

## **Smart I-V Curve Diagnosis on the NetEco 1000S**



# Huawei Technologies Co. Ltd.

Version	Created by	Date	Remarks
01	Huawei e84081311	08.11.2018	

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The smart I-V curve diagnosis function allows you to check the health status of strings for the inverters connected to the NetEco 1000S.

## **Pre-requisites**

-You have logged in to the NetEco 1000S.

-You have logged in as the system administrator, manager, or installer.

- String parameters have been configured for inverters.

- The inverter license controls the smart I-V curve diagnosis function. To ensure that smart I-V curve diagnosis works properly, perform scheduled inspection and import the inverter license file.

#### Suggestions and Restrictions

The following conditions should be met to ensure normal use of the Smart I-V Curve Diagnosis function; otherwise, scanning will fail or be abnormal:

-The day is sunny with stable sunlight. The irradiance is at least 600 W/m2.

-The cleaning status of PV modules is consistent for a diagnosis task.

-The PV modules are clean and dry. Recommended: start the function after PV modules are cleaned or heavy rain has stopped.

-The PV modules in the same array have an identical type and model. Every PV string has the same number of PV modules connected in series.

-Currently, the supported type of PV modules is common mono crystalline silicon or common polycrystalline silicon.

## Procedure

## Step 1 Setting string details

Choose Monitor menu $\rightarrow$ select one inverter $\rightarrow$ Settings $\rightarrow$ String details setup $\rightarrow$ fill the requested data for your PV panel installed $\rightarrow$ Batch Apply



NetEco	Overview Monitor	Historical Data	Mainter	nance	System					(E	nglish(English) 🔹 🛔 admin 🗸 🔐 🚱 🛩
0 <b>6 5</b> 5	Details Alarm Settings Device Information Grid Pa Adjust total energy yield	rameters Protect Para	meters Fea	ture Parameter	s Power Adji	stment					
PV System		String Details Setup								1	Synchronize
Sun2000 6973		String Setup	PV1	PV2	PV3	PV4	PV5	PV6	☑ PV7	PV8	Concernation Conce
9.5 9.5 9.8	Device Description Device name SN 210	*Number of modules in series connection (modules/string)		]							
9 <del>3</del>	Firmware version V20	Panel Setup							н	elp of Parameter	2
8 <u>%</u>	Rated Power 36 Total String Capacity (Wp)	* Nominal Power of Modul	e (Pmax) (Wp)			* Rated Vo	oltage of Module (	Vmp) (V)			
9. <del>75</del>	O String Details Setup	* Rated Current of Module	(Imp) (A)			* Open-Ci	rcuit Voltage (Voc)	(V)			
9. <del>25</del>	Communication Parameter	* Voltage Temp Coef. (%/	C)	-0.33		* Current	Temp Coef. (%/C)		0.058		-
9 <del>2</del>	Device address Dev	Module Type		Polycrystall	ne 🔻	* Manufac	turer of Module				6973)
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#### Step 2 Loading license

Choose Maintenance $\rightarrow$ Device License Management $\rightarrow$ Upload License $\rightarrow$ Browse the file from your computer and Upload

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After you upload the license select Load License→Load all and confirm

Overview	Monitor	Historical Data	Maintenance	System			English(English) 🔻	Â Norocel123 ▼   A     0 A 114 1 418 0	2 - 123
🛛 🛞 Maintenance >	Device License M	lanagement							
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	Load All								1
	Dev Load Selecte	d PV Plant Name	SmartLogger Name	License Upload Time	License Loading Time	Loading Progress	Load status	License Status	

## Step 3 Smart I-V Curve Diagnosis

Choose Maintenance→Smart I-V Curve Diagnosis from the main menu. The Smart I-V Curve Diagnosis page is displayed:

NetEco	Overview	Monitor	Historical Data	Maintenance	nance System		English(English	) 🔻   📩 Norocel123 🗸   🔒   🍞 👻 🎩 0 🔺 114 🔒 418 🔮 123
	ve Diagnosis			Device Maintenance Device License Management	Smart I-V Curve Diagnosis			
E Start Scanning Operation Suggestion								
Dagnosis requirements. 1. The cleaning status of the PV modules in one subarray in one diagnosis task must be consistent. 2. The imaliance during the diagnosis must be at least 600 W/m (minimum imadiance requirement); otherwise, the system terminates the diagnosis automatically. 2. You are advised to clean the PV modules before the diagnosis to ensure that the test data reflects the actual status of the PV modules. 2. You are advised to perform the diagnosis between 11.00 and 13:00 to avoid shading.							he actual status of the PV modules.	
Plant-Level Task Invert	er-Level Task							💥 Delete
Task name	PV PI	lant	Inverter Quantity	Creation Time of Task	Progress State of Task	Quantity of fault Strings/String quantity	Status	Operation

## Step 4 Start Scanning.

Click Start Scanning and The Settings of Task page is displayed:

	* Task name:		
	* Task type:      Task on Plant-Level      Task	isk on Inverter-Level	5
	* PV Plant:	۹ ۵	
	B E PV System	<u>_</u>	
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	Cleaning status: O Cleaned  O Uncleaned		
En	vironmental data: Auto		



- Task name: Set this parameter to a string of a maximum of 64 characters.

- Task type:

1. Task On Plant-Level: The health check applies to strings for all inverters connected to a PV plant.

2. Task On Inverter-Level: The health check applies to all strings for an inverter.

- **PV plant:** In the PV plant area, select the SmartLoggers or inverters to be scanned.

1. An unlimited number of SmartLoggers can be scanned simultaneously.

2. A maximum of 100 inverters can be scanned simultaneously.

- Cleaning status: Specifies the cleaning status of a string. Select a value as required.

#### - Environmental data:

1. Auto: The system will automatically calculate the values of Irradiance and Temperature of panel.

2. Manually: You need to manually enter the values of

Irradiance and Temperature of panel.

#### -Click Save

After a task is set, smart I-V curve diagnosis starts immediately:

our country Operation	ouggeston							
Plant-Level Task Inverte	er-Level Task							🗰 Delete
Task name	PV Plant	Inverter quantity	Creation Time of Task	Progress State of Task	String quantity	Quantity of fault Strings	Status	Operation
o-test1		13	2017-12-21 11:26:51	35%	0		In progress	0
SmartLogger_22	wy	13	2017-12-21 11:26:51	35%	0		In progress	af 🖪

## Step 5 View the diagnosis result and diagnosis details.

1. View the diagnosis result

Click under 🗟 Operation column. The diagnosis task execution result is displayed:



						Result	iew
Exp	📑 I						
	Operation	Health condition	Task Status	PV plant	String	Inverter 🕈	
	Read The Details	Open circuit of string.	Successful	ZXC	PV1	SUN2000_29	
	Read The Details	Open circuit of string.	Successful	ZXC	PV2	SUN2000_29	
	Read The Details	Open circuit of string.	Successful	ZXC	PV3	SUN2000_29	
	Read The Details	Open circuit of string.	Successful	ZXC	PV4	SUN2000_29	
	Read The Details	Open circuit of string.	Successful	ZXC	PV5	SUN2000_29	
	Read The Details	Moderate current mismatch in string.	Successful	ZXC	PV6	SUN2000_29	
	Read The Details	Moderate current mismatch in string.	Successful	ZXC	PV7	SUN2000_29	
	Read The Details	Invalid string.	Successful	ZXC	PV8	SUN2000_29	
	Read The Details	Open circuit of string.	Successful	ZXC	PV1	SUN2000_30	
	Read The Details	Open circuit of string.	Successful	ZXC	PV2	SUN2000_30	
	Read The Details	Open circuit of string.	Successful	ZXC	PV3	SUN2000_30	
	Read The Details	Open circuit of string.	Successful	ZXC	PV4	SUN2000_30	
~	Read The Details	Open circuit of string.	Successful	ZXC	PV5	SUN2000_30	
40	View 1 - 20 of 4	Modorato current micmatch in string	Page 1 of	776	D\/6	GUNDOOD 20	

#### 2. View the diagnosis details

Click Read The Details. The diagnosis details are displayed:

