

K A C O



new energy.

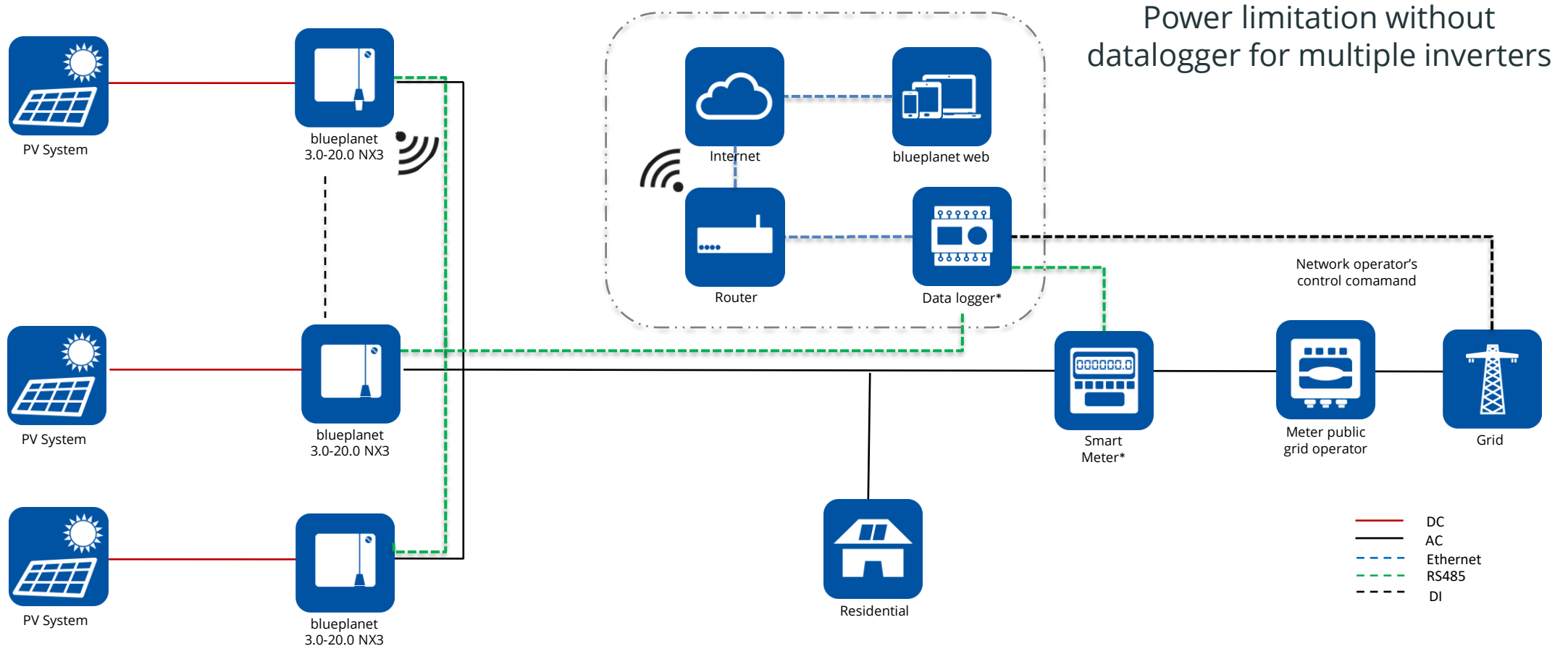
Solutions for zero feed-in

blueplanet 3.0 – 20.0 NX3

KACO new energy GmbH – A Siemens Company

Block diagram n x NX3 Inverters with data logger

Dynamic Power regulation and zero feed in



* Please refer to the documentation for information about the maximum number of devices that can be connected to the corresponding data logger. Additionally, ensure compatibility with KACO new energy products.

Direct connection to data logger

Compatible data logger and smart meters



Meteocontrol
blue log XC



Schneider iEM3155 Trafo.

- Article number: 3012543
- Direct measurement, CTs are possible for higher currents.



Siemens 7KM PAC2200

- Article number: 3015405
- Direct measurement, CTs are possible for higher currents.



Janitza UMG 96RM-EL

- Article number: 3014124
- CTs are needed

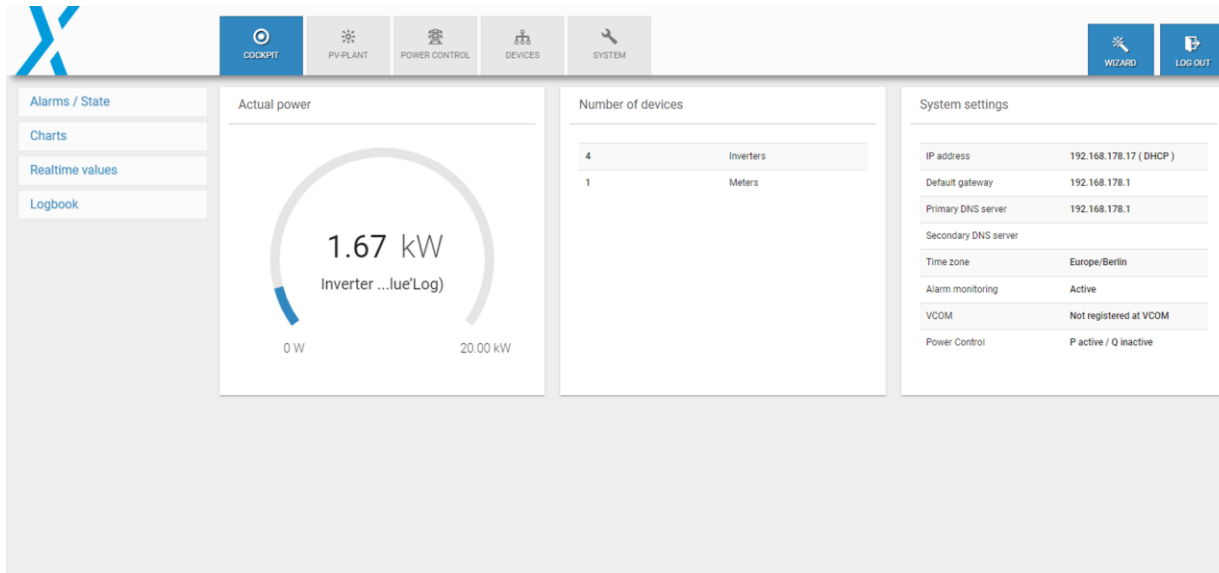


PQ plus UMD 96EL

- Article number: 3016069
- CTs are needed

Zero feed-in power activation for NX3 inverters

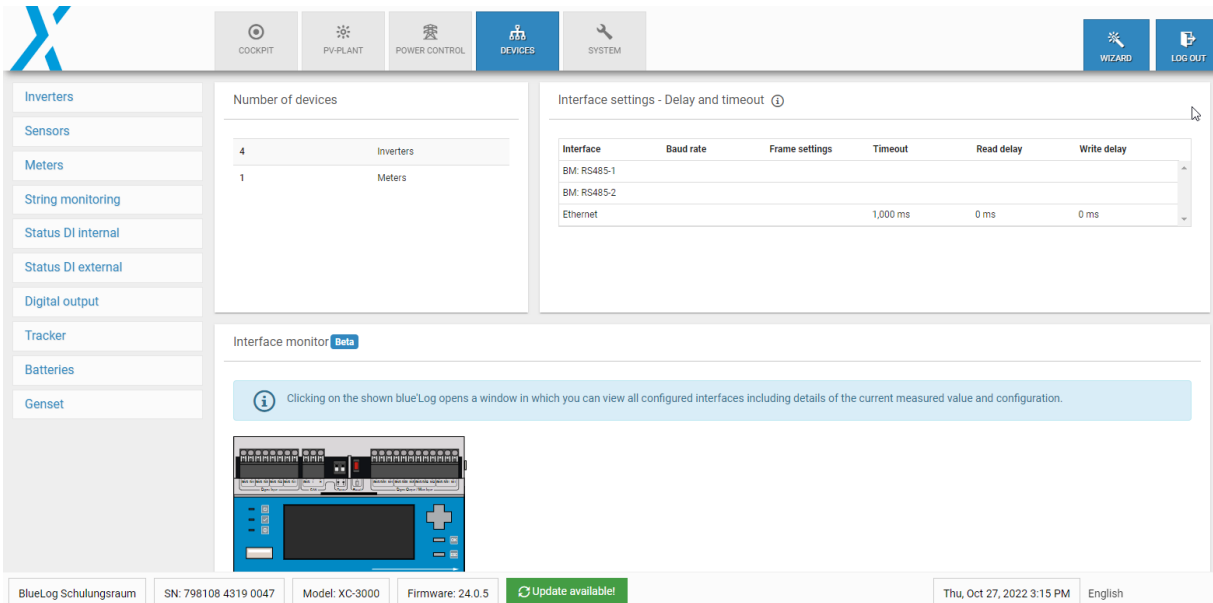
Step 1: blue log configuration



- once the inverter is started and is connected with the blue log XC, The PV plant information can be live-monitored on the tab **Cockpit**

Zero feed in power activation for NX3 inverters

Step 2: blue log configuration



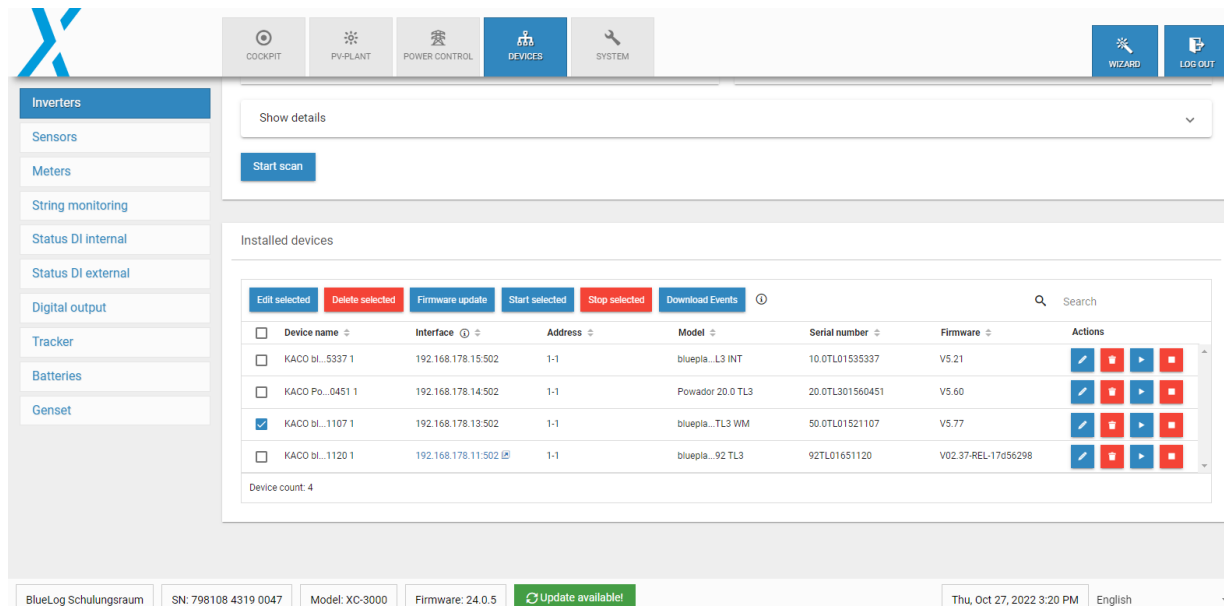
The screenshot shows the BlueLog configuration interface. The 'DEVICES' tab is selected, displaying a list of 4 devices: 1 inverter and 1 meter. The 'Interface settings - Delay and timeout' section is open, showing a table with columns for Interface, Baud rate, Frame settings, Timeout, Read delay, and Write delay. The table lists three interfaces: BM: RS485-1, BM: RS485-2, and Ethernet. The Ethernet interface has a Timeout of 1,000 ms, Read delay of 0 ms, and Write delay of 0 ms. A 'Wizard' button is visible in the top right corner of the interface.

Interface	Baud rate	Frame settings	Timeout	Read delay	Write delay
BM: RS485-1					
BM: RS485-2					
Ethernet			1,000 ms	0 ms	0 ms

















- Go to devices and click on the list of connected devices with the blue log XC.
- Select inverters if you have several inverters connected with the blue log XC.

Zero feed in power activation for NX3 inverters

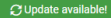
Step 3: blue log configuration



The screenshot shows the KACO BlueLog web interface. The top navigation bar includes 'COCKPIT', 'PV-PLANT', 'POWER CONTROL', 'DEVICES' (selected), and 'SYSTEM'. A 'WIZARD' and 'LOG OUT' button are also present. The left sidebar lists various system components. The main content area shows a 'Show details' dropdown and a 'Start scan' button. Below this is the 'Installed devices' section, which contains a table of inverters and a search bar.

Device name	Interface	Address	Model	Serial number	Firmware	Actions
<input type="checkbox"/> KACO bi...5337 1	192.168.178.15:502	1-1	bluepia...L3 INT	10.0TL01535337	V5.21	   
<input type="checkbox"/> KACO Po...0451 1	192.168.178.14:502	1-1	Powador 20.0 TL3	20.0TL301560451	V5.60	   
<input checked="" type="checkbox"/> KACO bi...1107 1	192.168.178.13:502	1-1	bluepia...TL3 WM	50.0TL01521107	V5.77	   
<input type="checkbox"/> KACO bi...1120 1	192.168.178.11:502	1-1	bluepia...92 TL3	92TL01651120	V02.37-REL-17056298	   

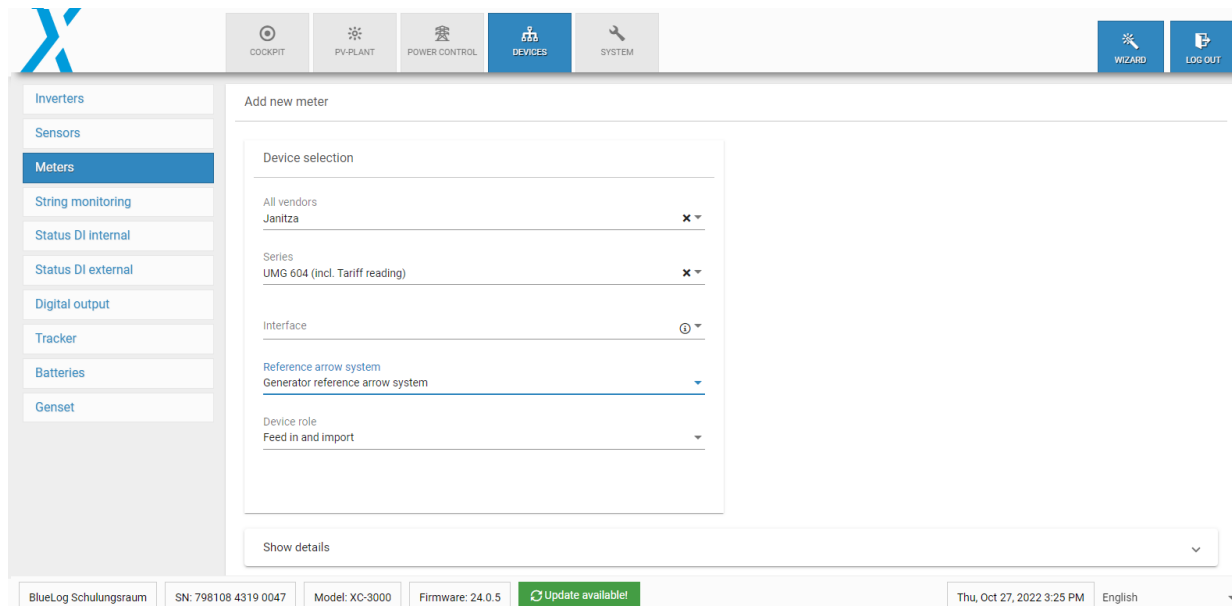
Device count: 4

Footer information: BlueLog Schulungsraum | SN: 798108 4319 0047 | Model: XC-3000 | Firmware: 24.0.5  | Thu, Oct 27, 2022 3:20 PM | English

- Select the inverter you want to control

Zero feed in power activation for NX3 inverters

Step 4: blue log configuration



The screenshot shows the 'Add new meter' configuration screen in the BlueLog interface. The left sidebar contains a navigation menu with options: Inverters, Sensors, Meters (highlighted), String monitoring, Status DI internal, Status DI external, Digital output, Tracker, Batteries, and Genset. The main content area is titled 'Add new meter' and contains a 'Device selection' form with the following fields:

- All vendors: Janitza (dropdown menu)
- Series: UMG 604 (incl. Tariff reading) (dropdown menu)
- Interface: (dropdown menu)
- Reference arrow system: Generator reference arrow system (dropdown menu)
- Device role: Feed in and import (dropdown menu)

At the bottom of the screen, there is a status bar with the following information: BlueLog Schulungsraum, SN: 798108 4319 0047, Model: XC-3000, Firmware: 24.0.5 (with a green 'Update available!' button), Thu, Oct 27, 2022 3:25 PM, and English.

- Select the connected meter and make sure that the sign of the imported power (from the grid) is negative.
- The sign can be changed using the "Reference arrow system" in the meter-setup.
- Please choose "Generator reference arrow system"
- Define the device role as "Feed in and import"

Zero feed in power activation for NX3 inverters

Step 5: blue log configuration

Installed devices

[Edit selected](#) [Delete selected](#) [Download Events](#) ⓘ

🔍 Search

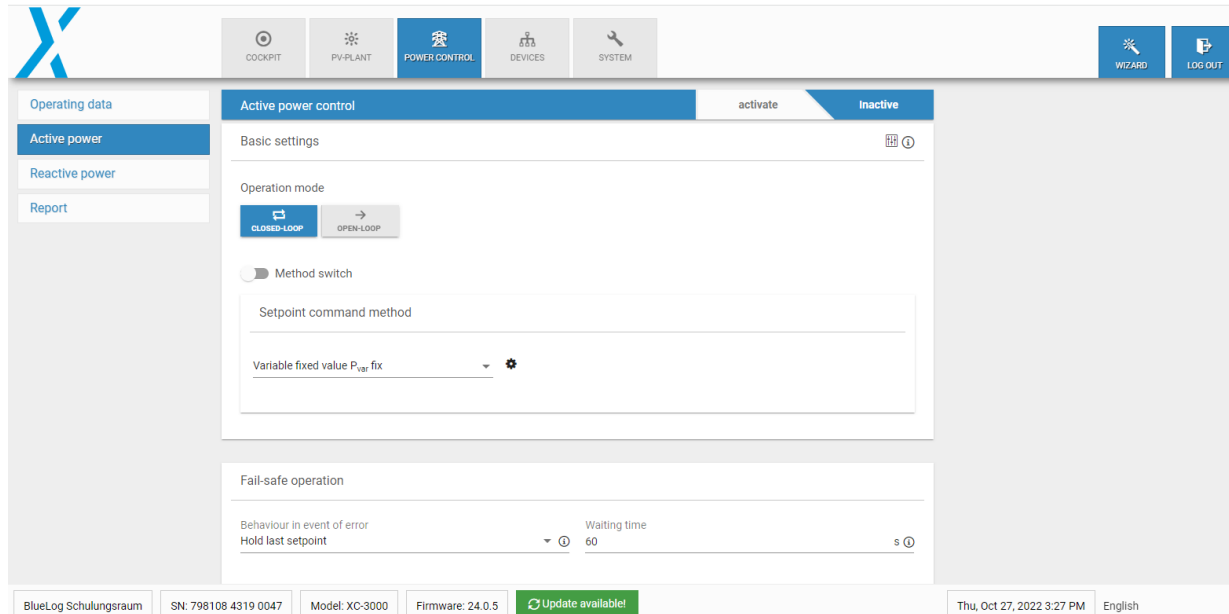
<input checked="" type="checkbox"/>	Device name ↕	Interface ⓘ	Address ↕	Model ↕	Serial number ↕	Firmware ↕	Reference arrow system ↕	Device role ↕	Pulse constant ↕	Actions
<input checked="" type="checkbox"/>	Janitza...061199	192.168.178.16	502 1	UMG 604	70061199	5.015	Load reference arrow system	Feed in and import		✎ ✖

Device count: 1

- The meter must be configured as shown here.

Zero feed-in power activation for NX3 inverters

Step 6: blue log configuration



The screenshot shows the 'Active power control' configuration page in the BlueLog interface. The page is divided into several sections:

- Navigation:** COCKPIT, PV-PLANT, POWER CONTROL (selected), DEVICES, SYSTEM, WIZARD, LOG OUT.
- Operating data:** Active power (selected), Reactive power, Report.
- Active power control:** activate / inactive tabs.
- Basic settings:** Includes a 'Method switch' toggle (currently off), 'Setpoint command method' dropdown (set to 'Variable fixed value P_{var} fix'), and a gear icon for settings.
- Fail-safe operation:** 'Behaviour in event of error' dropdown (set to 'Hold last setpoint') and 'Waiting time' input (set to 60 s).
- Footer:** BlueLog Schulungsraum, SN: 798108 4319 0047, Model: XC-3000, Firmware: 24.0.5, Update available! button, Thu, Oct 27, 2022 3:27 PM, English.

- Enable "closed loop"
- Choose setpoint command method "Pvarfix"

Zero feed-in power activation for NX3 inverters

Step 7: blue log configuration

Variable fixed value $P_{var\ fix}$

Define setpoint

Absolute value

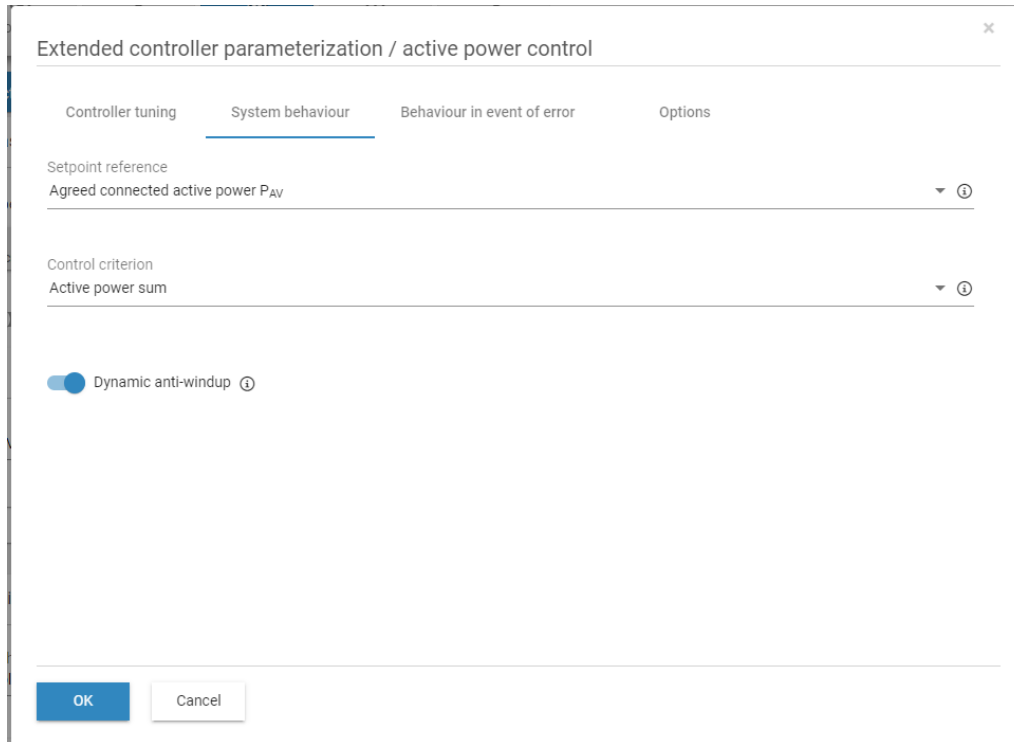
P setpoint [% P_{AV}]

0 %

- Define power setpoint (0% for zero feed in)

Zero feed in power activation for NX3 inverters

Step 8: blue log configuration



Extended controller parameterization / active power control

Controller tuning System behaviour Behaviour in event of error Options

Setpoint reference
Agreed connected active power P_{AV}

Control criterion
Active power sum

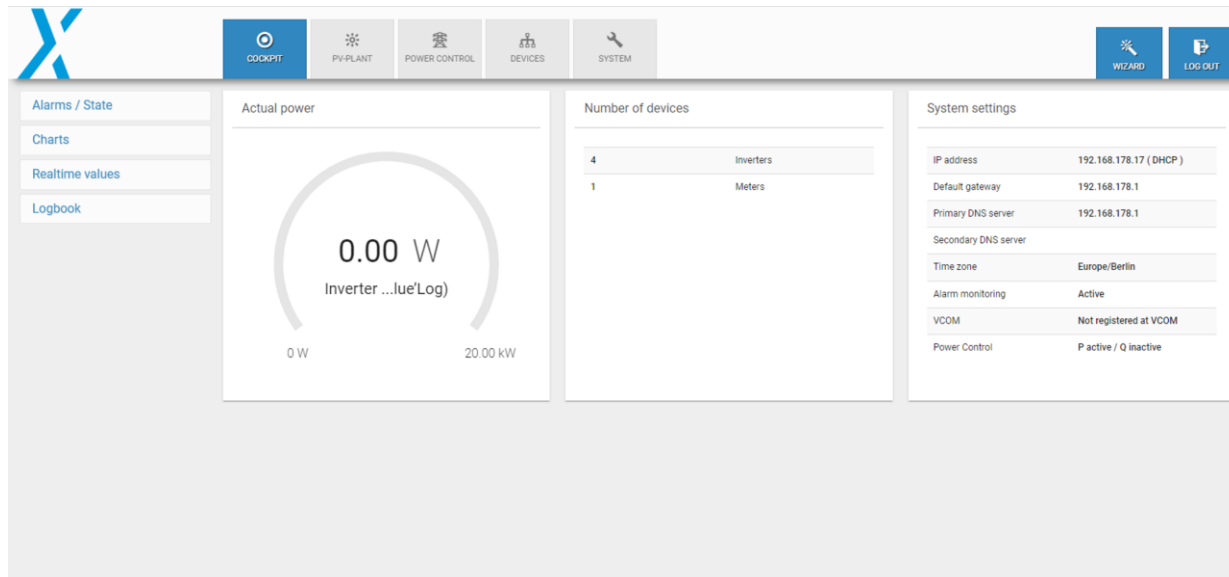
Dynamic anti-windup

OK Cancel

- Enable "Dynamic anti-windup" this could be found in "Extended controller parameterization / active power control" -> "System behaviour"
- Click on "ok" and save

Zero feed in power activation for NX3 inverters

Step 9: blue log configuration



- Go back to **Cockpit**.
- The live monitoring should appear as shown here, no power is sent to the grid, but rather to the loads (here the loads are not connected)

Direct connection to data logger

Compatible data loggers and smart meters



Solar-Log 50 (Left) & Base 100-2000 (Right)



Solar-Log™ PRO380

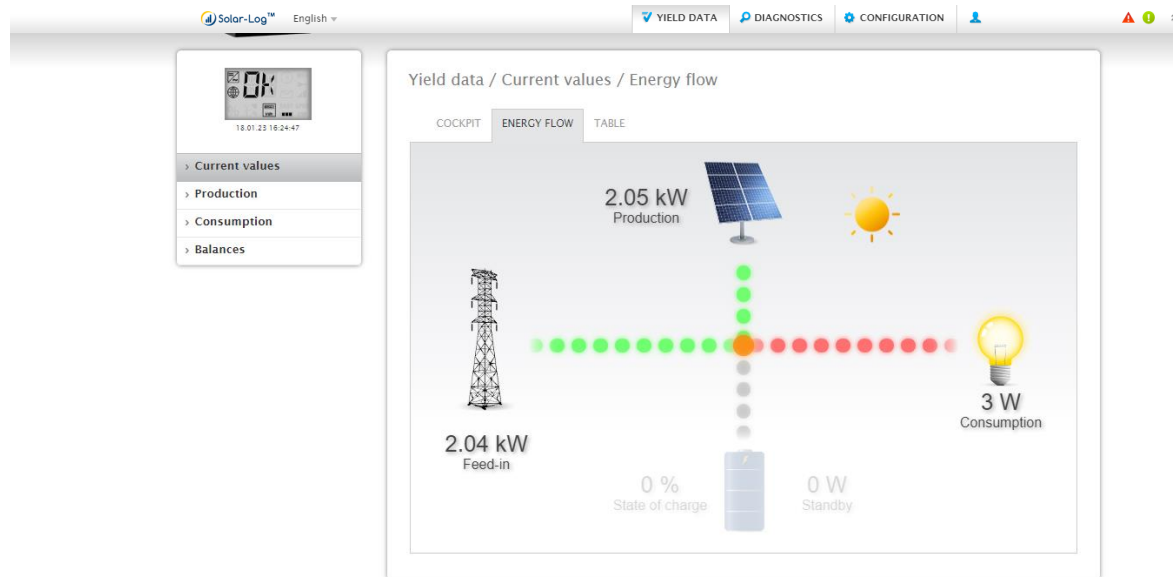


Janitza UMG 96RM-EL

- Article number: 3014124
- CTs are needed

Zero feed-in power activation for NX3 inverters

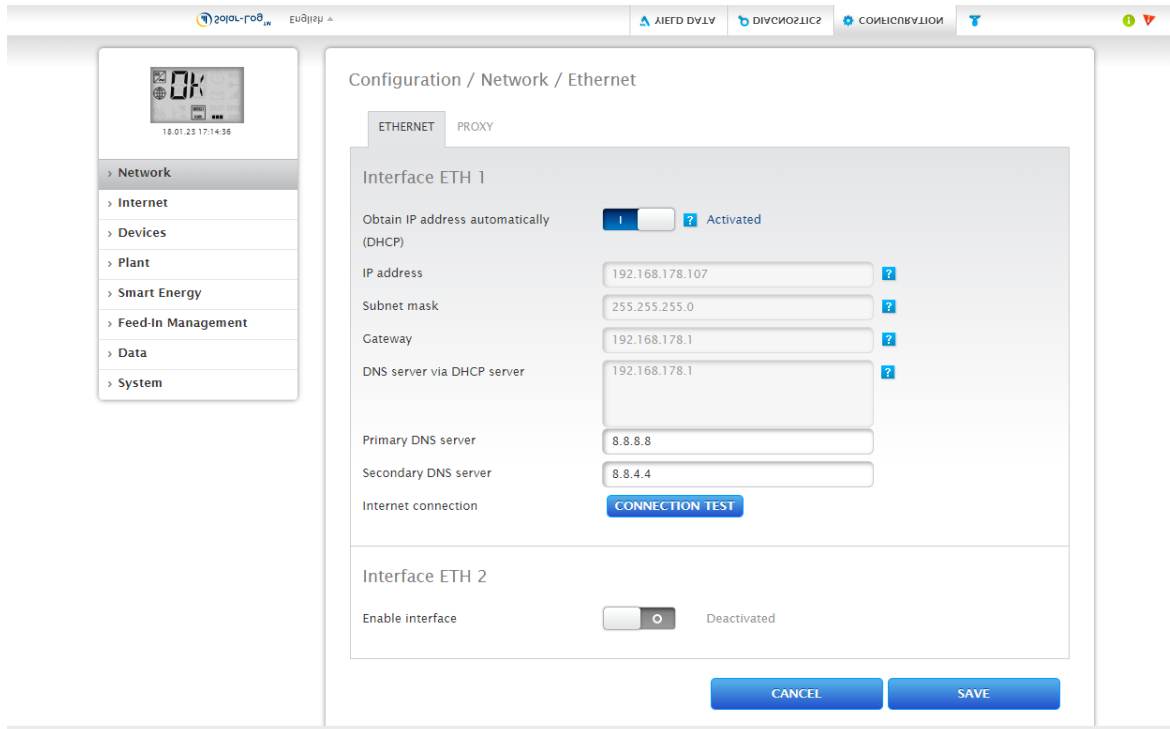
Step 1: Solar log configuration



- once the inverter is started and is connected with the solar log controller, The PV plant information can be live-monitored on the tab **Yield Data**.
- To prevent the energy pushed to the grid, the solar log has to be configured for zero feed-in.

Zero feed-in power activation for NX3 inverters

Step 2: Solar log configuration



The screenshot shows the configuration web interface for a KACO inverter. The browser address bar displays "192.168.178.1". The page title is "Configuration / Network / Ethernet". On the left, a navigation menu includes "Network", "Internet", "Devices", "Plant", "Smart Energy", "Feed-In Management", "Data", and "System". The main content area is titled "Configuration / Network / Ethernet" and has two tabs: "ETHERNET" (selected) and "PROXY". Under "ETHERNET", there are two sections: "Interface ETH 1" and "Interface ETH 2".

Interface ETH 1

- Obtain IP address automatically (DHCP): Activated
- IP address: 192.168.178.107
- Subnet mask: 255.255.255.0
- Gateway: 192.168.178.1
- DNS server via DHCP server: 192.168.178.1
- Primary DNS server: 8.8.8.8
- Secondary DNS server: 8.8.4.4
- Internet connection: CONNECTION TEST

Interface ETH 2

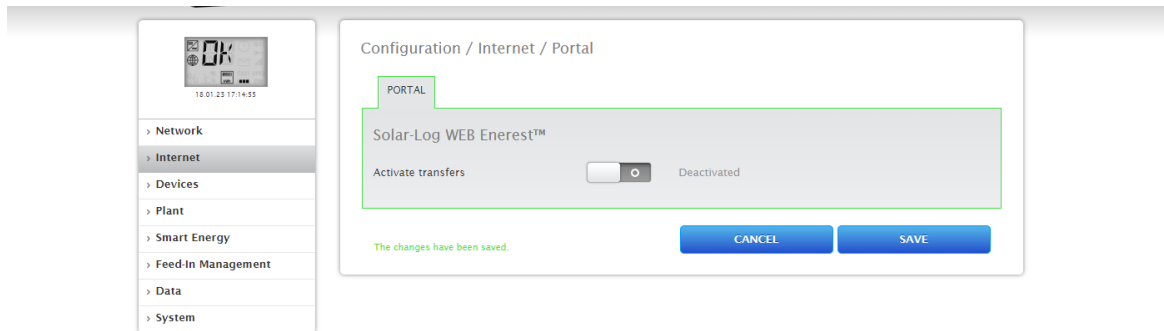
- Enable interface: Deactivated

At the bottom of the configuration area are "CANCEL" and "SAVE" buttons.

- Go to configuration, then choose network and save.

Zero feed-in power activation for NX3 inverters

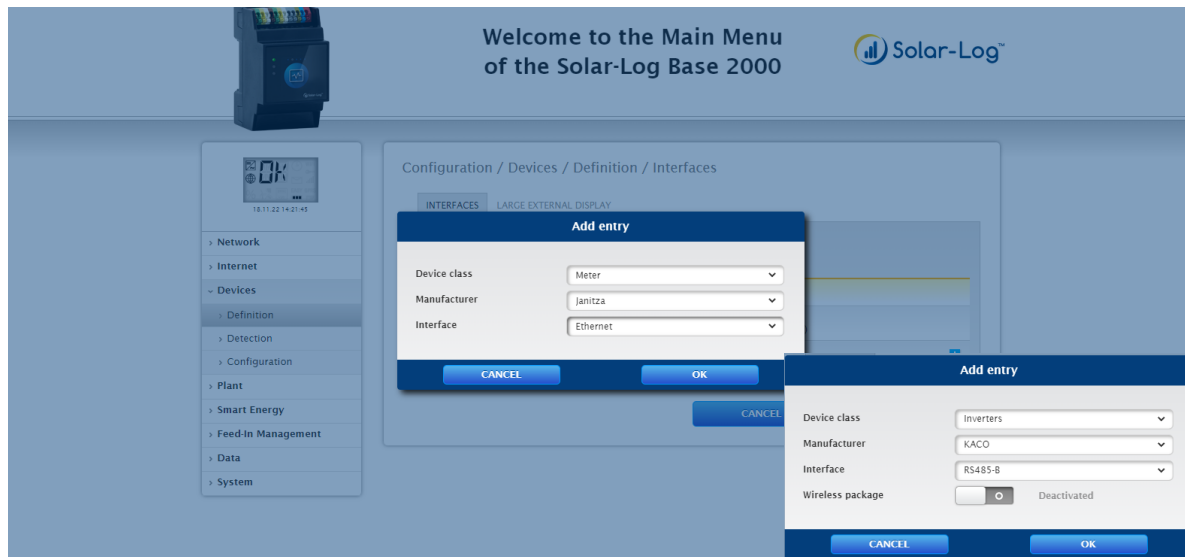
Step 3: Solar log configuration




- If only live monitoring is required, leave active transfer disabled and save.
- If remote monitoring is required, please contact Solar Log, the monitoring platform provider.

Zero feed-in power activation for NX3 inverters

Step 4: Solar log configuration



- go to Devices and select Definition , then choose network and save.
- On interfaces click on  to add new devices.
- On the **Add entry** tab, choose inverters as device class, KACO as manufacturer, and the RS485 (A or B), where the inverter is on Solar log connected.
- Do the same for Meter, here in this example Janitza is chose. Make sure to use compatible meters with Solar log.
- To check compatible devices with Solar log, visit: <https://www.solar-log.com/en/support/component-database>

Zero feed-in power activation for NX3 inverters

Step 5: Solar log configuration

Detection

Overall progress

75.0%

The detection has been completed. There were more devices or more data channels than previously found. Apply?

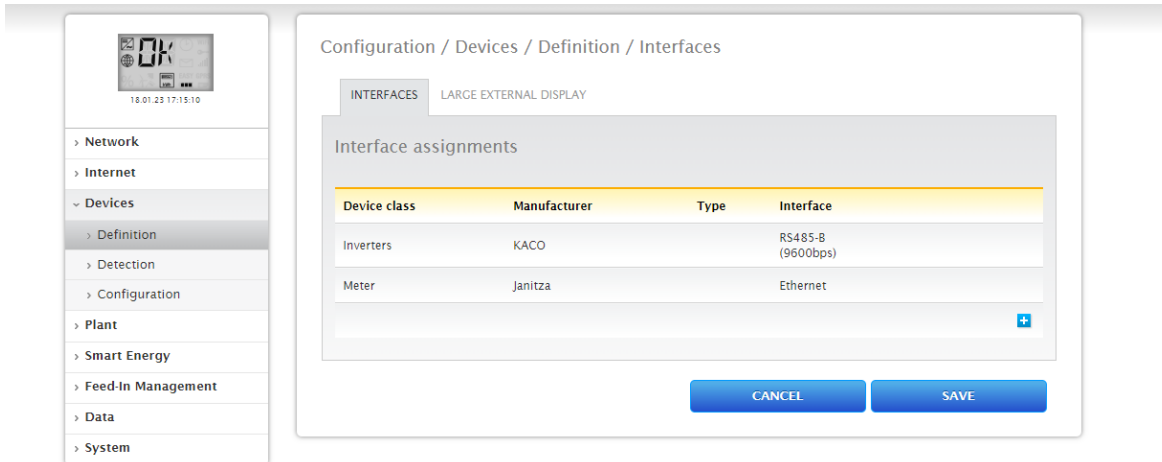
✓ Finish current measurement	
✓ KACO (RS485-B)	1 found
✓ Janitza (Ethernet)	1 found
Reformat data	
Search process finished	

NO **YES**

- Solar log controller is scanning devices, KACO inverter is found on RS485-B and Janitza on Ethernet.

Zero feed-in power activation for NX3 inverters

Step 6: Solar log configuration



The screenshot shows the 'Configuration / Devices / Definition / Interfaces' page. The left sidebar contains a navigation menu with the following items: Network, Internet, Devices (expanded), Definition (selected), Detection, Configuration, Plant, Smart Energy, Feed-In Management, Data, and System. The main content area is titled 'INTERFACES' and 'LARGE EXTERNAL DISPLAY'. Below this, there is a section for 'Interface assignments' containing a table with the following data:

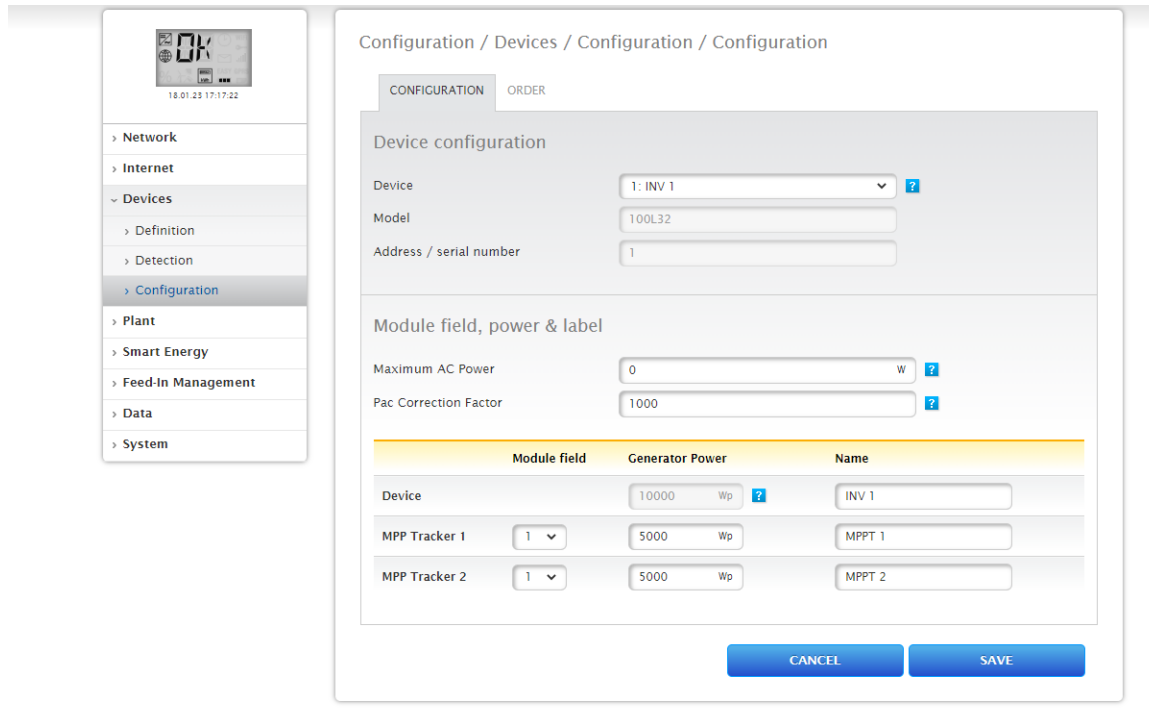
Device class	Manufacturer	Type	Interface
Inverters	KACO		RS485-B (9600bps)
Meter	Janitza		Ethernet

At the bottom of the table, there is a blue plus sign icon. Below the table, there are two buttons: 'CANCEL' and 'SAVE'.

- When the scan is complete, click save and continue.

Zero feed-in power activation for NX3 inverters

Step 7: Solar log configuration



Configuration / Devices / Configuration / Configuration

CONFIGURATION ORDER

Device configuration

Device: 1: INV 1 ?

Model: 100L32

Address / serial number: 1

Module field, power & label

Maximum AC Power: 0 W ?

Pac Correction Factor: 1000 ?

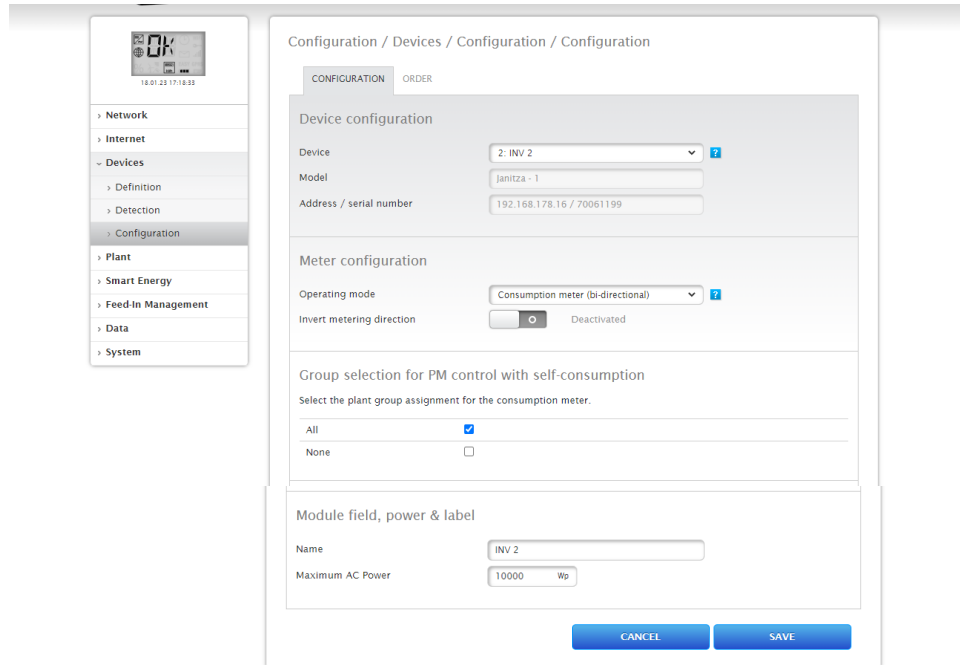
Module field	Generator Power	Name
Device	10000 Wp ?	INV 1
MPP Tracker 1	5000 Wp	MPPT 1
MPP Tracker 2	5000 Wp	MPPT 2

CANCEL SAVE

- Go to the configuration and choose **INV 1** on Device, enter the DC capacity connected to MPP Tracker 1 and MPP Tracker 2 and save.

Zero feed-in power activation for NX3 inverters

Step 8: Solar log configuration

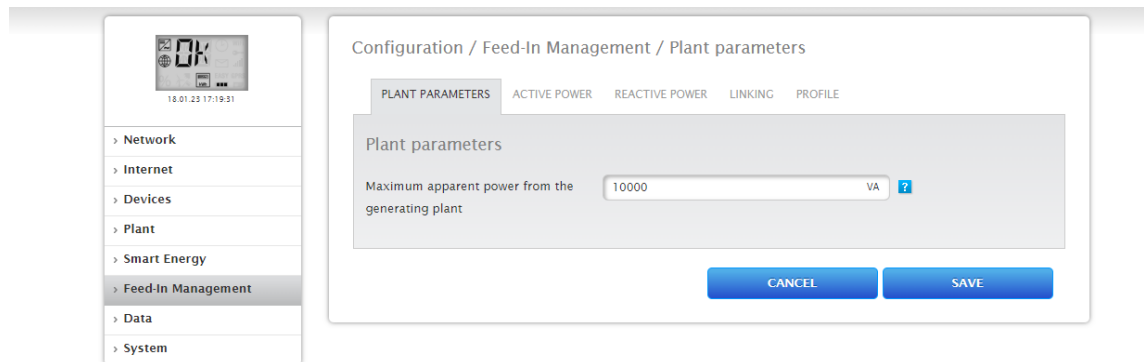


The screenshot shows a web interface for configuring a KACO inverter. On the left is a navigation menu with categories: Network, Internet, Devices (expanded to show Definition, Detection, and Configuration), Plant, Smart Energy, Feed-In Management, Data, and System. The main content area is titled 'Configuration / Devices / Configuration / Configuration' and has two tabs: 'CONFIGURATION' (active) and 'ORDER'. The 'Device configuration' section includes a dropdown for 'Device' set to '2- INV 2', a text field for 'Model' with 'janitza - 1', and a text field for 'Address / serial number' with '192.168.178.16 / 70061199'. The 'Meter configuration' section has a dropdown for 'Operating mode' set to 'Consumption meter (bi-directional)' and a toggle for 'Invert metering direction' which is currently 'Deactivated'. Below this is a 'Group selection for PM control with self-consumption' section with a sub-instruction 'Select the plant group assignment for the consumption meter.' and two radio buttons: 'All' (checked) and 'None'. The 'Module field, power & label' section has a text field for 'Name' with 'INV 2' and a text field for 'Maximum AC Power' with '10000 Wp'. At the bottom are 'CANCEL' and 'SAVE' buttons.

- Select **INV 2**, and on Meter configuration, choose **consumption Meter (bi-directional)** as operating mode and save

Zero feed-in power activation for NX3 inverters

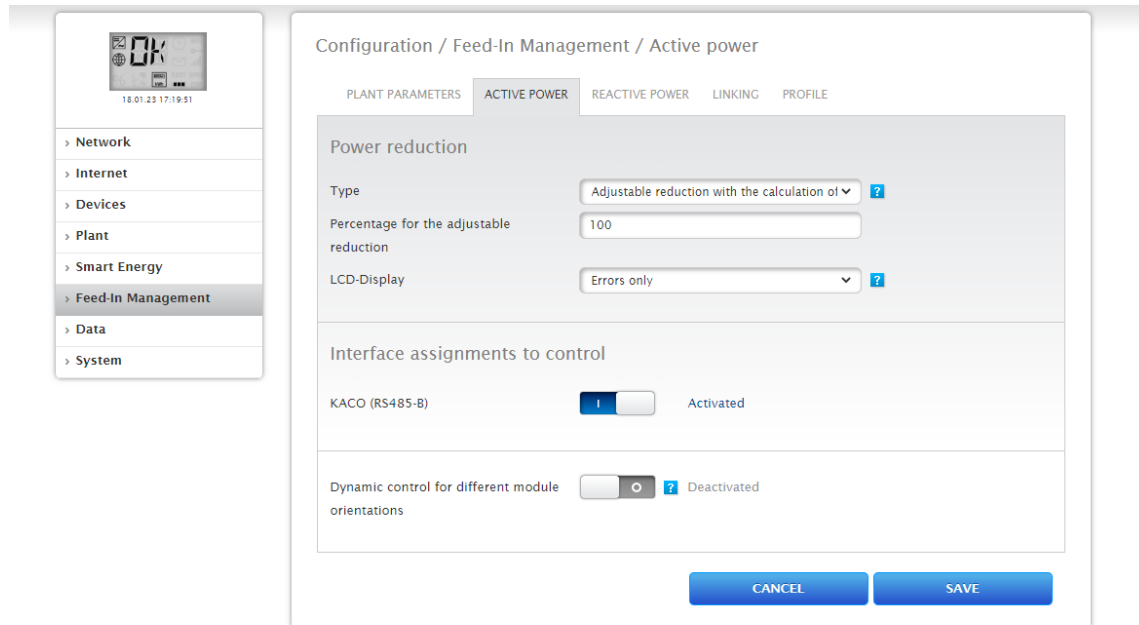
Step 9: Solar log configuration



- Go to **feed-in Management** and on **Plant Parameters** note the maximum apparent power from the solar PV plant in kVA.

Zero feed-in power activation for NX3 inverters

Step 10: Solar log configuration

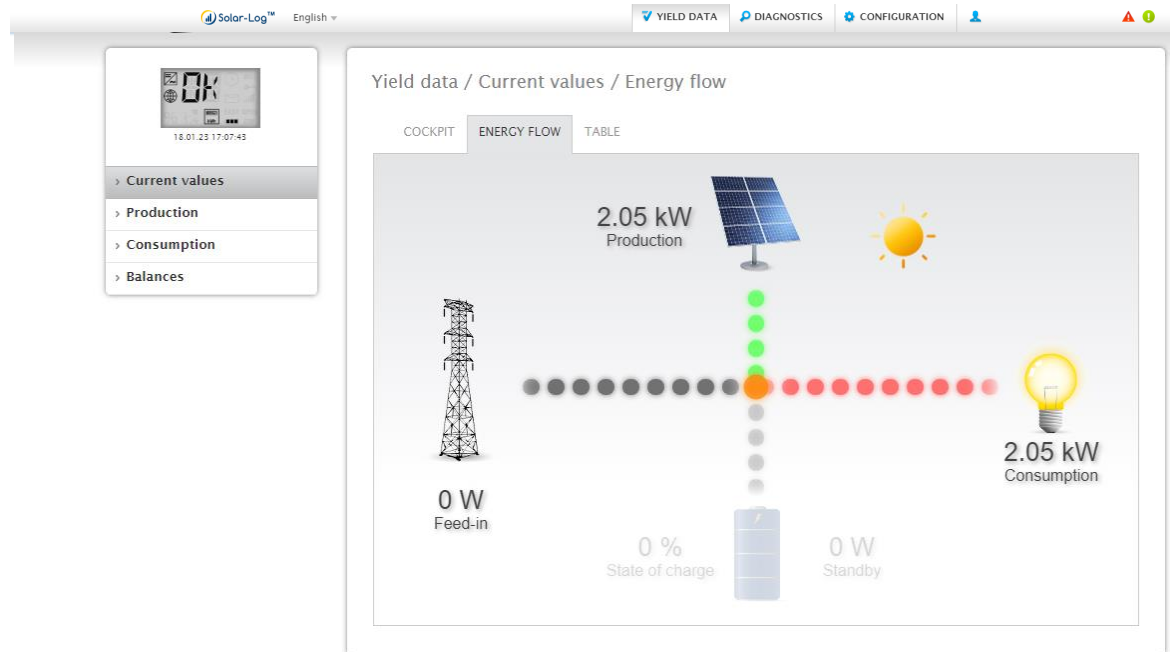


The screenshot shows the 'Configuration / Feed-In Management / Active power' screen. On the left is a navigation menu with options: Network, Internet, Devices, Plant, Smart Energy, Feed-In Management (selected), Data, and System. The main area has tabs for PLANT PARAMETERS, ACTIVE POWER (selected), REACTIVE POWER, LINKING, and PROFILE. Under 'Power reduction', there are three settings: 'Type' set to 'Adjustable reduction with the calculation of' (with a dropdown arrow and a help icon), 'Percentage for the adjustable reduction' set to '100', and 'LCD-Display' set to 'Errors only' (with a dropdown arrow and a help icon). Under 'Interface assignments to control', 'KACO (RS485-B)' is shown with a toggle switch turned on and labeled 'Activated'. 'Dynamic control for different module orientations' is shown with a toggle switch turned off and labeled 'Deactivated'. At the bottom are 'CANCEL' and 'SAVE' buttons.

- Move to **Active Power**, and choose **Adjustable reduction with the calculation of Self-Consumption**, then write down 100% in the **adjustable reduction**.
- KACO (RS485-B) must be kept activated, finally save and continue

Zero feed-in power activation for NX3 inverters

Step 11: Solar log configuration



- Go back to **Yield Data**, and choose **current values**.
- The live monitoring should appear as shown here, no power is sent to the grid, but rather to the loads.



Thank you for
your attention.

KACO new energy GmbH
A Siemens Company

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