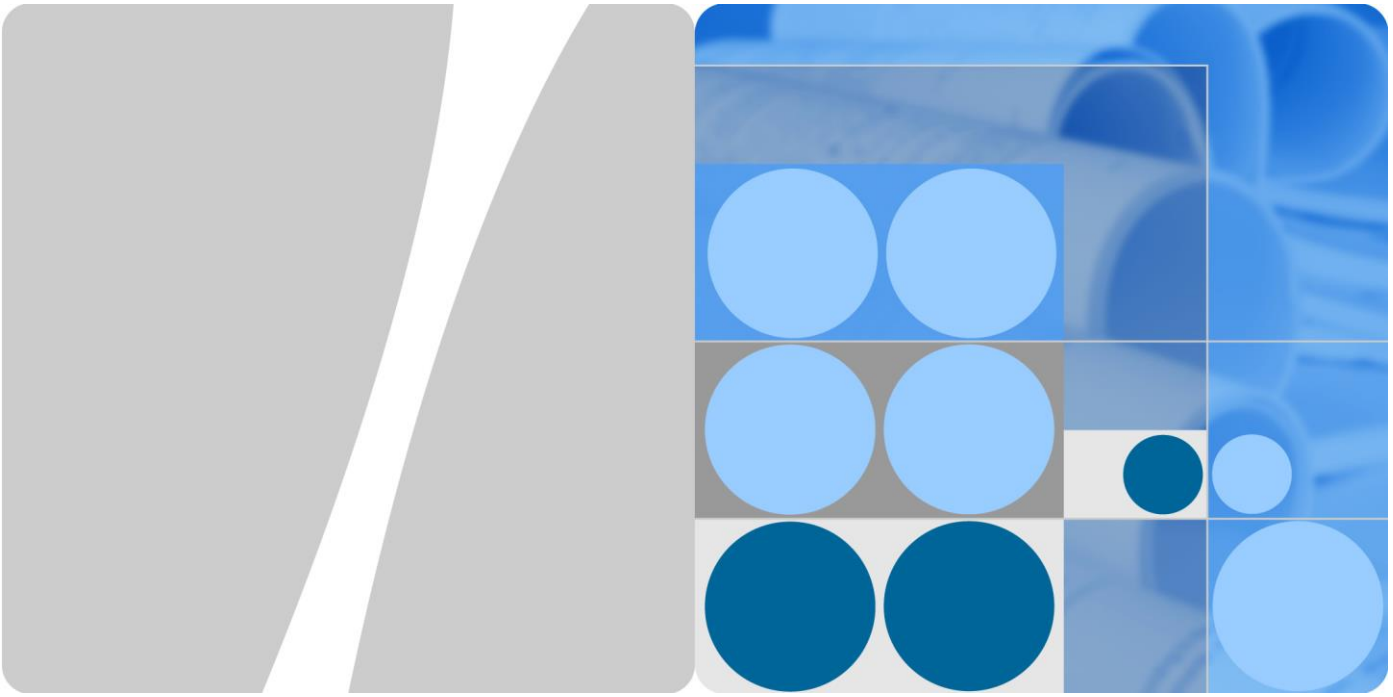

SmartLogger1000

Export Limitation Configuration Guide

Issue 01

Date 2018-11-14

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Perface

Purpose

This document applies to the SmartLogger1000 data collector series (SmartLogger for short). Read this document before you use the SmartLogger. As a dedicated platform for photovoltaic (PV) power system monitoring and management, the SmartLogger implements the interface convergence, protocol conversion, data collection, data storage, centralized monitoring, intelligent maintenance, and remote networking functions for devices in a PV power system.

This manual describes the operation and maintenance instructions of the export limitation function.

Intended Audience

- This document is intended for :
  - Technical support engineers.
  - Maintenance engineers.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol Conventions

Symbol	Description
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to

Symbol	Description
	personal injury.
NOTE	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

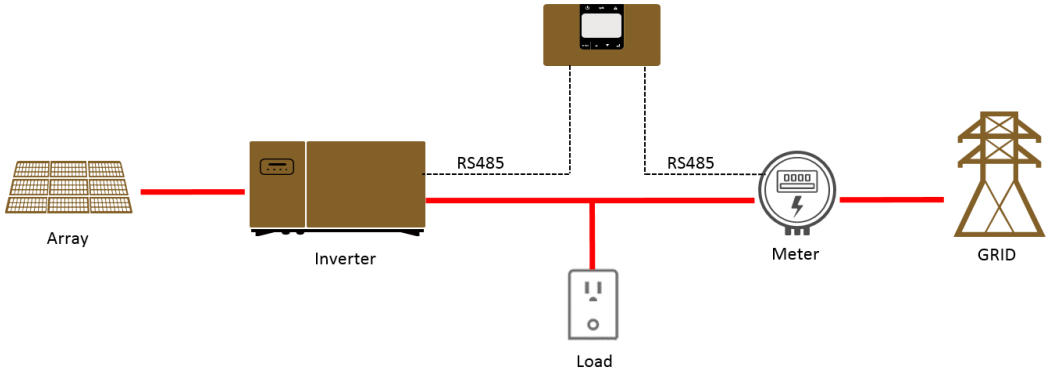
Change History

Issue	Date	Description
01	2018-02-02	This issue is the first official release.

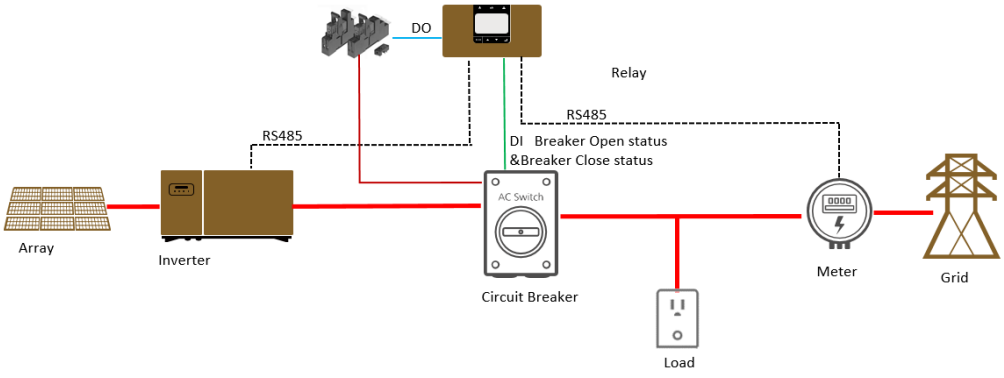
Contents

1 System Network Diagrams

- Without the DO control circuit breaker



- With the DO control circuit breaker



NOTICE

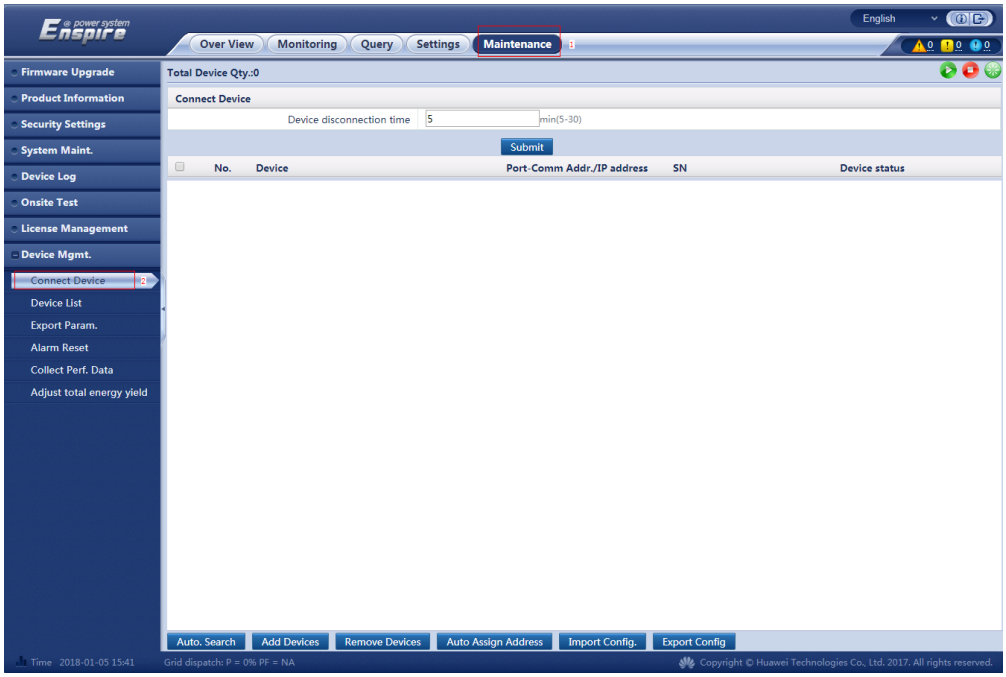
1. Pay attention to the power supply position of the SmartLogger. Avoid powering off the SmartLogger after the DO control circuit breaker is switched off.

2 Procedure

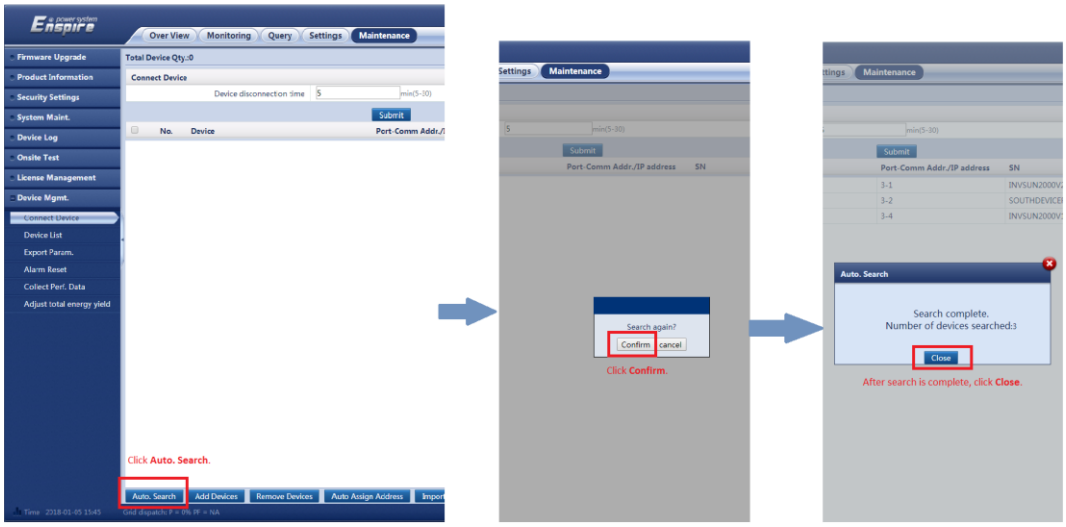
2.1 Step 1 Connecting to Devices

2.1.1 Connecting to the Inverter

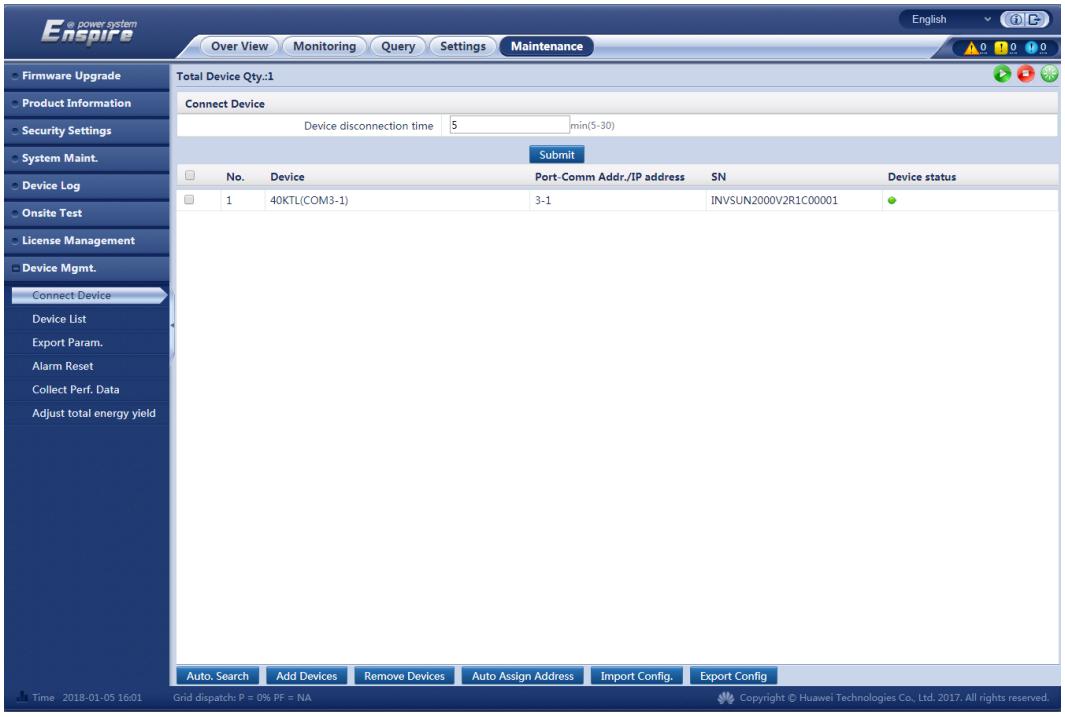
Log in as **Advanced User**. Choose **Maintenance** > **Connect Device** to access the target page, as shown in the following figure.



Automatically search for inverters:



Search result:

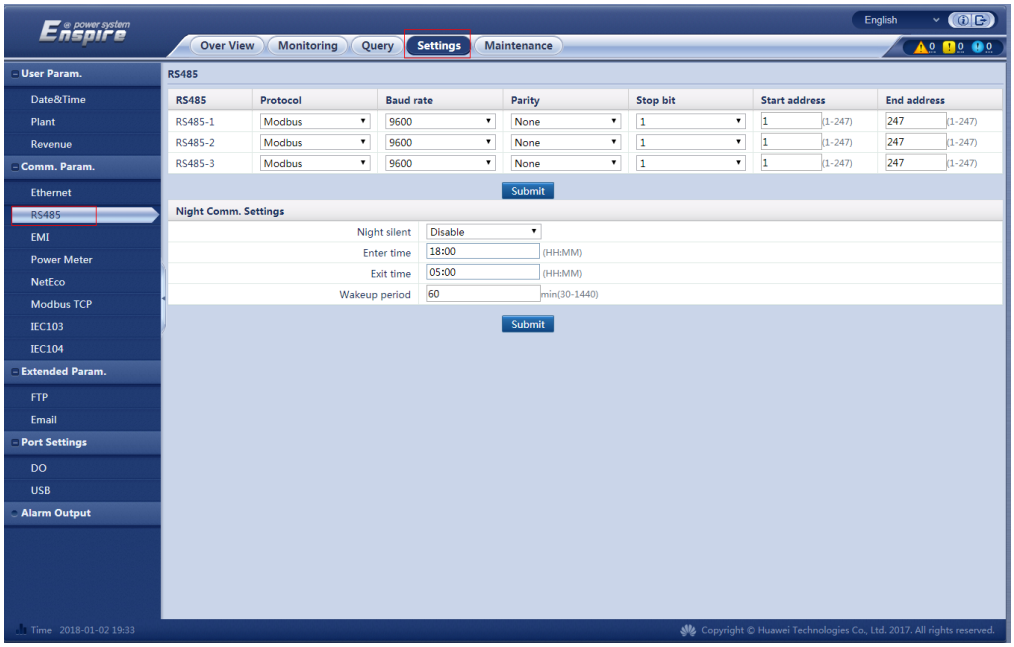


2.1.2 Connecting to the Power Meter

The power meter does not support automatic search and needs to be added manually.

- Setting RS485 Parameters

  Log in as **Advanced User**. Choose **Settings** > **RS485** to access the target page.

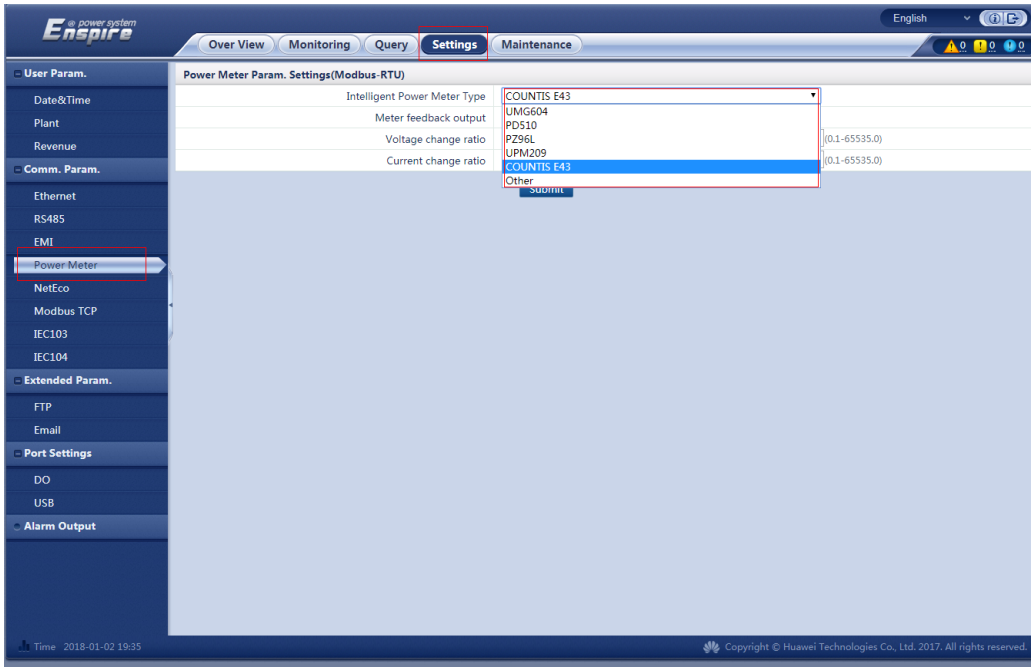


NOTE

RS485-1 to **RS485-3** correspond to the communications ports **COM1** to **COM3**, and the default baud rate is 9600 bps. For the power meter connected to the corresponding RS485 port, the values of **Protocol**, **Baud rate**, **Parity**, and **Stop bit** must be the same as those on the web page.

- Setting Power Meter Parameters

Log in as **Advanced User**. Choose **Settings** > **Power Meter** to access the target page.



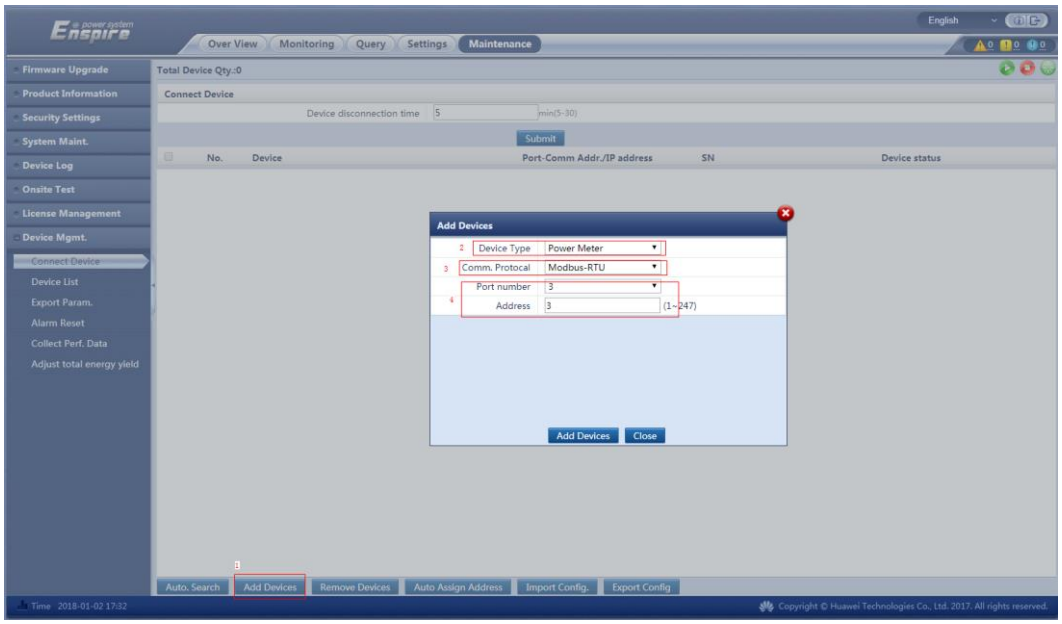
NOTE

- If the connected power meter model is UMG604, PD510, PZ96L, UPM209, or COUNTIS E43, select the corresponding model in the **Intelligent Power Meter** Type drop-down list box.

- When the UPM209 or COUNTIS E43 power meter is connected to the SmartLogger, a 120-ohm resistor needs to be connected to the RS485 bus of the meter. For details, see the user manual of the power meter.

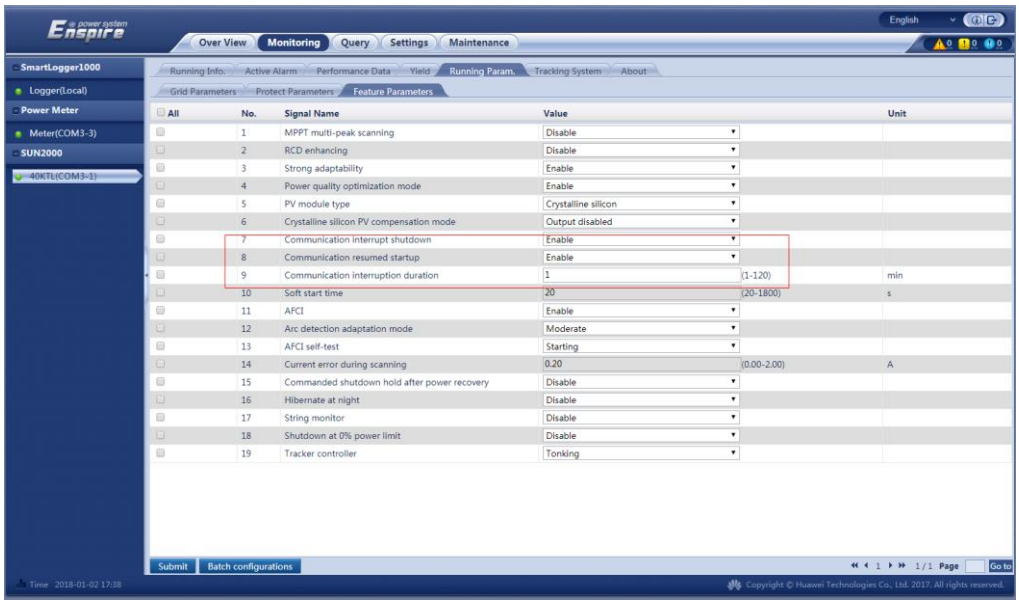
- Manually Adding a Power Meter

  Manually add a power meter after correctly setting **RS485 Parameters** and **Power Meter Parameters**. **A power meter can work properly only after it is manually added.**



2.2 Step 2 Configuring Automatic Shutdown in Case of Inverter Communication Interruption

Log in as **Advanced User**. Choose **Monitoring** > **SUN2000** > **Running Param.** > **Feature Parameters** to access the target page.



