

How to connect AlphaESS Smile Hybrid Series to Reduxi

Cut energy costs by up to 70%: Reduxi integrates AlphaESS Smile series hybrid inverters via Modbus TCP/IP or RTU.

🔌 AlphaESS Smile series hybrid inverter · Reduxi Controller

🌐 Modbus TCP/IP (LAN or Wi-Fi dongle) or Modbus RTU

📡 TCP port 502 · Modbus unit ID 85 (default)



AlphaESS Smile hybrid energy storage system

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1 Technical documentation

Manufacturer documents for the AlphaESS Smile series:

- [AlphaESS SMILE-G3 three phase 4/6/8/10 kW](#) – Product page from the manufacturer
- [Datasheet SMILE-G3-S3.6/S5/B5](#) – PDF, EN
- [Datasheet SMILE-G3-T4/T5/T6/T8/T10](#) – PDF, EN

2 Required equipment

Prepare the following, depending on the connection you use:

- ☐ Reduxi Controller (installed and online)
- ☐ AlphaESS Smile hybrid inverter with the latest firmware
- ☐ Modbus TCP/IP via LAN: Ethernet cable to the inverter
- ☐ Modbus TCP/IP via Wi-Fi: Wi-Fi dongle with the latest firmware
- ☐ Modbus RTU: Ethernet cable with RJ45 connector for the RS 485 wires (see [Point 3](#))
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

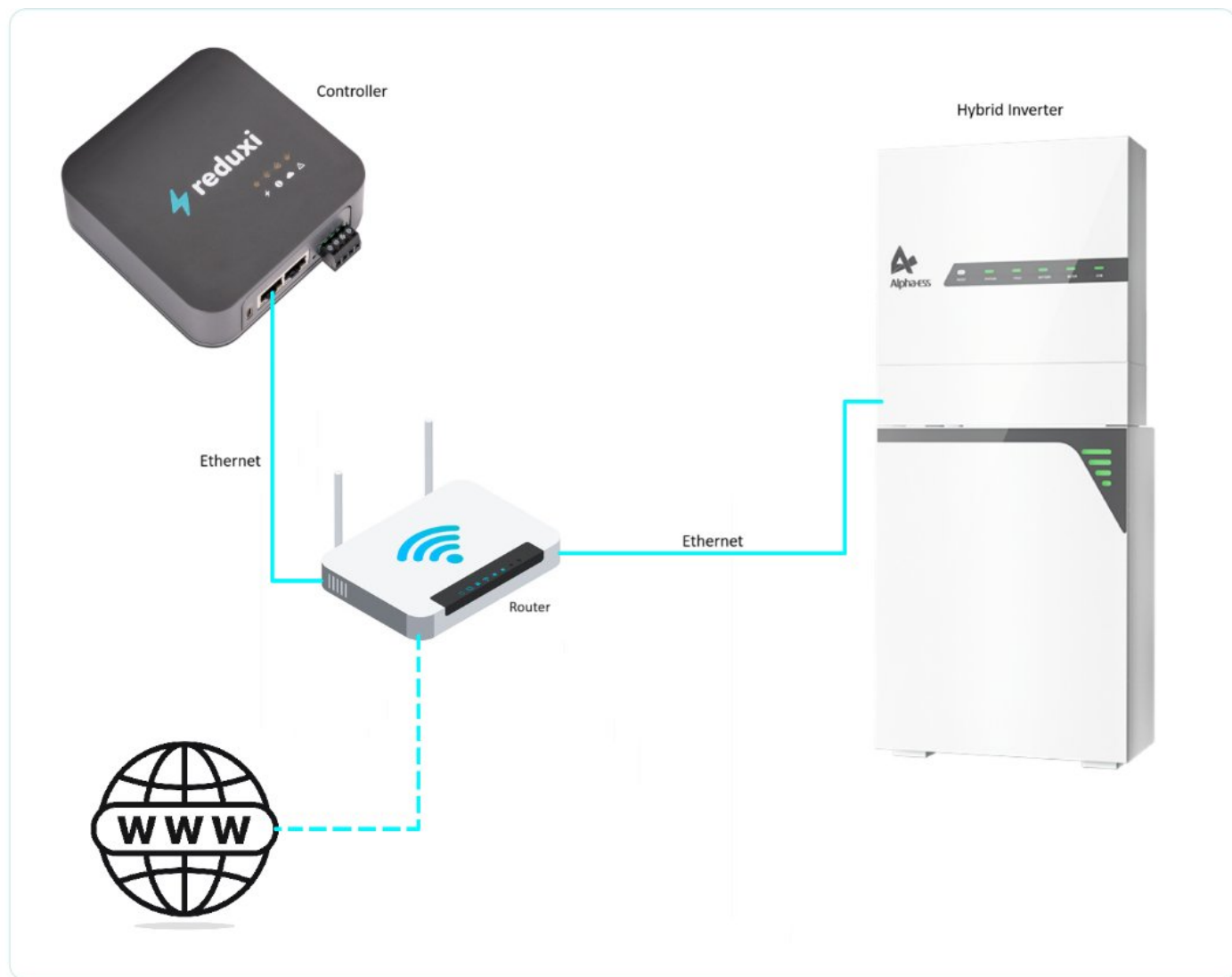
3 Connect the Reduxi Controller to the inverter

Choose one of three connections, depending on how the system was installed:

- Modbus TCP/IP via LAN cable
- Modbus TCP/IP via Wi-Fi dongle
- Modbus RTU

| 3.1 Modbus TCP/IP via LAN

The picture shows the entire connection from the Reduxi Controller to the inverter.



Modbus TCP/IP via LAN



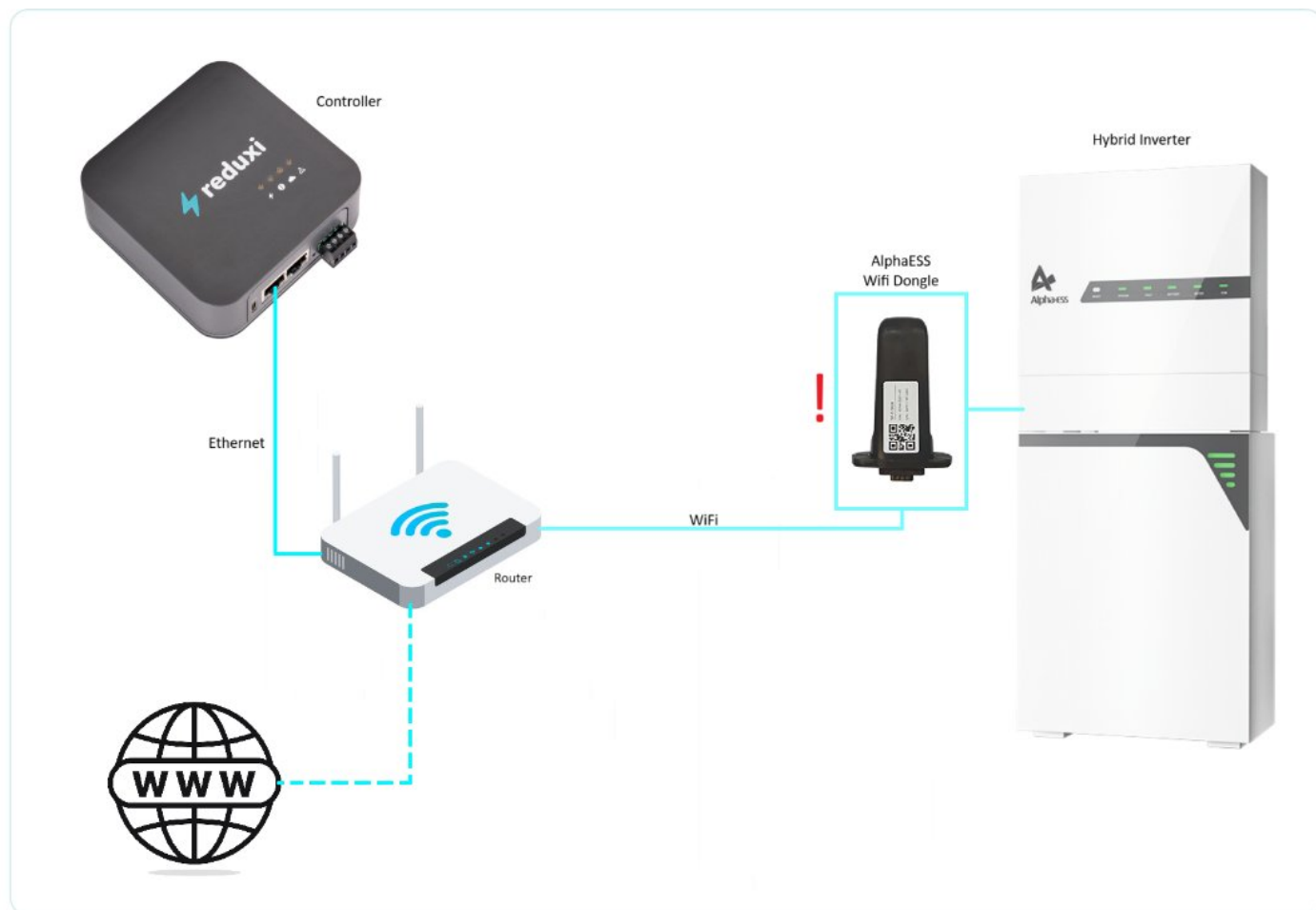
Firmware required

To set up a connection via Modbus TCP, you need the latest firmware on the inverter. The firmware update also activates TCP communication.

To perform the update, contact AlphaESS support by e-mail: info@alpha-ess.com

3.2 Modbus TCP/IP via Wi-Fi

The picture shows the entire connection from the Reduxi Controller to the inverter.



Modbus TCP/IP via Wi-Fi dongle



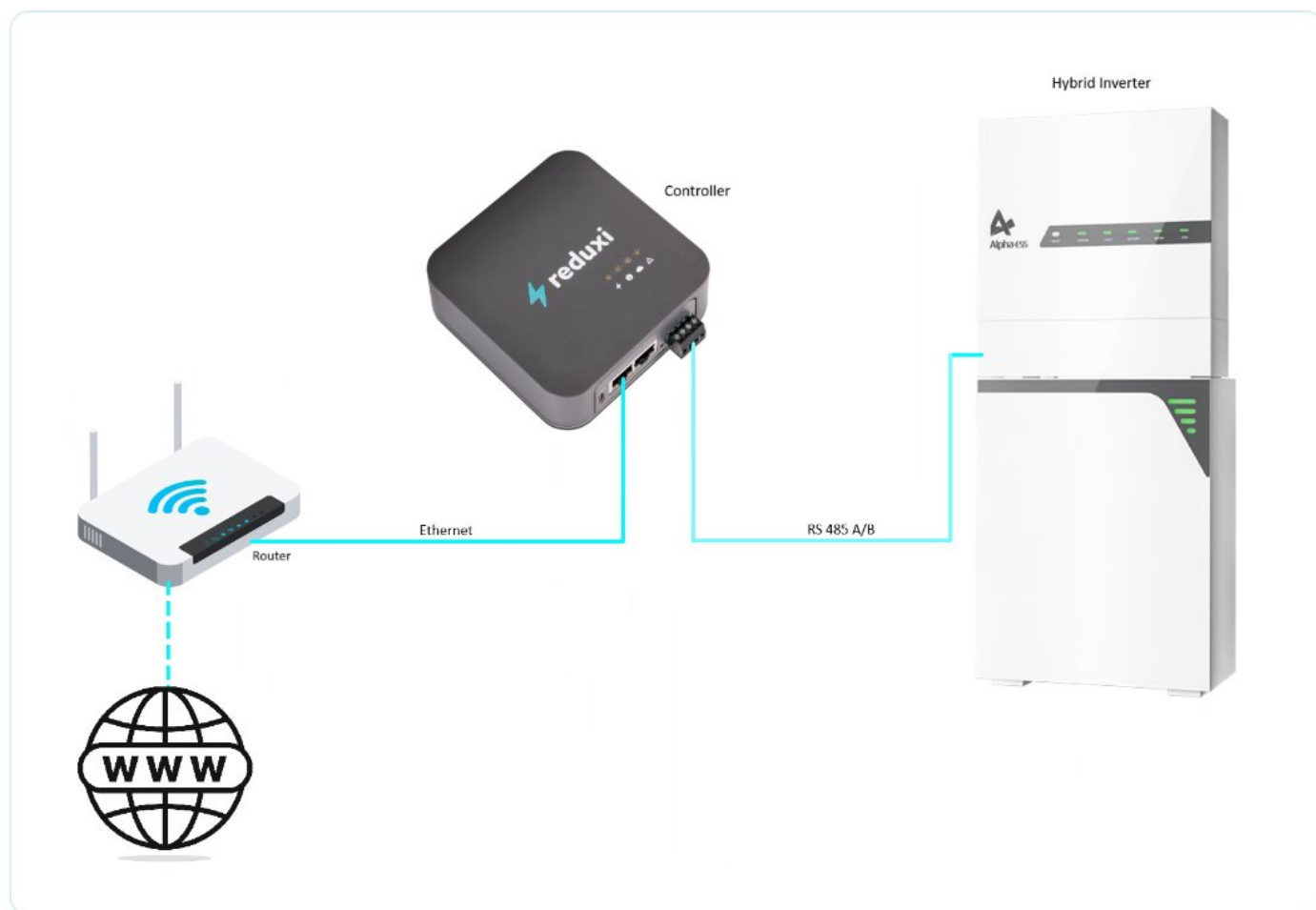
Firmware required

To set up a connection via Modbus TCP, you need the latest firmware on the inverter and on the dongle. The firmware update also activates TCP communication.

To perform the update, contact AlphaESS support by e-mail: info@alpha-ess.com

3.3 Modbus RTU

The picture shows the entire connection from the Reduxi Controller to the inverter.

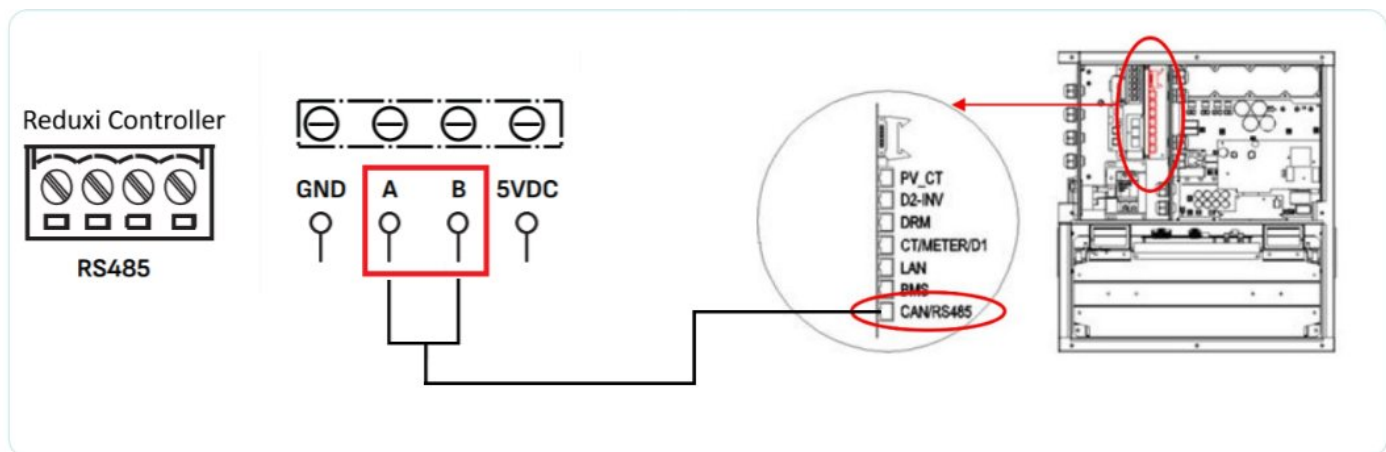


Modbus RTU connection

Wiring by series:

AlphaESS Smile B series

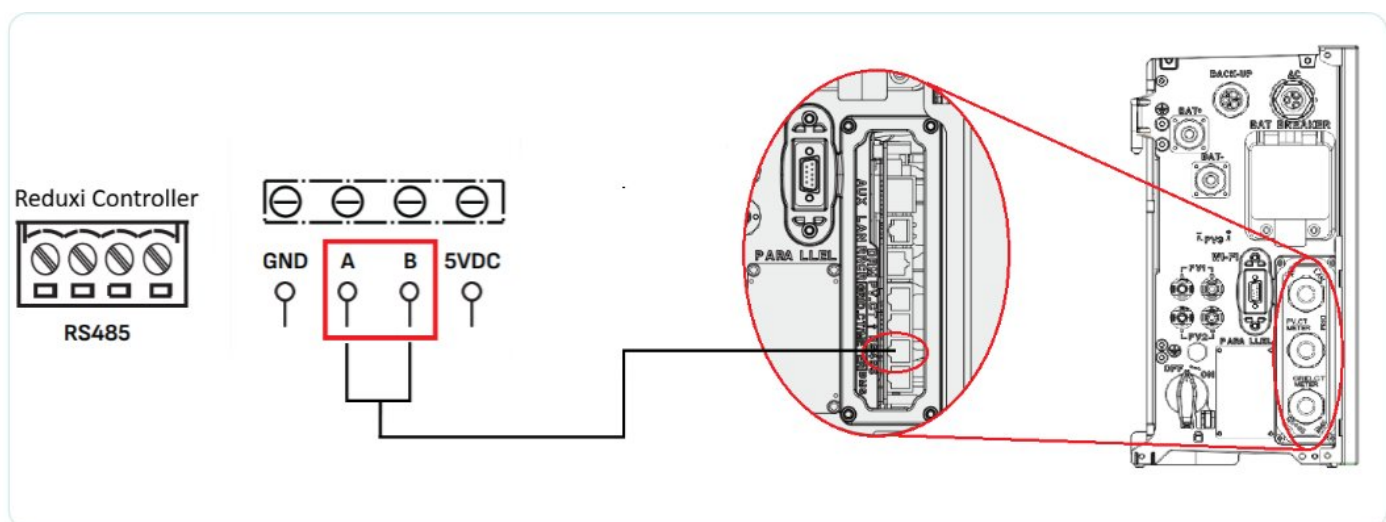
REDUXI CONTROLLER	WIRE COLOUR (CONTROLLER)	WIRE COLOUR (INVERTER)	ALPHAESS INVERTER
Ethernet cable			Ethernet RJ45 connector
RS 485 +	Blue/White	Blue/White	Pin 5
RS 485 -	Blue	Blue	Pin 4



Wiring: AlphaESS Smile B series

AlphaESS Smile G series

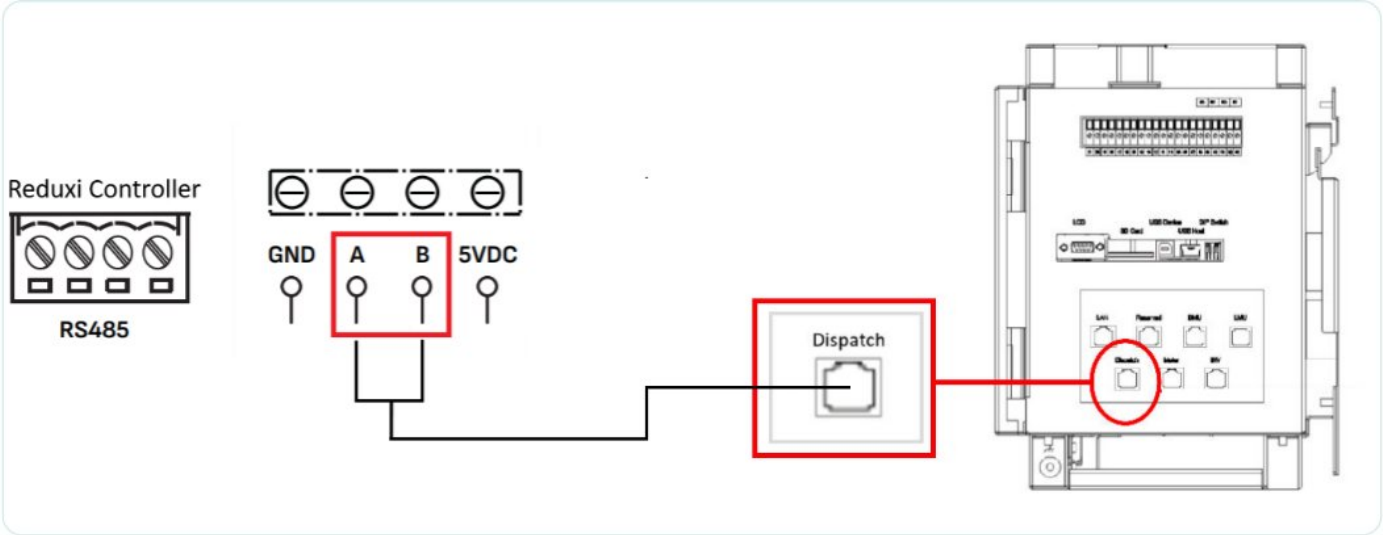
REDUXI CONTROLLER	WIRE COLOUR (CONTROLLER)	WIRE COLOUR (INVERTER)	ALPHAESS INVERTER
Ethernet cable			Ethernet RJ45 connector
RS 485 +	Blue/White	Blue/White	Pin 5
RS 485 -	Blue	Blue	Pin 4



Wiring: AlphaESS Smile G series

AlphaESS Smile T-10 series

REDUXI CONTROLLER	WIRE COLOUR (CONTROLLER)	WIRE COLOUR (INVERTER)	ALPHAESS INVERTER
Ethernet cable			Ethernet RJ45 connector
RS 485 +	Blue/White	Blue/White	Pin 5
RS 485 -	Blue	Blue	Pin 4



Wiring: AlphaESS Smile T-10 series



Firmware required

The inverter must have the latest firmware. The firmware update also activates RTU communication.

To perform the update, contact AlphaESS support by e-mail: info@alpha-ess.com

When the update is complete, continue with [Point 4](#).

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 `reduxi.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

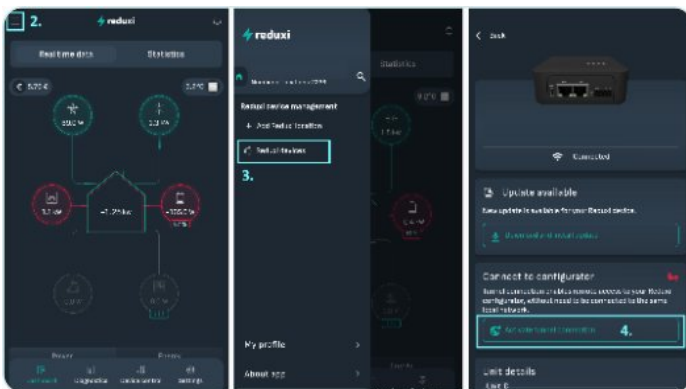
Tap the menu icon (three lines, top left) and select **Reduxi devices**.

3 Activate the tunnel connection

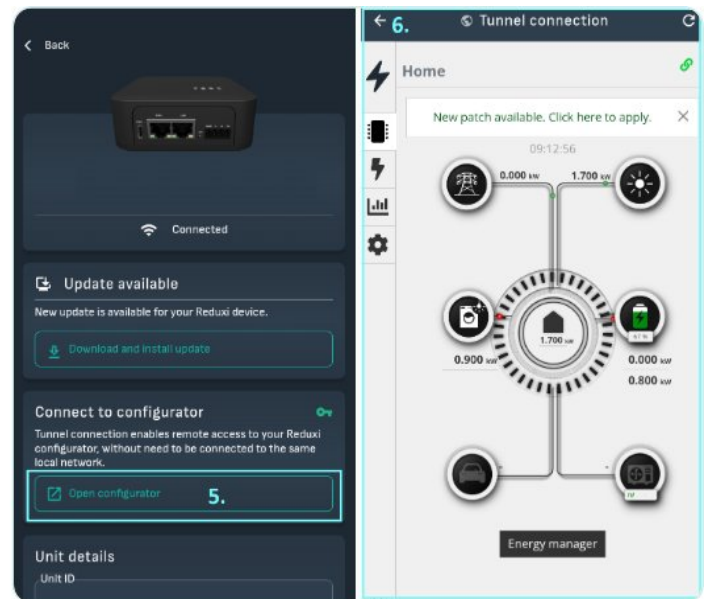
Switch on the tunnel connection and wait a moment until it is active.

4 Open the configurator

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



Activate the tunnel connection (step 3)



Open configurator (step 4)

4.2 Via a web browser

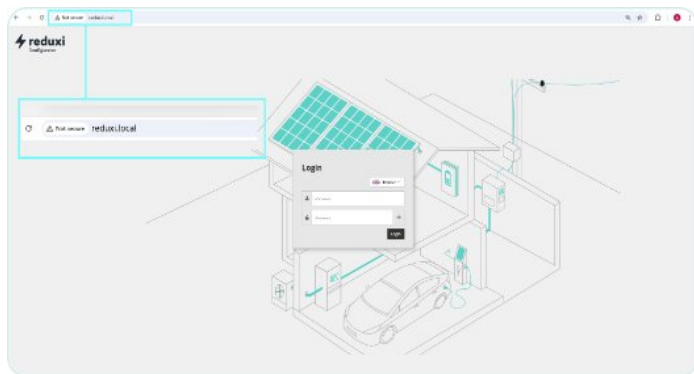
1 Open the login page

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**.

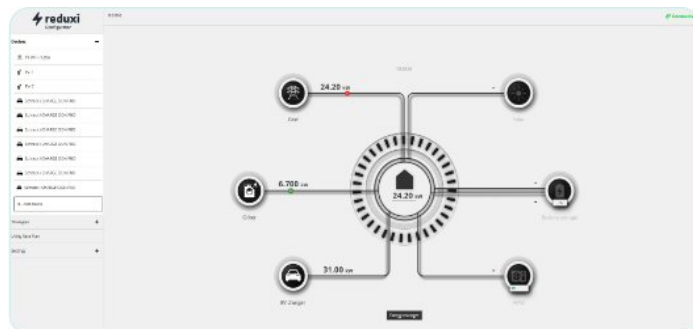
2

Log in

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



Reduxi Controller login screen



Controller web interface after login

5 Add the AlphaESS hybrid inverter to Reduxi

Once the AlphaESS hybrid inverter is connected, register it as a new device.

5.1 Basic settings

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

reduxi

Configurator

Devices —



Iskraemeco AM550



+ Add device

The + Add device button

In the first step, define the basic settings:

- Device type: **Hybrid Inverter**
- Type: **AlphaESS Smile Series**
- