

How to connect Sofar 1-70KTL G1-G2 inverters with Reduxi controller

Integrate the Sofar 1-70KTL G1-G2 string inverter with the Reduxi Controller via Modbus RTU. Maximum flexibility and cost and energy reductions of up to 30%.



🔧 Sofar 1-70KTL G1-G2 · Reduxi Controller

🌐 Modbus RTU (RS485)

📖 Reduxi Port 1 or Port 2 · Modbus unit ID and rated power required

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1 Technical documentation

Sofar documents are available in the Sofar download center. The user manual of the 10-15KTL-G2 string inverter is an example of the available documents.

- [Sofar download center](#) – Manuals and datasheets for Sofar inverters
- [SOFAR 10-15KTL-G2 user manual \(PDF, EN\)](#) – Example user manual for the 10-15 kW string inverter

2 Required equipment

You need these components:

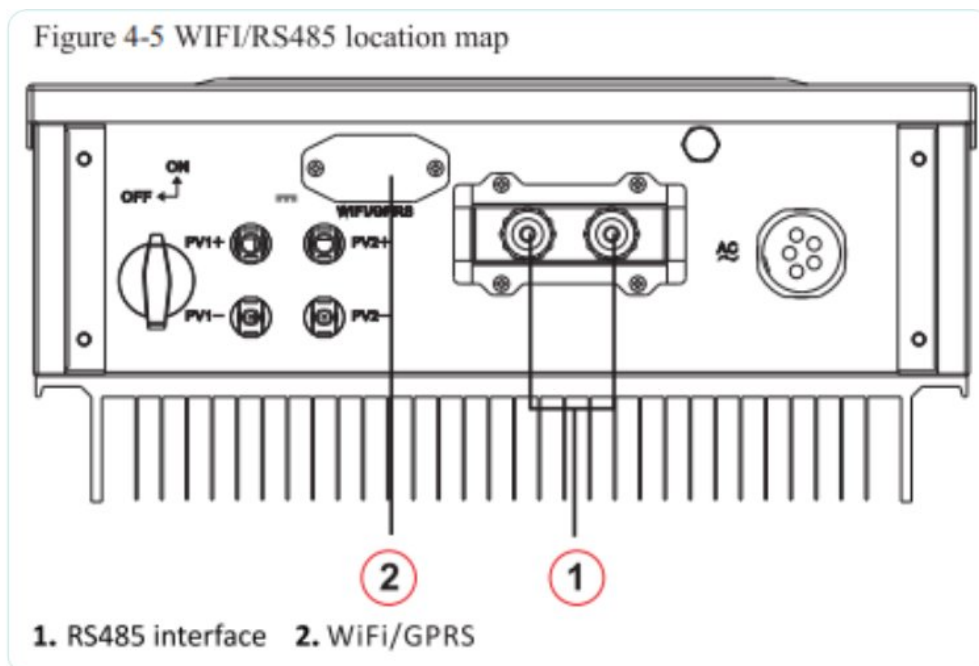
- ☐ Reduxi Controller
- ☐ Sofar 1-70KTL G1-G2 string inverter with RS485 interface
- ☐ RS485 cable between the inverter and Port 1 or Port 2 of the Reduxi Controller
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

3 Connect the Reduxi Controller to the Sofar inverter

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

3.1 Locate the RS485 interface on the inverter

The picture shows the location of the Modbus communication connectors on the inverter. Item 1 is the RS485 interface.

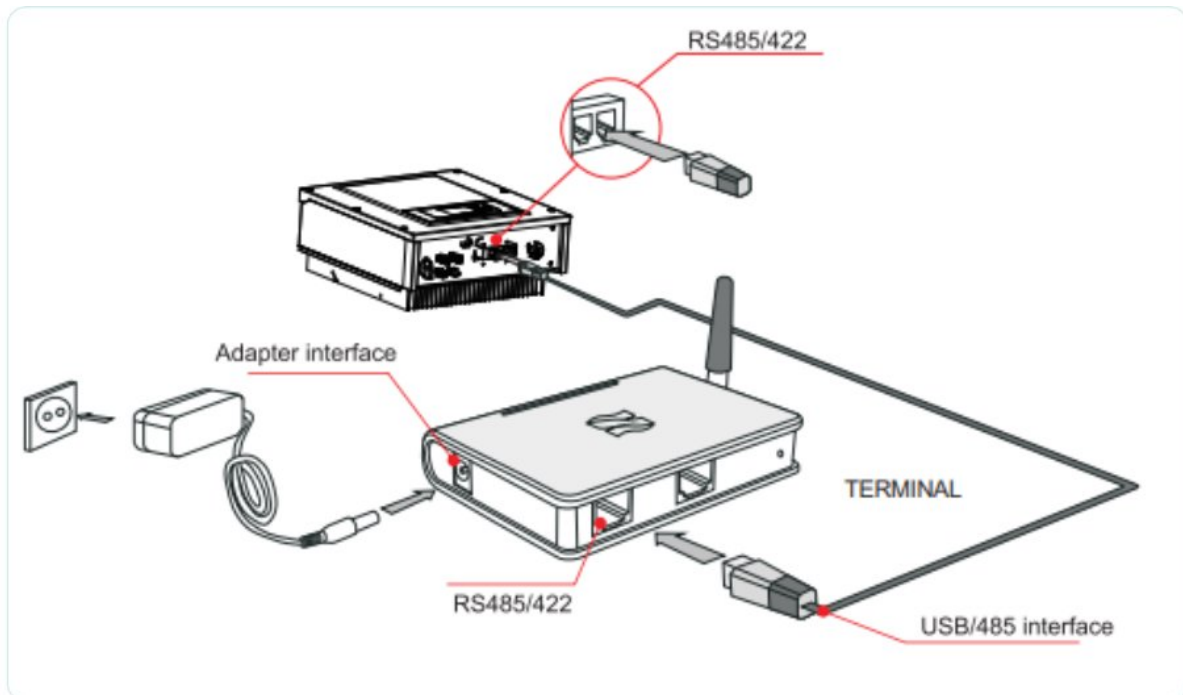


Location of the RS485 interface (1) and WiFi/GPRS (2)

Text description of this image

3.2 Connect the RS485 cable

The picture shows how the physical connection is established. Reduxi takes the role of the terminal. Instead of the USB/485 interface, use the **Port 1** or **Port 2** interface on the Reduxi Controller.



RS485 connection to the inverter, Reduxi in the role of the terminal

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

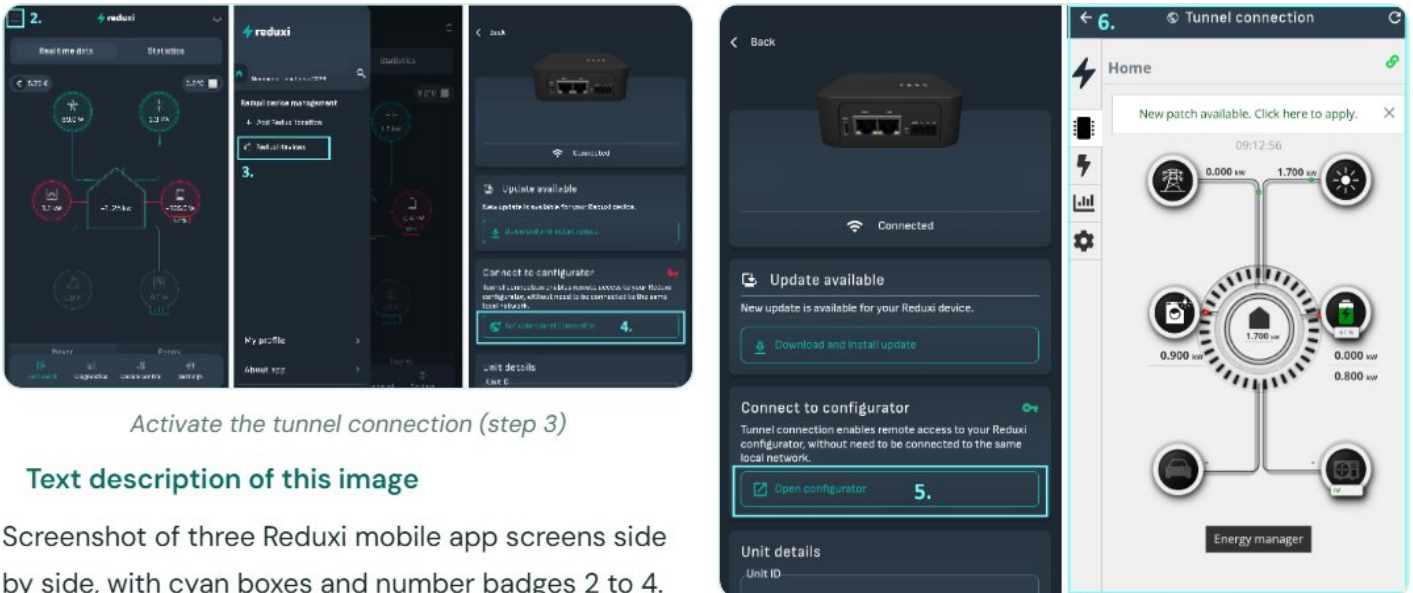
Activate the tunnel connection

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)

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

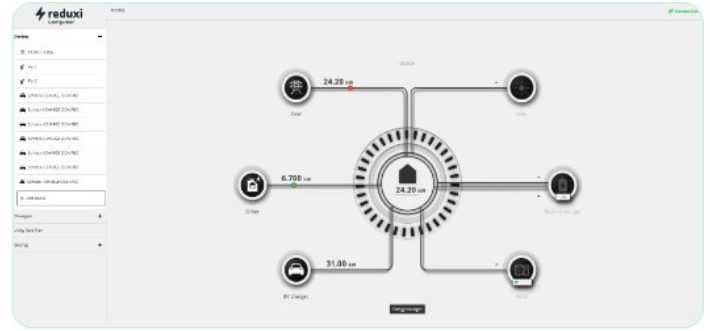
Log in

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 Sofar inverter to Reduxi

After you connect the Reduxi Controller and the string 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.