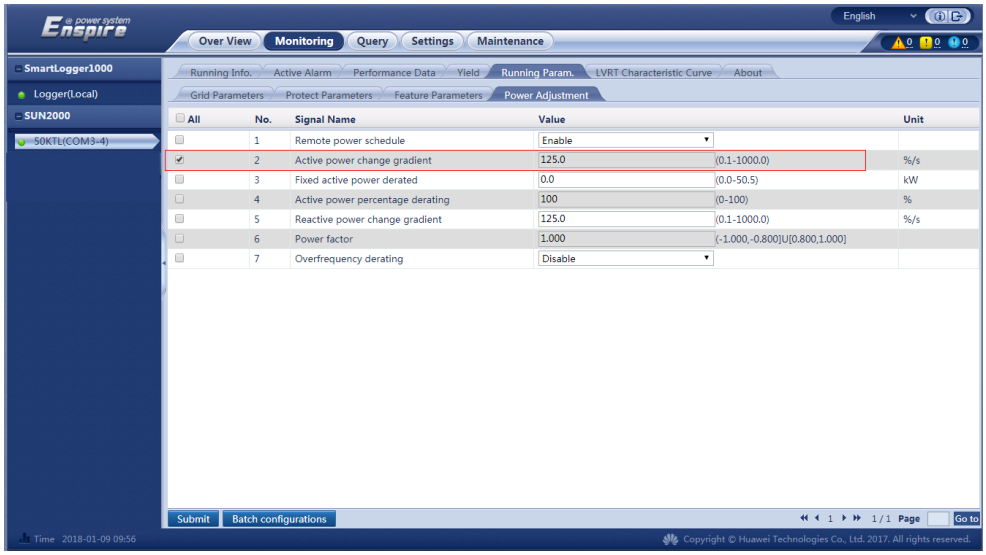
NOTE

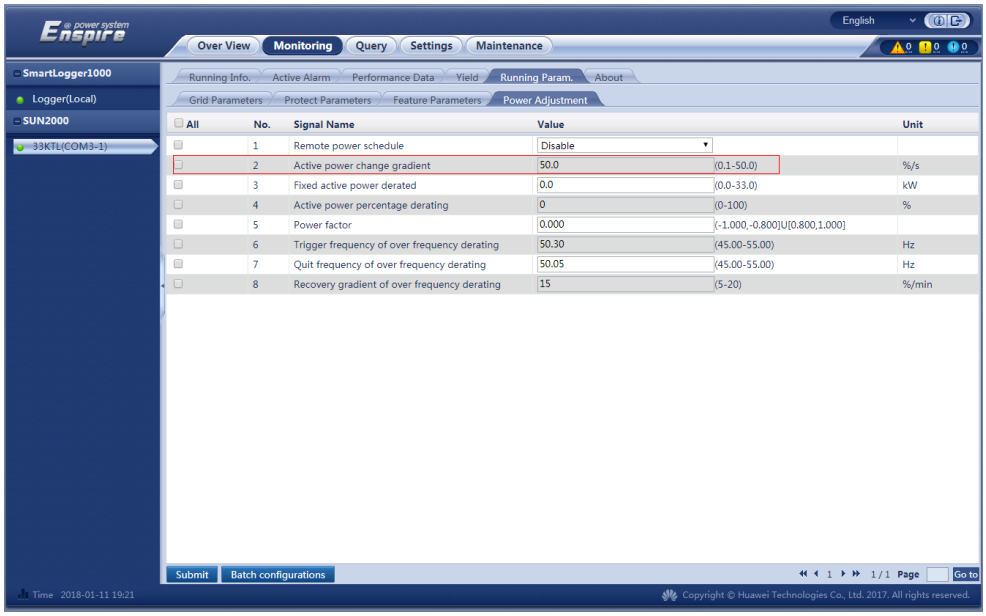
- Set **Communication interrupt shutdown** and **Communication resumed startup** to **Enable**.

- Set the communication interruption duration as required. **Batch configuration** can be used for multiple inverters.

2.3 Step 3 Configuring the Active Power Change Gradient

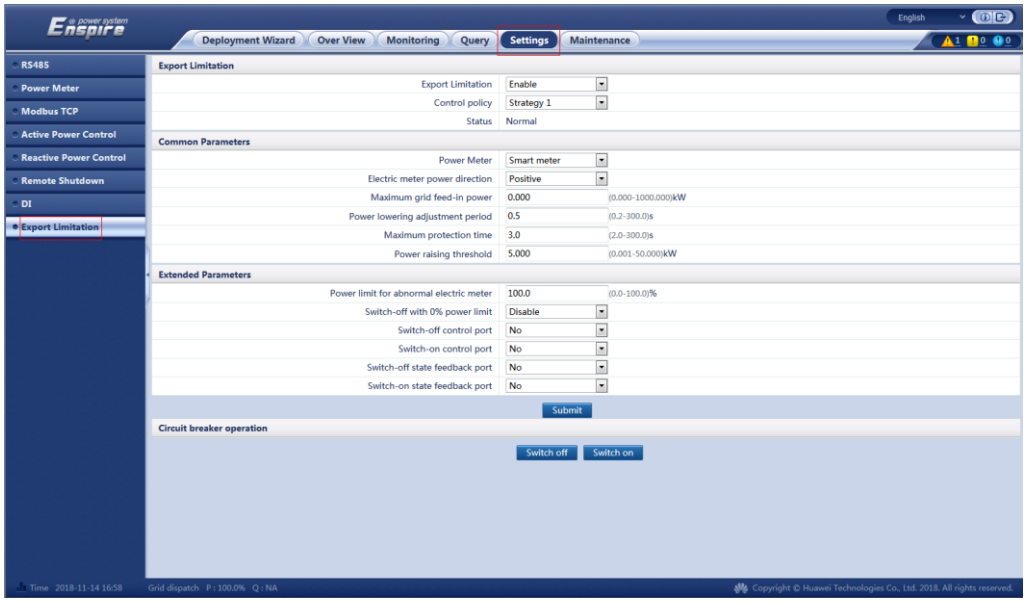
Log in as **Special User**. Choose **Monitoring** > **SUN2000** > **Running Param.** > **Power Adjustment** to access the target page. If the maximum value of **Active power change gradient** is **50 %/s**, set the parameter to the maximum value **50 %/s**. If the maximum value of **Active power change gradient** is **1000 %/s**, set the parameter to **125 %/s**.





2.4 Step 4 Configuring Export Limitation Parameters

Log in as **Special User**. Choose **Settings** > **Export Limitation** to access the setting page. If the DO switch-on/off operations are not involved, ignore the switch-on/off configurations.



- **Parameter Configuration**

Parameter	Value Range	Default Value	Description
Export Limitation	Enable/Disable	Disable	Enables or disables the Export Limitation prevention feature.
Control policy	Strategy 1	Strategy 1	Currently, only **Strategy 1** is supported.
Power Meter	Smart Meter/No	No	If you want to enable Export Limitation, select Smart meter. Otherwise the function cannot be enabled.
Electric meter power direction	Positive/Reverse	Reverse	Set this parameter to **Positive** if the active power reading of the power meter is positive when the inverter has no power output. Otherwise, set this parameter to **Reverse**.
Maximum grid feed-in power	(0.000, 1000.000)kW	0.000kW	Maximum output power of the inverter to the power grid Suggestion: Set this parameter according

Parameter	Value Range	Default Value	Description
			to the threshold allowed by the local power company.
Power lowering adjustment period	(0.2,300.0)s	0.5s	Inverter output power lowering period. Refer to **Empirical Parameters**. (If it is consistent with **Maximum protection time**, the power can be lowered for 100% in a single step.)
Maximum protection time	(3.0,300.0)s	3.0s	The maximum duration of the inverter output power to the power grid exceeding the preset threshold detected by the SmartLogger. If **Switch-off with 0% power limit** is enabled, DO switch-off is triggered. This parameter is used with **Power lowering adjustment period**. Refer to **Empirical Parameters**. Suggestion: Set this parameter according to the maximum duration allowed by the local power company.
Power raising threshold	(0.001, 50.000)kW	5.000kW	Inverter output power raising threshold.
Power limit for abnormal electric meter	(0.0, 100.0)%	100.0%	Inverter output power percentage controlled by the SmartLogger when communication between the SmartLogger and the power meter is

Parameter	Value Range	Default Value	Description
			abnormal.
Switch-off with 0% power limit	Enable/Disable	Disable	Enables or disables DO switch-off. The default value is **Disable**. When enabled and the power is limited to 0%, the DO performs the corresponding action (the hold time is 5 seconds) if the current reverse flow does not disappear after 5 seconds.
Switch-off control port	No/DO1/DO2/DO3	No	Set the Switch-off control port based on actual cable connection.
Switch-on control port	No/DO1/DO2/DO3	No	Set the Switch-on control port based on actual cable connection.
Switch-off state feedback port	No/DI1/DI2/DI3/DI4	No	Set the Switch-off state feedback port based on actual cable connection.
Switch-on state feedback port	No/DI1/DI2/DI3/DI4	No	Set the Switch-on state feedback port based on actual cable connection.

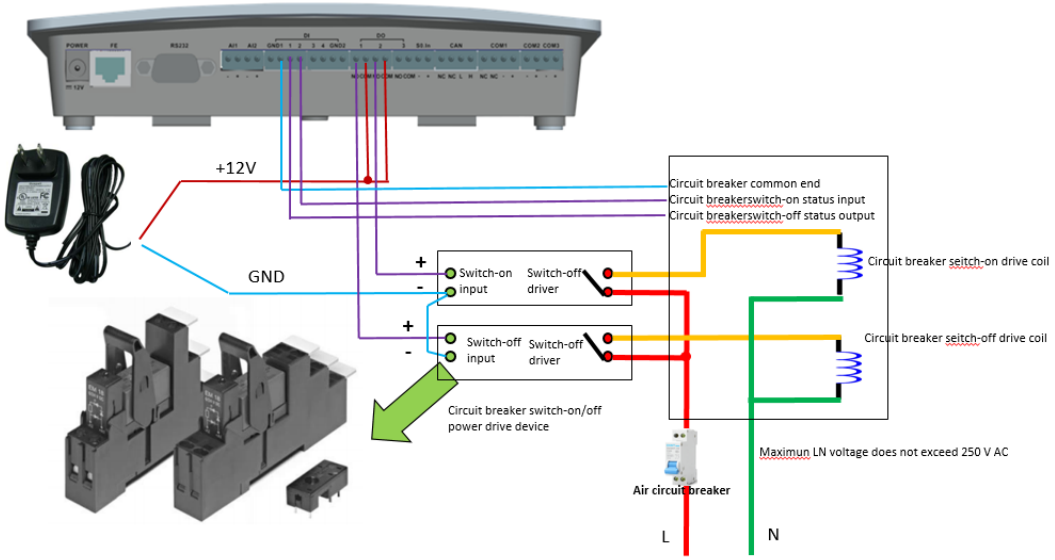
- **Empirical Parameters**

Meter Model	Power Lowering Adjustment Period	Maximum Protection Time
UMG	0.5s	3s
COUNTIS E43	0.5s	3s
UMP209	0.5s	3s

The preceding parameters are tested in a lab environment and can be preferentially used for configuration and commissioning onsite. They may need to be adjusted based on the actual situation.

