

How to connect Sunways hybrid inverter with Reduxi controller

Integrate the Sunways hybrid inverter with the Reduxi Controller via Modbus RTU. Maximum flexibility and cost and energy reductions of up to 30%.

The Sunways logo, featuring the word "sunways" in a stylized font. "sun" is in orange and "ways" is in dark grey.

🔧 Sunways hybrid inverter · Reduxi Controller

🌐 Modbus RTU (RS485)

📄 Modbus unit ID 247 (default) · 9600 bits/s

📄 IN THIS ARTICLE

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1 Technical documentation

Sunways documents are available in the Sunways download center. The user manual of the STH 15~33KTL hybrid inverter is an example.

- [Sunways download center](#) – Manuals and datasheets for Sunways inverters
- [STH 15~33KTL-HT user manual \(PDF, EN\)](#) – User manual for the 15 to 33 kW hybrid inverter

MODELS IN THIS MANUAL

STH-15KTL-HT, STH-17KTL-HT, STH-20KTL-HT,
STH-25KTL-HT, STH-29.9KTL-HT, STH-30KTL-HT,
STH-33KTL-HT

BATTERY

Lithium battery with BMS, communication via
CAN or RS485

2 Required equipment

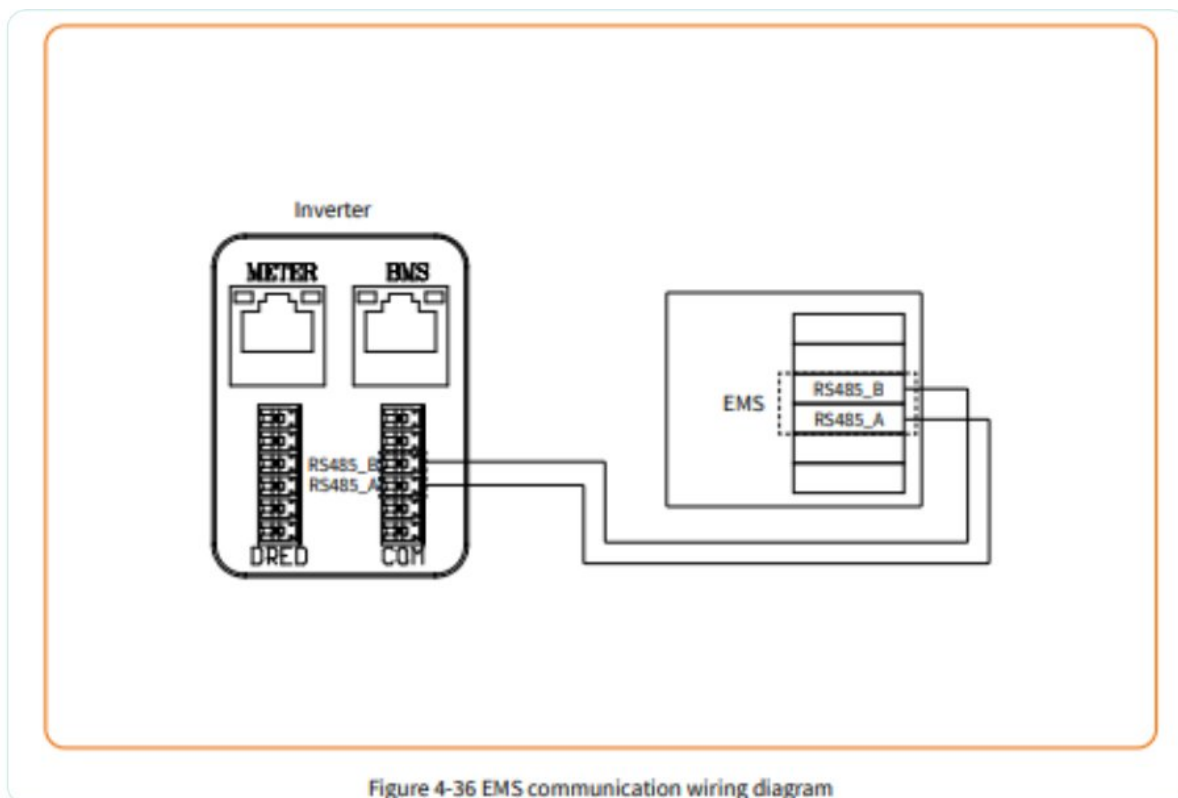
You need these components:

- ☐ Reduxi Controller
- ☐ Sunways hybrid inverter with RS485 (EMS) interface
- ☐ RS485 cable between the inverter and the Reduxi Controller
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

3 Connect the Reduxi Controller to the Sunways inverter

The physical connection is required because Modbus RTU is used to access the hybrid inverter interface.

The picture shows the EMS communication wiring from the Sunways manual (Figure 4-36). Reduxi takes the role of the EMS. The **RS485_A** and **RS485_B** terminals of the inverter connect to the RS485 terminals of the EMS.



EMS communication wiring diagram (Sunways manual, Figure 4-36)

Text description of this image

4 Log in to the Reduxi web interface

You can open the Reduxi web interface in two ways:


REMOTE

Reduxi app

Via tunnel connection · works from anywhere



Web browser

In the local network · via IP address or reduxि.local

4.1 Via the Reduxi app

1 Open the app and log in

Launch the Reduxi app on your smartphone or tablet and log in with your credentials.

2 Open Reduxi devices

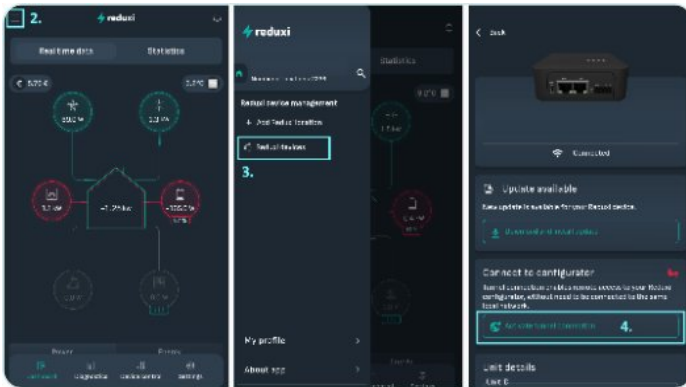
Tap the menu icon (three lines, top left) and select **Reduxi devices**.

3 Activate the tunnel connection

Switch on the tunnel connection and wait a moment until it is active.

4 Open the configurator

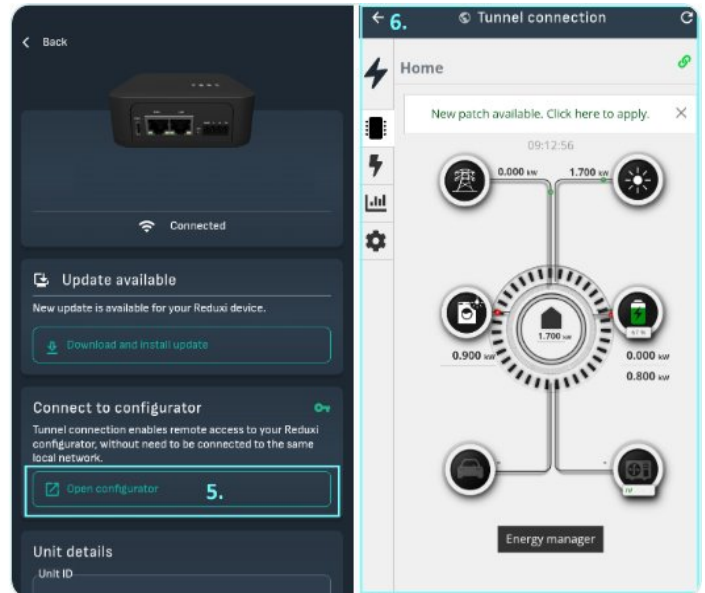
Tap **Open configurator**. The Reduxi web interface opens.



Activate the tunnel connection (step 3)

Text description of this image

Screenshot of three Reduxi mobile app screens side by side, with cyan boxes and number badges 2 to 4. Left screen (dashboard, dark theme): menu icon at top left marked with a box and badge 2; 'reduxi' logo; tabs 'Real time data' (active) and 'Statistics'; price 5.79



Open configurator (step 4)

2. Text description of this image

4.2 Via a web browser

1 Open the login page

On a device in the same network, open a web browser and enter the controller's IP address or `http://reduxi.local`. You can find the controller's IP address in your router's device list or in the Reduxi app under **Reduxi devices**.

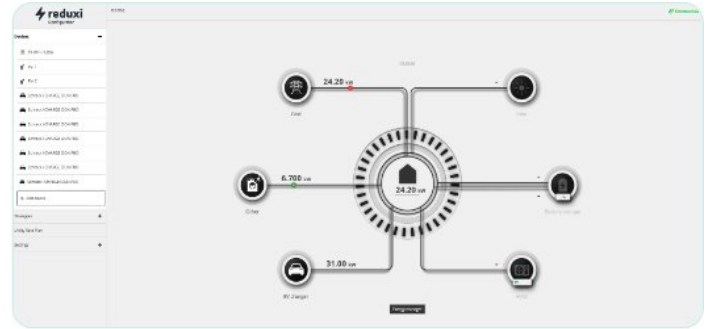
2 Log in

Username: `admin` · Password: `admin` (factory default)



Reduxi Controller login screen

Text description of this image



Controller web interface after login

2. Text description of this image

Screenshot of the Reduxi Configurator web interface

5 Add the Sunways inverter to Reduxi

After you connect the Reduxi Controller and the hybrid inverter, register the inverter as a new device.

5.1 Basic settings

Log in locally to the [Reduxi Configurator](#) on the controller (see [Point 4](#)) and press the **Add device** button.

reduxi[⚡]

CONFIGURATOR

Devices



Strategies



+ Add device

+ Add strategy

Settings

Profile

The Add device button

Text description of this image

In the first step (basic settings), select these parameters:

- Device type: **Hybrid inverter**
- Type: **Sunways Hybrid Inverter**
- Name: a name of your choice

The categories **Solar power plant**, **Battery** and **Grid** are preselected.

1 Basic settings 2 Communication channel 3 Advanced settings

Basic settings

Device type *

Hybrid inverter

Type *

Sunways Hybrid Inverter

Categories *

Solar power plant x Battery x Grid x

Name *

Sunways Hybrid Inverter

Back Next

Basic settings: device type, type, categories and name

Text description of this image

Press **Next**.

5.2 Communication settings

The second step configures the communication channel for Modbus RTU. It establishes the link between the Reduxi Controller and the Sunways hybrid inverter. The values below are the ones shown in the screenshot:

PARAMETER	VALUE
Connection	Local serial port
Port	Port 1 (the port you connected the RS485 cable to)
Baud rate	9600 bits/s
Data bits	8
Stop bits	1
Parity	None
Modbus unit ID	247 (default)
PV	Yes (is PV installed on the inverter)
Battery	Yes (is a battery installed on the inverter)

Communication channel and device configuration

Connection *

Local serial port

Port *

Port 1

Baud rate *

9600 bits/s

Data bits *

8

Stop bits *

1

Parity *

None

Modbus unit ID *

247

PV *

Yes

Is PV installed on the inverter?

Battery *

Yes

Is battery installed on the inverter?

Back

Test communication

Next

Communication channel and device configuration

Text description of this image



Note

The Modbus unit ID is set to 247 by default.

5.3 Test communication

Click **Test communication** below the communication parameters. It checks whether the Modbus RTU connection between the devices works. It reads the inverter once and saves nothing.

Modbus unit ID *

247

PV *

Yes

Is PV installed on the inverter?

Battery *

Yes

Is battery installed on the inverter?

Back

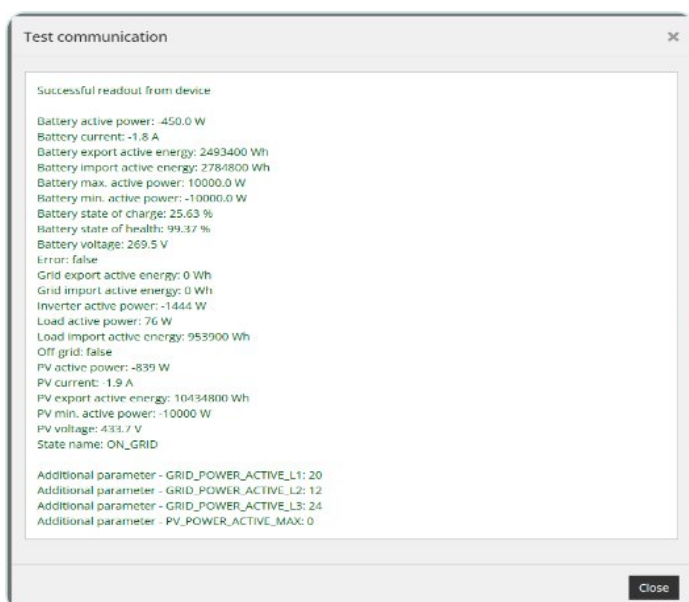
Test communication

Next

The **Test communication** button

Text description of this image

The test returns one of two results:



1. Communication works properly

Text description of this image



2. Communication does not work properly

2. Text description of this image

Screenshot of a dialog titled Test communication with a close x at the top right. Message in red text: Unable to communicate with device. Dark button at the bottom right: Close.

If the test succeeds, press **Next** to continue with the advanced settings.

5.4 Advanced settings

Use the advanced settings only if the special needs of the location require it. By default, you do not need to change anything. Press **Done** to create the device: only **Done** creates it.

1
3

2

Basic settings
Communication channel
Advanced settings

Advanced settings

Do you want to set data saving interval?

☒ No

Default: 1 min

Do you want to set reading delay?

☒ No

Default: 1000 ms

Do you want to set writing delay?

☒ No

Default: 1000 ms

Do you want to set power generation limits and capabilities?

☒ No

Do you want to set power consumption limits and capabilities?

☒ No

Do you want to limit communication with the device to read-only?

☒ No

Default: No

Do you want to invert direction for energy import and export?

☒ No

Default: No

L1 is connected to main feed

L2 is connected to main feed

L3 is connected to main feed

Back

Done

Advanced settings (defaults)

Text description of this image

6 Check the readings

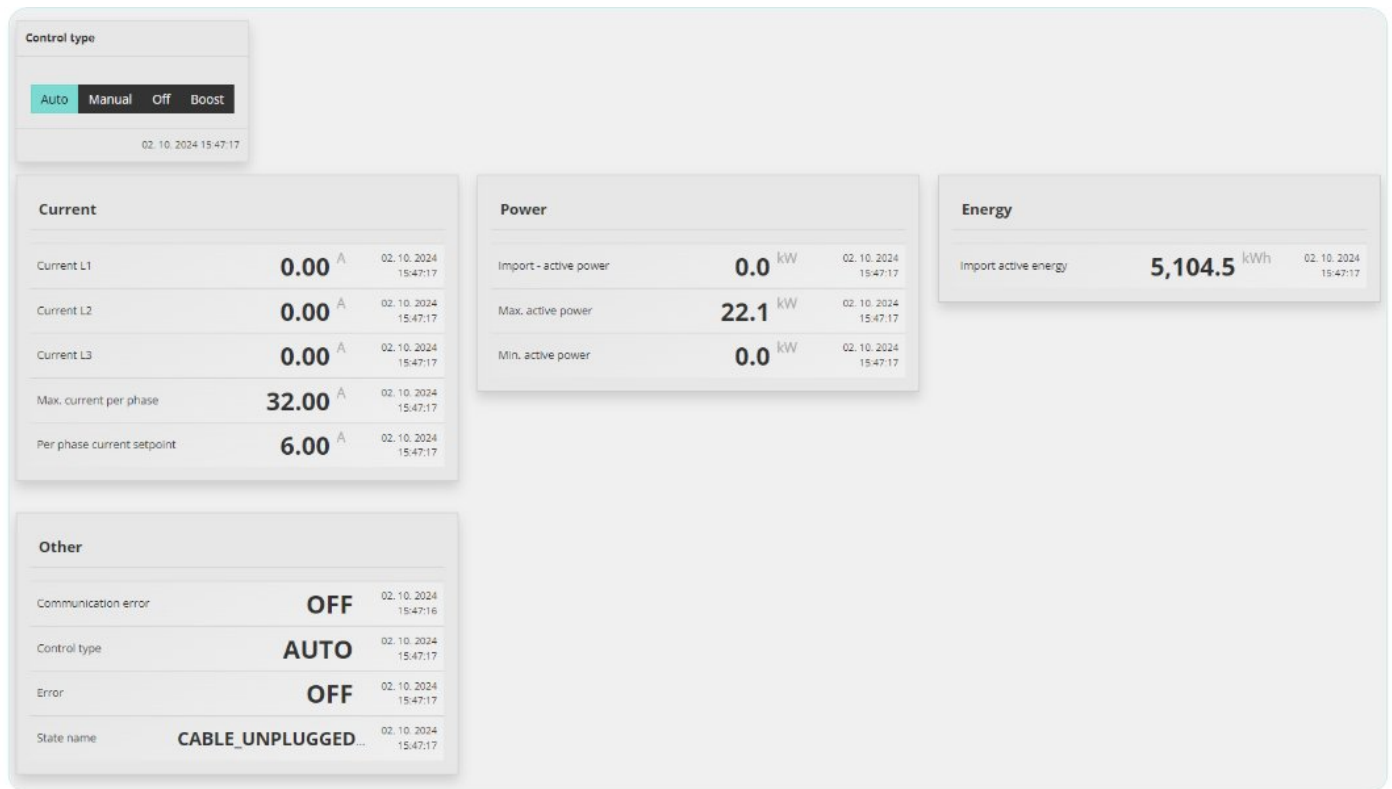
6.1 Last measurements

Check the readings under **Devices – Sunways Hybrid Inverter – Last measurement** in the Reduxi Configurator.

Reduxi Knowledge Base

How to connect Sunways hybrid inverter with Reduxi controller

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Last measurements of the Sunways hybrid inverter

Text description of this image

Once the device is added in the Reduxi Configurator, you can also monitor it in the [Reduxi cloud application](#).

✓ Summary

Preparation (Points 1–2): Get the Sunways documents. Prepare the Reduxi Controller, the Sunways hybrid inverter with RS485 interface and the RS485 cable.

Sunways inverter (Point 3): Connect the RS485 terminals of the inverter to the Reduxi Controller. Reduxi takes the role of the EMS.

Add to Reduxi (Points 4–5): Log in to the Reduxi Configurator and add the device. Enter the Modbus RTU settings, test the communication and press Done.

Go live (Point 6): Check the readings under Last measurement. Monitor the inverter in the Reduxi cloud application.

→ Common issues

ISSUE	SOLUTION
Test communication fails	Check that the Port setting matches the Reduxi port the RS485 cable is connected to. Check the Modbus unit ID (default 247).
PV or battery values are missing	Set PV and Battery to Yes only if PV or a battery is installed on the inverter.
Open configurator does not open or stays empty	The tunnel is not active yet. Wait about 30 seconds and check that the controller is online.
Login with <code>admin</code> is rejected	The password was changed during installation. Ask the installer. The Reduxi account password does not work here.
<code>reduxi.local</code> does not load	Your device is not in the same network as the controller. Use the IP address or the tunnel connection.
Communication test fails, device shows offline	Check reachability, IP address / port / unit ID, and that the protocol is enabled on the device.

→ Related articles

Matching guides from the Reduxi knowledge base:



Sunways download center

Manuals and datasheets for Sunways inverters.



Device setup guides

All step-by-step guides for connecting devices to the Reduxi Controller



Strategies for the Reduxi Controller

Energy manager and other strategies explained