## SmartLogger3000

## Export Limitation Configuration Guide

 Issue
 04

 Date
 2022-10-24





HUAWEI TECHNOLOGIES CO., LTD.

#### Copyright © Huawei Technologies Co., Ltd. 2022. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

#### **Trademarks and Permissions**

NUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd. All other trademarks and trade names mentioned in this document are the property of their respective holders.

#### Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

## Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base Bantian, Longgang Shenzhen 518129 People's Republic of China

Website: <u>https://e.huawei.com</u>

## Preface

## Purpose

This document applies to the SmartLogger3000 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	Description
A DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Symbol	Description
NOTICE	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 personal injury.
	Supplements the important information in the main text.
	NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

## **Change History**

Issue	Date	Description
04	2022-10-24	Change the default value of communication disconnection detection time to 3
03	2022-08-01	Added the empirical parameters of the YDS60-80 meter.
02	2020-10-31	Update the description of "Start control" paramter.
01	2020-07-29	This issue is the first official release.

Preface

## **Contents**

Preface	ii
1 System Network Diagrams	1
2 Connecting to the Inverter	3
3 Configuting Export Limitation Feature	5
3.1 Wizard Configuration	5
3.1.1 Step 1 Connecting to the Power Meter	5
3.1.2 Step 2 Configuring Inverter Parameters	6
3.1.3 Step 3 Configuring Export Limitation Parameters	8
3.2 General Configuration	12
3.2.1 Step 1 Connecting to the Power Meter	12
3.2.2 Step 2 Configuring Inverter Parameters	13
3.2.3 Step 3 Configuring the Active Power Change Gradient	14
3.2.4 Step 4 Configuring Export Limitation Parameters	14
4 Circuit Breaker Control	20
5 Q&A	22
5.1 Why is there a failure to enable Export Limitation?	22

## System Network Diagrams

The Export Limitation feature is mainly used in the self-use scenario. The SmartLogger detects the active power of the grid-tied point electric meter, controls the active output of the inverter in a closed-loop manner, prevents the inverter output power from being transmitted to the power grid, and maximizes the inverter power generation for local load consumption.

#### Without the DO control circuit breaker



#### Figure 1-1

With the DO control circuit breaker

#### Figure 1-2



#### NOTICE

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



**Step 1** Log in as **admin**. Choose **Maintenance** > **Connect Device** to access the target page, as shown in the following figure.



**Step 2** Automatically search for inverters:

#### 2 Connecting to the Inverter

Enspire	Deployment Wizard	Query Settings Maintenance toring Query Settings Maintenance	
<ul> <li>Software Upgrade</li> </ul>	Total Device Qty.:0		
• Product Information	Connect Device		
<ul> <li>Security Settings</li> </ul>		t-in MBUS Enable Built-in MBUS Enable	
<ul> <li>System Maint.</li> </ul>		ction time 5 min[5, 30] disconnection time 5 min[5, 30]	
<ul> <li>Device Log</li> </ul>		Submit	
<ul> <li>Onsite Test</li> </ul>	No. Device 🗢	Port-Comm Addr./IP address  SN  Port-Comm Addr./IP address  COLM 4	SN 0
<ul> <li>License Management</li> </ul>		COMT-1	INVSUN2000V3R1C00001
- Device Mamt.			
Connect Device	_		8
SmartModule		Auto. Search	
Device List			
Export Param.		Search complete.	
Clear Alarm		Ver No	
Data Re-collection		Close	
Adjust total energy yield			
	Auto. Search Add Devices	Address Import Config. Export Config	

**Step 3** Search result:

Enspire		Deplo	yment Wizard	Over View	Monitoring Query	Settings M	aintenance			English 🔹	
Software Upgrade	Total De	/ice Qty.:`	I								0 😳 😔
Product Information	Connec	t Device									
<ul> <li>Security Settings</li> </ul>					Built-in MBUS	Enable	~				
<ul> <li>System Maint.</li> </ul>				0	Pevice disconnection time	5	min[5, 30]				
<ul> <li>Device Log</li> </ul>						Submit					
<ul> <li>Onsite Test</li> </ul>		No.	Device 0			Port-Comm Addr.	/IP address 🗢	SN 🌣	Device st	atus 0	
License Management	U	1	70KTL-C1(CO	M1-2)		COM1-2		INVSUN2000V3R1C00002	•		
- Device Mamt											
Connect Device											
SmartModule											
Device List											
Export Param.											
Clear Alarm											
Data Re-collection											
Adjust total energy yield											
	Auto, S	earch	Add Devices	Remove Devices	Auto Assign Address	Import Config.	Export Config				

----End

# **3** Configuting Export Limitation Feature

#### 3.1 Wizard Configuration

3.2 General Configuration

## 3.1 Wizard Configuration

## **3.1.1 Step 1 Connecting to the Power Meter**

Log in as **admin**. Choose **Settings** > **Power Adjustment** > **Export Limitation** to access the target page.Manually add a power meter after correctly setting parameters. Then click the **Next** button.

F e power system					English	• (CD)
Enspire	Deployment Wizard Ove	er View Monitoring Query	Settings Maintenance		il 🔼	<u>. 0</u> 02
🛚 User Param.	0	-3				<u>^</u>
🛚 Comm. Param.	Power Meter Inverter Expo Parameters Pa	ort Limitation arameters				
Power Adjustment						
Active Power Control	Modbus RTU					1 Help
Reactive Power Control		Port	COM1 V			
Export Limitation		Baud rate	9600 👻			
Smart Reactive Power C		Parity Stee Rit	None V			
DRM		Address	1 1 247			
Remote Shutdown						
• DI			Add Devices			
Alarm Output	Power Meter Running Parameters					
		Device	Meter(COM1-1) V			
<ul> <li>Smart Tracking Algorithm</li> </ul>		Intelligent Power Meter Type	Acrel-PZ96L V			
Other Parameters		Voltage change ratio	1.0 [0.1, 65]	135.0]		
		Current change ratio	Eventsionest mater M	520]		
		meter usage	export+Import meter +			
			Submit			
	Power Meter Running Information					
	Meter(COM1-1) V	Signal Name		Value	Unit	
	0	Device status		NA		A
	N	Vleter usage		NA		- 1
	L	ine voltage between phases A and B		NA	V	- 8
	L	ine voltage between phases B and C		NA	V	- 11
	L	ine voltage between phases C and A		NA	V	
				dh e than the state		rveort
Time 2014-12-03 22:18	Grid dispatch P: Disable Q: Disable			💥 Copyright 🕲 Huawei Technologies (	.o., Ltd. 2020. All rig	phts reserved.

#### 

- 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.
- COUNTIS E43:Not applicable to Load Imbalance.
- The meter which used for **Export Limitation**, set the "**Meter usage**" to "**Export + import meter**". Each array allows only one export+import meter to be connected.

## 3.1.2 Step 2 Configuring Inverter Parameters

If Figure 3-2 does not have **Communication disconnection fail-safe** and **Communication disconnection detection time** and **Fail-safe power threshold**.Please refer to Figure 3-3.After the inverter parameters are correctly configured, then click the **Next** button.

#### Figure 3-1

🗲 @ power system					English	· (0e)
Enspire	Deploys	ment Wiz	ard Over View Monitoring Query Settings Ma	intenance		( <u>A</u> 0 <u>10</u> <u>0</u> 2)
a User Param.	0	-0				
E Comm. Param.	Power Meter	Inverte	er Export Limitation ers Parameters			
Power Adjustment						
Active Power Control	Inverter Parameter	s				🕑 Help
Reactive Power Control	All	No.	Signal Name	Value		Unit
Shutdown at high feed-i		1	Active power change gradient	125.000	[0.100, 5000.000]	96/s
Export Limitation		2	Soft start time	20	[1, 1800]	5
Smart Reactive Power C		3	Soft start time after grid failure	20	[1, 1800]	5
DRM		4	Communication disconnection fail-safe	Enable	×	
EMS Centrel		5	Communication disconnection detection time	3	[1, 7200]	\$
C ENIS CONTON		6	Active power limit when communication fails	0.0	[0.0, 100.0]	%
<ul> <li>Remote Shutdown</li> </ul>			Batch con	igurations		
O DI						
<ul> <li>Alarm Output</li> </ul>						
Smart Tracking Algorithm						
Other Parameters						
					P	revious Next
II Time 2014-12-21 20:28	Grid dispatch P:0.0%	Q : Disable			🆇 Copyright © Huawei Technologies Co., Ltd. 20	21. All rights reserved.

The following table lists the recommended parameter settings.

#### Table 3-1

Parameter	Recommended Value	Description
Active power change gradient	125%/s,If the maximum value range is 50%/s, set this parameter to 50%/s.	
Soft start time	20	
Soft start time after grid failure	20	
Communication disconnection fail-safe	Enable	

Parameter	Recommended Value	Description
Communication disconnection detection time	3	Under the Spanish RD1699 grid standard, it is recommended to set it to 1S.
Fail-safe power threshold	0	
Plant active power gradient	0	

#### Figure 3-2

F @ power system						English - 🔞 🕞
E iispii e	Deploy	ment Wiz	ard Over View Monitoring Query	Settings Maintenance		
e RS485	0-		2 3			
• Power Meter	Power Meter	Inv Para	verter Backflow Imeters Prevention			
Modbus TCP			Parameters			
Active Power Control	Inverter Param	neters				🕑 Help
- Reactive Rewar Centrel	IIA 🕑	No.	Signal Name	Value		Unit
C Reactive Power Control		1	Active power change gradient	125.000	[0.100, 1000.000]	%/s
e Remote Shutdown	۲	2	Soft start time	20	[1, 1800]	s
• DI		3	Soft start time after grid failure	20	[1, 1800]	s
a franciscus de sé		4	Communication interrupt shutdown	Enable	T	
• Export Limitation		5	Communication resumed startup	Enable	•	
Intelligent Reactive Pow		6	Communication interruption duration	1	[1, 120]	min
O DRM		7	Plant active power gradient	0	[0, 60]	min/100%
				Batch configurations		
						Previous Next

#### Table 3-2

Parameter	Recommended Value
Active power change gradient	125%/s,If the maximum value range is 50%/s, set this parameter to 50%/s.
Soft start time	20
Soft start time after grid failure	20
Communication interrupt shutdown	Enable
Communication resumed startup	Enable
Communication interruption duration	1
Plant active power gradient	0

## 3.1.3 Step 3 Configuring Export Limitation Parameters

If the DO switch-on/off operations are not involved, ignore the switch-on/off configurations.

📂 @ power system										English	· (66)
Enspire	Deploy	ment Wizard	Over View	Monitoring	Query	Settings Ma	aintenance			, all 🔾	<u>A</u> o <u>1</u> o ()o.
🗆 User Param.	0	-0	3								
Date&Time	Power Meter	Inverter Parameters	Export Limitation								
Plant			Parameters								
Revenue	Export Limitation										🕑 Help
Save Period				Active power cor	ntrol mode	Export Limitation(k	(W)	~			
🛚 Comm. Param.					Status	Normal					
Power Adjustment	Common Paramet	ters									
Antine Dennes Combrel				St	art control	Yes		~			
Active Power Control			Ele	ctric meter powe	r direction	Positive		~			
Reactive Power Control				Limita	tion mode	Total power		~			
Export Limitation			М	aximum grid fee	d-in power	0.000			[-1000.000, 5000.000]kW		
Smart Reactive Power C			Power I	lowering adjustm	ent period	0.5			[0.2, 300.0]s		
DRM	1			Maximum prote	ection time	3.0			[2.0, 300.0]s		
Remote Shutdown				Power raising	threshold	5.000			[0.001, 50.000]kW		
o DI	Extended Parame	ters									
<ul> <li>Alarm Output</li> </ul>				Fail-safe powe	r threshold	0.0			[0.0, 100.0]%		
Smort Tracking Algorithm			Swi	tch-off with 0% p	oower limit	Disable		~			
				Switch-off o	ontrol port	No		~			
Other Parameters				Switch-on o	ontrol port	No		~			
			Sw	itch-off state fee	dback port	No		~			
			Sw	itch-on state fee	dback port	No		~			
						Submit					
	Circuit breaker op	eration									
						Switch off Swit	tch on				
											Previous

#### Figure 3-3

#### • Parameter Configuration

Parameter	Value Range	Default Value	Description
Start control	Yes/No	No	Enable/Disable Export Limitation feature. Set this parameter to Yes. Otherwise, the export limitation feature does not take effect.
Electric meter power direction	Positive/Reverse	Reverse	Set this parameter to <b>Positive</b> if the active power reading of the power meter is positive when the inverter has no power output. Otherwise, set this parameter to <b>Reverse</b> .

Parameter	Value Range	Default Value	Description
Limitation mode	Total power/ Single-phase power	Total power	Total power: Backflow prevention for the total power of the grid-tied point.
			Single-phase power: Backflow prevention for each phase of the grid-tied point.
			(COUNTIS E43:Not applicable to Load Imbalance.)
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 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 <b>Maximum</b> <b>protection time</b> , the power can be lowered for 100% in a single step.)

Parameter	Value Range	Default Value	Description
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.The recommended setting is 1%~2%Pn.
Fail-safe power threshold	(0.0, 100.0)%	100.0%	Inverter output power percentage controlled by the SmartLogger when communication between the SmartLogger and the power meter is abnormal.

Parameter	Value Range	Default Value	Description
Switch-off with 0% power limit	Enable/Disable	Disable	Enables or disables DO switch-off. The default value is <b>Disable</b> . 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/D O3	No	Set the Switch- off control port based on actual cable connection.
Switch-on control port	No/DO1/DO2/D O3	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	Description
UMG	0.5s	3s	
COUNTIS E43	0.5s	3s	

Meter Model	Power Lowering Adjustment Period	Maximum Protection Time	Description
UMP209	0.5s	3s	
CHNT DTSU666-H	0.5s	3s	Under the Spanish RD1699 grid standard, please set Power Lowering Adjustment Period 0.8s, Maximum Protection Time 2s
YDS60-80	0.8s	2s	The maximum protection time must be adjusted based on local policies.

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.

## **3.2 General Configuration**

## 3.2.1 Step 1 Connecting to the Power Meter

Log in as **admin**. Choose **Deployment Wizard** > **Power Meter** to access the target page.Manually add a power meter after correctly setting parameters.

F e power system					English	* (0e)
Enspire	Deployment Wizard	Over View Monitoring Query	Settings Maintenance		III 🔼	<u>10</u> ()2
Deployment Wizard	1 2		-5 6	7		
Basic parameters	Basic parameters Huawei Devices	Power Meter EMI Hua	wei NMS Third-party NMS	Third-party Devices		
Huawei Devices						
Power Meter	Modbus RTU					🕑 Help
EMI		Port	COM1 🗸			
Huawei NMS		Protocol	Modbus 🗸			
Third-party NMS		Baud rate	9600 👻			
Third-party Devices		Parity	None 👻			
		Stop Bit	1 ×			
	1	Address	[1][1, 247]			_
	•		Add Devices			
	Power Meter Running Parameters	\$				
		Device	Meter(COM1-1)			_
		Intelligent Power Meter Type	Acrel-PZ96L 🗸			
		Voltage change ratio	1.0 [0.1, 6553	5.0]		
		Current change ratio	1.0 [0.1, 6553	5.0]		
		Meter usage	Export+import meter 🗸			
		l	Submit			
	<ul> <li>Power Meter Running Informatio</li> </ul>	'n				
	All 🗸 📋	Signal Name		Value	Unit	
		Device status		Disconnection		<b>^</b>
		Meter usage		Export+import meter		
		Line voltage between phases A and B		NA	V	
		Line voltage between phases B and C		NA	v	
					Previous Next	Skip
Time 2014-12-03 22:49				👋 Copyright © Huawei Technologies		

#### 

- 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.
- COUNTIS E43:Not applicable to Load Imbalance.
- The meter which used for **Export Limitation**, set the "**Meter usage**" to "**Export + import meter**". Each array allows only one export+import meter to be connected.

## 3.2.2 Step 2 Configuring Inverter Parameters

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

Occli     Grid Parameters     Feature Parameters     Feature Parameters     Power Adjustment       Image: Ima
All         No.         Signal Name         Value           0M1-3)         1         Communication interrupt shutdown         Enable         •           2         Communication resumed startup         Enable         •           3         Communication interruption duration         1         (1-120)           4         Soft start time         20         (20-1800)
OM1-3)         I         Communication interrupt shutdown         Enable           2         Communication resumed startup         Enable         •           3         Communication interruption duration         I         (1-120)           4         Soft start time         20         (20-1800)
Image: Communication resumed startup         Enable           Image: Communication Interruption duration         1         (1-120)           Image: Communication Interruption duration         1         (20-1800)
action         3         Communication Interruption duration         1         (1-120)           4         Soft start time         20         (20-1800)
addition         4         Soft start time         20         (20-1800)
5 LVRT Disable •
G 6 HVRT Disable T
7 Active islanding Enable
8 Voltage rise suppression Enable T
9 Voltage rise suppression reactive adjustment point 110.0 (100.0-115.0)
10 Voltage rise suppression active derating point 112.5 (100.0-115.0)
I1 Frequency change rate protection     Enable     T
12 Frequency change rate protection point     0.2     (0.1-5.0)
13 Frequency change rate protection time     0.5     (0.2-20.0)
14         Soft start time after grid failure         600         (20-800)

#### Figure 3-4

The following table lists the recommended parameter settings. For multiple inverters, use Batch configurations.

Table 3	3-3
---------	-----

Parameter	Recommended Value
Communication interrupt shutdown	Enable
Communication resumed startup	Enable
Communication interruption duration	1
Soft start time	20
Soft start time after grid failure	20

### 3.2.3 Step 3 Configuring the Active Power Change Gradient

Log in as **admin**. Choose **Monitoring** > **SUN2000** > **Running Param.** > **Power Adjustment** to access the target page.

#### Figure 3-5

🗲 @ power system						English 🗸 🔞 🕞			
Enspire		Deployment Wi	zard Over View Monitoring Que	y Settings Maintenance		461 🔥 10 00			
SmartLogger1000A	Runnin	g Info. Active	Alarm 🖉 Performance Data 🎽 Yield 🖌 Runnin	g Param. LVRT Characteristic Curve	About				
Logger(Local)	Grid Pa	Grid Parameters Protect Parameters Feature Parameters Power Adjustment							
SUN2000		No.	Signal Name	Value		Unit			
50KTL(COM1-3)		1	Remote power schedule	Enable	T				
D PLC		2	Plant active power gradient	1	(0-60)	min/100%			
<ul> <li>DLC inside</li> </ul>		3	Filter duration for average active power	20	(20-300000)	ms			
PLC-Inside		4	Active power change gradient	125.000	(0.100-1000.000)	%/s			
		5	Fixed active power derated	0.0	(0.0-52.5)	kW			
		6	Active power percentage derating	100	(0-100)	%			
		7	Reactive power change gradient	125.0	(0.1-1000.0)	96/s			
		8	Power factor	1.000	(-1.000,-0.800]U[0.800,1.000]				
		9	Overfrequency derating	Disable	•				
		10	Voltage derating	Disable	•				
	C.1	B-1-1				44 4 4 b bb 1 41 page			
	Submit	batch configural	dons			Go to			

The following table lists the recommended parameter settings. For multiple inverters, use Batch configurations.

#### Table 3-4

Parameter	Recommended Value
Plant active power gradient	0
Active power change gradient	125%/s,If the maximum value range is 50%/s, set this parameter to 50%/s.

## 3.2.4 Step 4 Configuring Export Limitation Parameters

Log in as **admin**. Choose **Settings** > **Power Adjustment** > **Active Power Control** to access the setting page. If the DO switch-on/off operations are not involved, ignore the switch-on/off configurations.

#### Figure 3-6

🗲 @ power system			English v (0 C
Enspire	Deployment Wizard Over View Monitoring Query	Settings Maintenance	
a User Param.	Active power control		
🛚 Comm. Param.	Active power control mode	Export Limitation(kW)	
- Power Adjustment	Status	Normal	
Active Power Central	Common Parameters		
Provide Power Control	Start control	Yes 🗸	
Reactive Power Control	Electric meter power direction	Positive 🗸	
Export Limitation	Limitation mode	Total power 👻	
Smart Reactive Power C	Maximum grid feed-in power	0.000	[-1000.000, 5000.000] kW
DRM	Power lowering adjustment period	0.5	[0.2, 300.0] s
Remote Shutdown	Maximum protection time	3.0	[2.0, 300.0] s
o Di	Power raising threshold	5.000	[0.001, 50.000] kW
<ul> <li>Alarm Output</li> </ul>	Extended Parameters		
Smart Tracking Algorithm	Fail-safe power threshold	0.0	[0.0, 100.0] %
	Switch-off with 0% power limit	Disable	
Other Parameters	Switch-off control port	No 🗸	
	Switch-on control port	No ¥	
	Switch-off state feedback port	No ¥	
	Switch-on state feedback port	No ¥	
	Circuit breaker operation		
		Switch off Switch on	
		Submit	

#### • Parameter Configuration

Parameter	Value Range	Default Value	Description
Start control	Yes/No	No	Enable/Disable Export Limitation feature. Set this parameter to Yes. Otherwise, the export limitation feature does not take effect.
Electric meter power direction	Positive/Reverse	Reverse	Set this parameter to <b>Positive</b> if the active power reading of the power meter is positive when the inverter has no power output. Otherwise, set this parameter to <b>Reverse</b> .

Parameter	Value Range	Default Value	Description
Limitation mode	Total power/ Single-phase power	Total power	Total power: Backflow prevention for the total power of the grid-tied point. Single-phase power: Backflow prevention for each phase of the grid-tied point. (COUNTIS E43:Not
			applicable to Load Imbalance.)
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 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 <b>Maximum</b> <b>protection time</b> , the power can be lowered for 100% in a single step.)

Parameter	Value Range	Default Value	Description
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.The recommended setting is 1%~2%Pn.
Fail-safe power threshold	(0.0, 100.0)%	100.0%	Inverter output power percentage controlled by the SmartLogger when communication between the SmartLogger and the power meter is abnormal.

Parameter	Value Range	Default Value	Description
Switch-off with 0% power limit	Enable/Disable	Disable	Enables or disables DO switch-off. The default value is <b>Disable</b> . 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/D O3	No	Set the Switch-off control port based on actual cable connection.
Switch-on control port	No/DO1/DO2/D O3	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	Description
UMG	0.5s	3s	
COUNTIS E43	0.5s	3s	

Meter Model	Power Lowering Adjustment Period	Maximum Protection Time	Description
UMP209	0.5s	3s	
CHNT DTSU666-H	0.5s	3s	Under the Spanish RD1699 grid standard, please set Power Lowering Adjustment Period 0.8s, Maximum Protection Time 2s

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.

## **4** Circuit Breaker Control

• The following figure shows the circuit breaker drive wiring diagram for the SmartLogger1000A. DO1 is used as an example.





- DO1 on the SmartLogger3000 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 SmartLogger3000 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 SmartLogger3000 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:

#### Figure 4-2

cuve power control mode	Export Limitation(kW)	power control mode	Export Limitation(kW)	ntrol mode	Export Limitation(kW)
Status	Normal	Status	Normal	Status	Normal
Start control	Yes	Start control	Yes	tart control	Yes
ric meter power direction	Positive	eter power direction	Positive	er direction	Positive
Limitation mode	Total power	Limitation mode	Total power	ation mode	Total power
imum grid feed-in power	0.000	m grid feed-in power	0.000	d-in power	0.000
vering adjustment period	0.5	g adjustment period	0.5	ent period	
Maximum protection time	3.0	num protection time	3.0	ection time	
Power raising threshold	5.000	wer raising threshold	5.000	g threshold	5.000
	⇔	Re-authentic	cation 8	>	
Fail-safe power threshold	0.0	safe pov		r threshold	0.
h-off with 0% power limit	Disable	with 09	vord of current user	power limit	D Authentication successfully.
Switch-off control port	No	vitch-of	Submit 2	ontrol port	N Confirm
Switch-on control port	No	vitch-on control port	No	ontrol port	N
h-off state feedback port	No	f state feedback port	No	dback port	No
the second state of the state state of the	No	state feedback port	No	dback port	No

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

• Switch-on control test:

#### Figure 4-3

the newsr control mode	Evenert Limitation(kM)	in nowar control mode	Evenet Limitation(k)M0	untrol mode	Export Limitation(KM)
Statue	Normal	Statue	Normal	Status	Normal
510103	Norma	5.67.03	i contrati		
Start control	Yes	Start control	Yes	tart control	Yes
ic meter power direction	Positive	meter power direction	Positive	er direction	Positive
Limitation mode	Total power	Limitation mode	Total power	ation mode	Total power
mum grid feed-in power	0.000	um grid feed-in power	0.000	d-in power	0.000
ering adjustment period	0.5	ring adjustment period	0.5	nent period	0.5
laximum protection time	3.0	ximum protection time	3.0	ection time	
Power raising threshold	5.000	ower raising threshold	5.000	g threshold	5.000
		Re-authenti	ication		
ail-safe power threshold	0.0	il-safe pov		er threshold	0.0
off with 0% power limit	Disable	off with 09	vord of current user ••••••	power limit	Dis Switched on successfully,
Switch-off control port	No	Switch-of	Submit 2	control port	No
Switch-on control port	No	Switch-on control port	No	control port	No
n-off state feedback port	No	off state feedback port	No	dback port	No
h-on state feedback port	No	on state feedback port	No	dback port	No
					Curitals aff

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

## **5**<sub>Q&A</sub>

#### 5.1 Why is there a failure to enable Export Limitation?

## 5.1 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** > **Power Adjustment** > **Active Power Control** and set **Active power control mode** to **No Limit**.

Facale			E	nglish 🗸 🔞 🕞
Enspire	Deployment Wizard Over View Monitoring	Query Settings Maintenance		
🗉 User Param.	Active power control			
Date&Time	Active power	control mode No limit	~ ~	
Plant				
Revenue				
Save Period				
e Comm. Param.				
Power Adjustment				
Active Power Control				
Reactive Power Control				
Export Limitation				
Smart Reactive Power C				
DRM				
Remote Shutdown				
e Di				
<ul> <li>Alarm Output</li> </ul>				
Smart Tracking Algorithm				
• Other Parameters				
		Submit		
Time 2014-12-03 20:43	Grid dispatch P : Disable Q : Disable		🎉 Copyright © Huawei Technologies Co., I	td. 2020. All rights reserved.