

How to connect Sunwoda Energy SW12KH3UT all-in-one (RJ45-RS485) with Reduxi controller

Connect the Sunwoda Energy SW12KH3UT ALL IN ONE to the Reduxi Controller via RS485 (RJ45) and Modbus RTU.

🔧 Sunwoda SW12KH3UT ALL IN ONE · Reduxi Controller

🌐 Modbus RTU via RS485 (RJ45)

📡 57600 bit/s, 8N1 · Modbus address 1 (default)



Sunwoda SunESS Power all-in-one (manufacturer image)

Text description of this image

IN THIS ARTICLE

1. Technical documentation
2. Required equipment
3. Connect the Reduxi Controller to the Sunwoda ALL IN ONE
 - Prepare the communication cable
 - Access the connector
 - RS485 connection
4. Configure the Sunwoda ALL IN ONE
 - DEBUG switch
 - RS485 communication parameters
 - Modbus RTU settings
5. Log in to the Reduxi web interface
 - Via the Reduxi app
 - Via a web browser
6. Add the Sunwoda ALL IN ONE to Reduxi
 - Basic settings
 - Communication settings
 - Test communication
7. Check the readings
8. Summary
9. Common issues
10. Related articles

1 Technical documentation

Sunwoda publishes the SunESS Power documents on the product page.

- [SunESS Power product page](#) – Sunwoda Energy product page with downloads
- [SunESS Power user manual \(PDF\)](#) – User manual V1.4
- [Quick Installation Guide \(PDF\)](#) – Short installation guide
- [SunESS Power brochure \(PDF\)](#) – Product overview

SW5KH3UT, SW6KH3UT, SW8KH3UT, SW10KH3UT, SW12KH3UT, SW15KH3UT (5 to 15 kW), each in variants H1 to H4 (number of battery modules)

2 Required equipment

You need these components:

- ☐ Reduxi Controller
- ☐ Sunwoda Energy SW12KH3UT ALL IN ONE
- ☐ Standard network cable (RJ45), prepared as described in [Point 3](#)
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

3 Connect the Reduxi Controller to the Sunwoda ALL IN ONE

3.1 Prepare the communication cable

Use a standard network cable (RJ45). The wire colors follow this pinout:

PIN	WIRE COLOR	FUNCTION
1	white–orange	
2	orange	
3	white–green	
4	blue	
5	white–blue	
6	green	
7	white–brown	RS485 A
8	brown	RS485 B



RJ45 connector, pins 1 to 8

Text description of this image

3.2 Access the connector

On the **ALL IN ONE** device, open the protective cover (maintenance port).

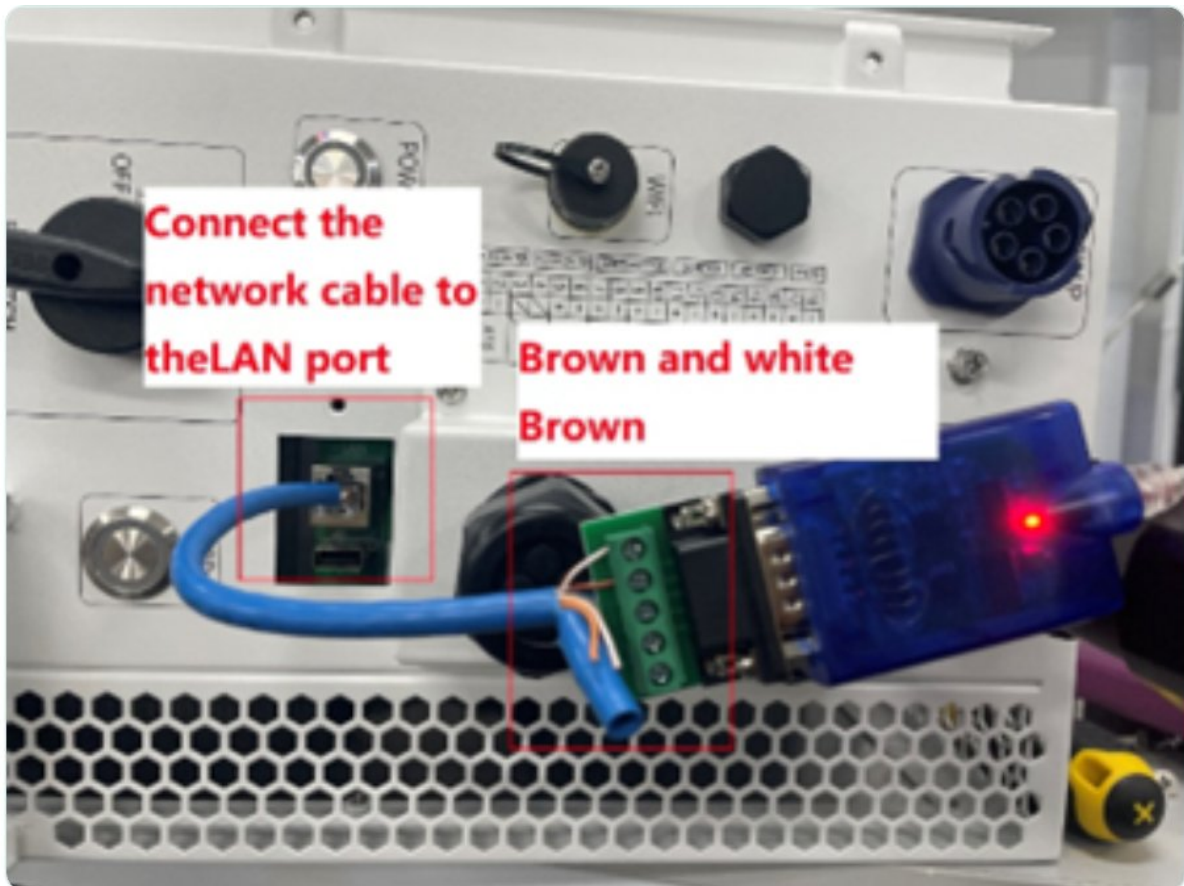


Open the maintenance port

Text description of this image

3.3 RS485 connection

Connect the **LAN (RJ45) port** of the ALL IN ONE device to the Reduxi Controller with the prepared network cable.



Network cable in the LAN port; brown and white–brown wires carry RS485

Text description of this image



Note

The picture shows an EMS module. In our case, you can connect the cable directly to the Reduxi Controller.

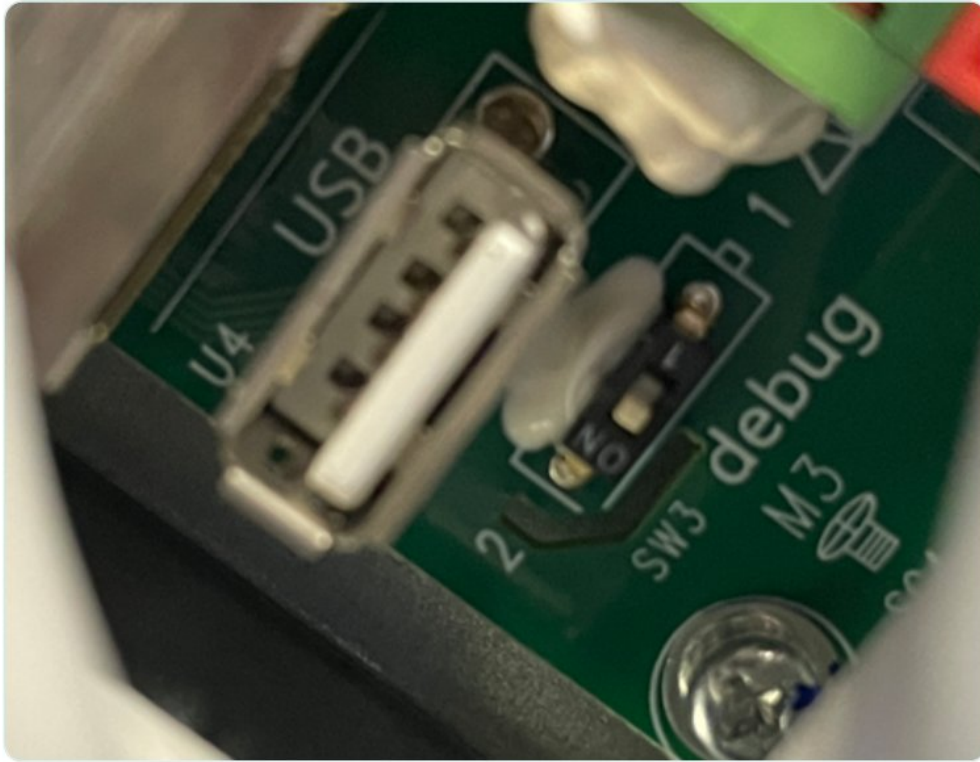
RS485 pinout:

- Pin 7 (white–brown): **RS485 A**
- Pin 8 (brown): **RS485 B**

4 Configure the Sunwoda ALL IN ONE

4.1 Set the DEBUG switch

Next to the RJ45 port on the inverter, find the **DEBUG** switch. Set it to **position 2 (ON)**.



The DEBUG switch

Text description of this image



Note

With default settings, RS485 communication works without additional configuration when the DEBUG switch is set to 2 (ON).

4.2 RS485 communication parameters

PARAMETER	VALUE
Baud rate	57600
Data format	1 start bit, 8 data bits, no parity, 1 stop bit

4.3 Modbus RTU settings

PARAMETER	VALUE
Communication address	1 to 247 (default: 1)
Supported functions	03H , 04H , 10H
Read-only register range	0 to 1500
Read/write register range	0 to 1000

5 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 `reduxi.local`



5.1 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

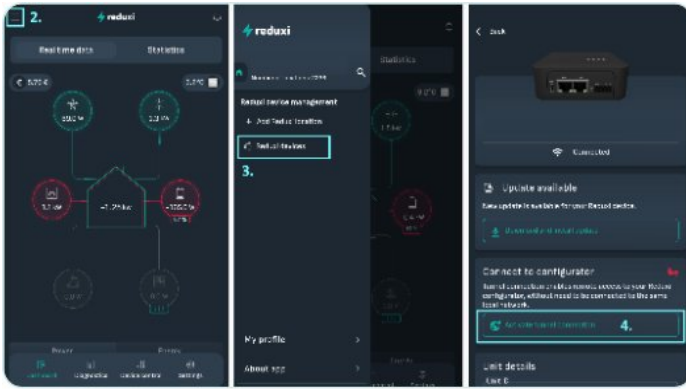
Activate the tunnel connection

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

4

Open the configurator

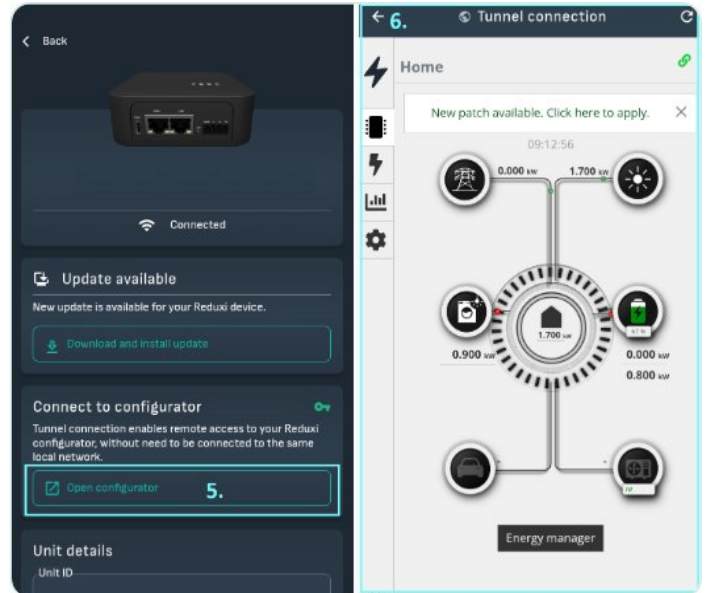
Tap **Open configurator**. The Reduxi web interface opens.



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)

Text description of this image

Screenshot of the Reduxi mobile app showing the 'Unit details' screen with a '5.' badge and the 'Tunnel connection' screen with a '6.' badge.

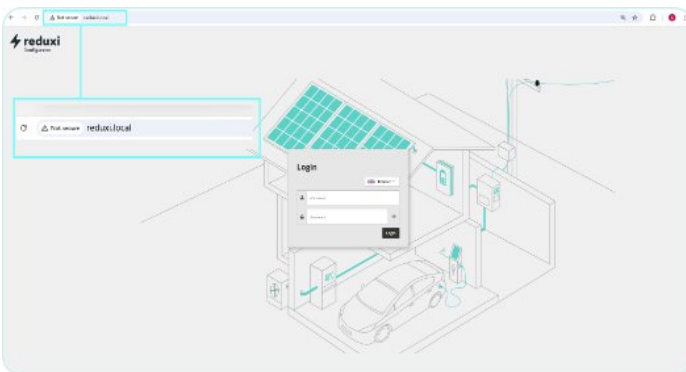
5.2 Via a web browser

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**.

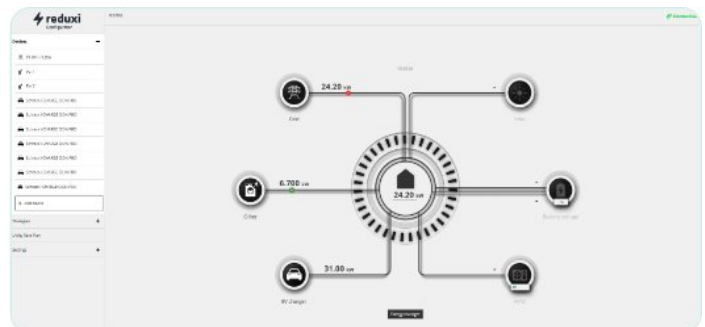
2 Log in

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

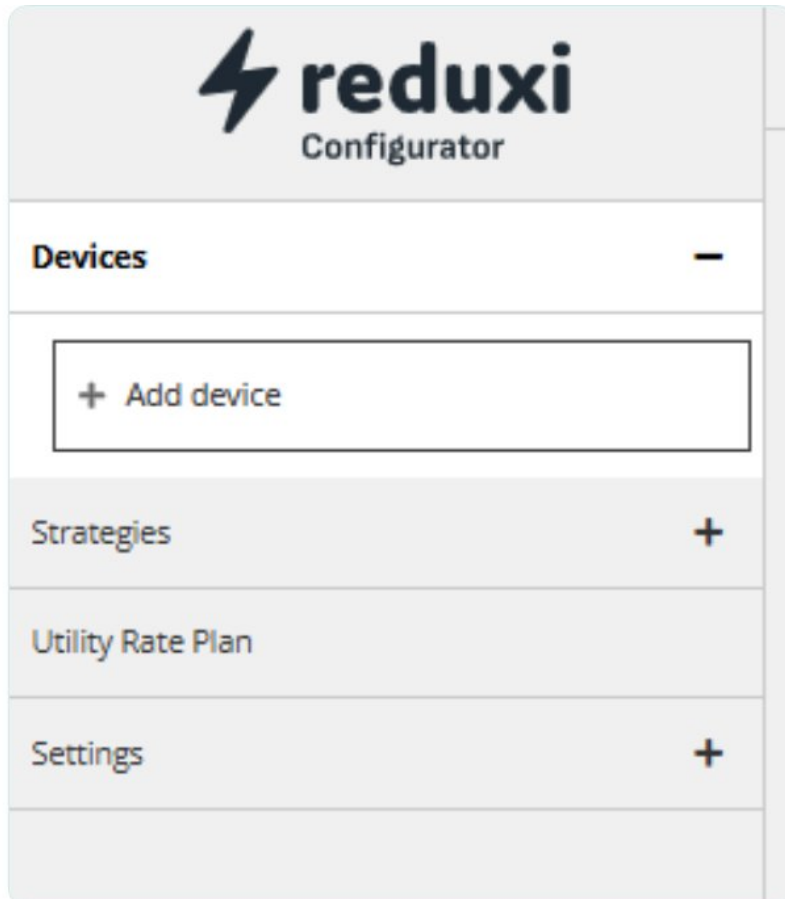
Screenshot of the Reduxi Configurator web interface

6 Add the Sunwoda ALL IN ONE to Reduxi

Use these steps to add a new device or to edit an existing one.

6.1 Basic settings

Log in locally to the [Reduxi Configurator](#) on the controller (see [Point 5](#)) and press the **Add device** button. Then select the device you want to add under **Basic settings**.



The Add device button

Text description of this image

In the first step, configure the basic parameters of the device:

- Device type: choose the device type
- Type: choose the type
- Name: a name of your choice

1

Basic settings

2

Communication channel

Basic settings

Device type *

Type *

Name *

Back

Next

Basic settings: device type, type and name

Text description of this image

Press **Next**.

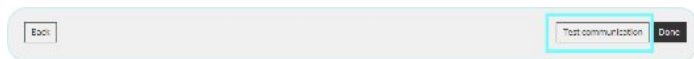
6.2 Communication settings

Enter the communication parameters of the device. Use the values from [Point 4](#):

PARAMETER	VALUE
Connection	Local serial port
Port	The port of the Reduxi Controller you connected the cable to
Baud rate	57600 bits/s
Data bits	8
Stop bits	1
Parity	None
Modbus unit ID	Default 1 (range 1 to 247)

6.3 Test communication

Click **Test communication** at the bottom of the wizard. It reads the Sunwoda ALL IN ONE once and saves nothing. If the test succeeds, click **Done**: only **Done** creates the device.



The *Test communication* button

Text description of this image

Screenshot of the bottom button bar of a Reduxi Configurator page. Left: button 'Back'. Right: button 'Test communication' (marked with a cyan box) and dark button 'Done'.



The *Done* button

2. Text description of this image

Communication channel and device configuration

7 Check the readings

7.1 Last measurements

After communication is established, check the values under **Devices – your Sunwoda device – Last measurement** in the Reduxi Configurator as an additional test.

✓ Summary

Preparation (Points 1–2): Get the Sunwoda documents. Prepare the Reduxi Controller, the Sunwoda ALL IN ONE and a standard RJ45 network cable.

Sunwoda ALL IN ONE (Points 3–4): Wire RS485 A to pin 7 and RS485 B to pin 8 of the RJ45 cable. Connect it to the LAN port. Set the DEBUG switch to position 2 (ON).

Add to Reduxi (Points 5–6): Log in to the Reduxi Configurator and add the device. Enter 57600 bit/s, 8 data bits, 1 stop bit, no parity and the Modbus address. Test the communication and press Done.

Go live (Point 7): Check the readings under Last measurement.

→ Common issues

ISSUE	SOLUTION
Test communication fails	Check the wiring of the A/B lines (pin 7 = RS485 A, pin 8 = RS485 B), the position of the DEBUG switch (position 2, ON) and the communication parameters (57600 bit/s, 8N1, address 1 by default).
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:



SunESS Power product page

Sunwoda Energy product page with manual, installation guide and brochure.



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