3 Circuit Breaker Control

- The following figure shows the circuit breaker drive wiring diagram for the SmartLogger1000. DO1 is used as an example.



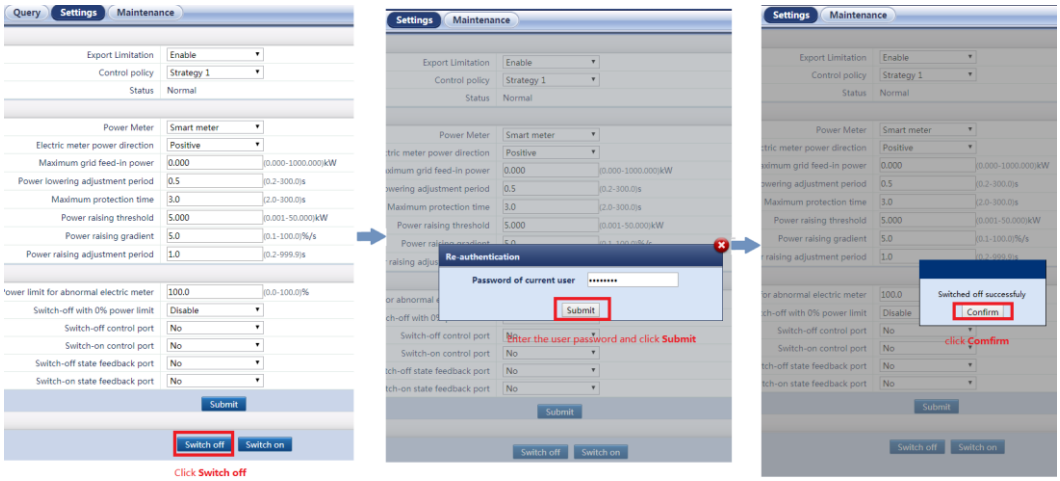
- DO1 on the SmartLogger1000 is used to control the switch-off output. The NO port of DO1 is connected to relay +, and the COM port is connected to 12 V power supply +. The NO contact of the intermediate relay is connected to the circuit breaker switch-off coil.
- DI1 on the SmartLogger1000 is used to detect the switch-off status and is connected to the circuit breaker switch-off status output. DI2 is used to check the switch-on status and is connected to the circuit breaker switch-on status output. GND is connected to the common end of the circuit breaker.
- DO2 on the SmartLogger1000 is used to control the switch-on output. It is wired in the same way as DO1. The difference is that the NO contact of the intermediate relay is connected to the circuit breaker switch-on coil.

NOTICE

1、The intermediate relay uses a 12 V drive coil, the contact supports 250 V AC @ 10 A or higher, and the relay is installed with a base and guide rail.

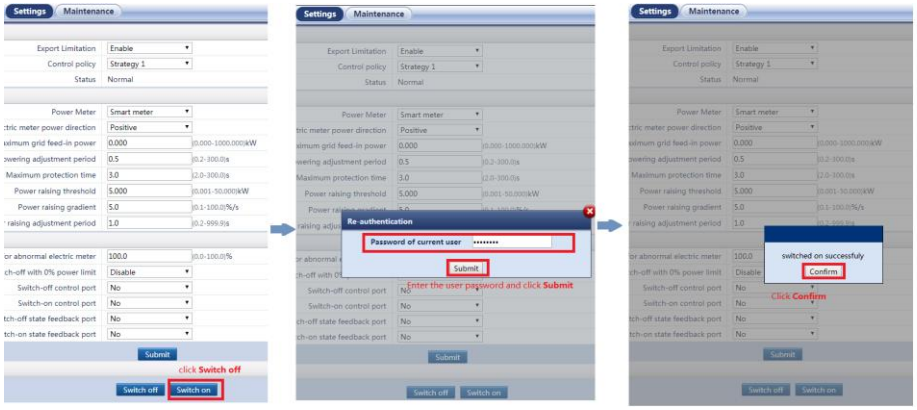
2、The intermediate relay and external power adapter are configured by the customer and are not provided by Huawei.

- Switch-off control test:



After switch-off is complete, check whether the circuit breaker is OFF.

- Switch-on control test:



After switch-on is complete, check whether the circuit breaker is ON.

4 Q&A

4.1 Why is there a failure to enable Export Limitation?

Answer: Check that **Active power control** is disabled. Perform as follows:

Log in as **Special User**. Choose **Settings** > **Active Power Control** and set **Active power control** to **Disable**.