Devices



+ Add device

Strategies



Utility Rate Plan

Settings



The Add device button

Text description of this image

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

- Device type: Solar power plant
- Type: Sofar 70KTL G1-G2
- Name: a name of your choice

1 Basic settings

2 Communication channel

Basic settings

Device type *

Solar power plant

Type *

Sofar 70KTL G1 G2

Name *

Sofar

Back Next

Basic settings: device type, type 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 Sofar string 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	1 (required)
Rated power of inverter [kW]	10 in the screenshot (required): enter the rated power of your inverter

1

Basic settings

2

Communication channel

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 *

1

Rated power of inverter [kW] *

10

kW

Back

Test communication

Done

Communication channel and device configuration

Text description of this image

The fields **Modbus unit ID** and **Rated power** must be set.

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. If the test succeeds, click **Done**: only **Done** creates the device.

Modbus unit ID *

1

Rated power of inverter [kW] *

10

kW

Back

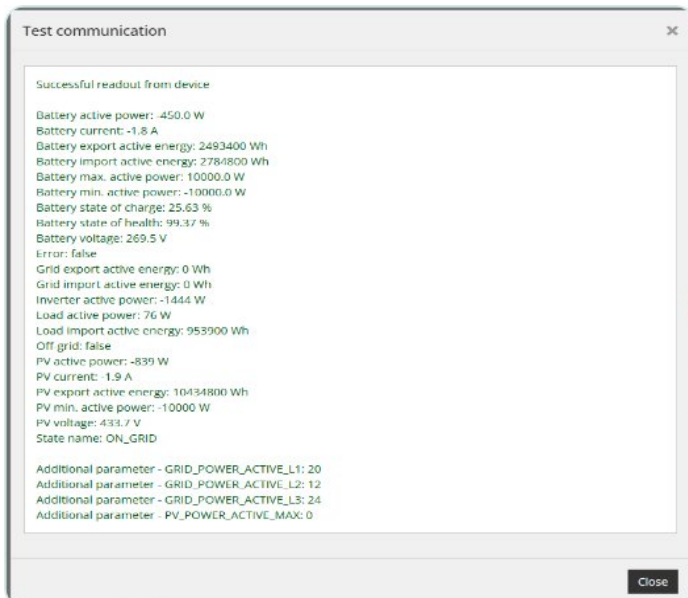
Test communication

Done

The **Test communication** button

Text description of this image

The test returns one of two results:



1. Communication works properly



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.

Text description of this image

6 Check the readings

6.1 Last measurements

Check the readings under **Devices – Sofar String Inverter – Last measurement** in the Reduxi Configurator.

Control type
Auto Manual Off Boost
02.10.2024 15:47:17

Current

Current L1	0.00 A	02.10.2024 15:47:17
Current L2	0.00 A	02.10.2024 15:47:17
Current L3	0.00 A	02.10.2024 15:47:17
Max. current per phase	32.00 A	02.10.2024 15:47:17
Per phase current setpoint	6.00 A	02.10.2024 15:47:17

Power

Import - active power	0.0 kW	02.10.2024 15:47:17
Max. active power	22.1 kW	02.10.2024 15:47:17
Min. active power	0.0 kW	02.10.2024 15:47:17

Energy

Import active energy	5,104.5 kWh	02.10.2024 15:47:17
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Other

Communication error	OFF	02.10.2024 15:47:16
Control type	AUTO	02.10.2024 15:47:17
Error	OFF	02.10.2024 15:47:17
State name	CABLE_UNPLUGGED...	02.10.2024 15:47:17

Last measurements of the Sofar string 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 Sofar documents. Prepare the Reduxi Controller, the Sofar inverter with RS485 interface and the RS485 cable.

Sofar inverter (Point 3): Find the RS485 interface on the inverter. Connect it to Port 1 or Port 2 of the Reduxi Controller.

Add to Reduxi (Points 4–5): Log in to the Reduxi Configurator, add the device and enter the Modbus RTU settings. Set Modbus unit ID and rated power. 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 (Port 1 or Port 2). Check the Modbus unit ID.
Device cannot be completed	The fields Modbus unit ID and Rated power must be set.
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:



Sofar download center

Manuals and datasheets for Sofar 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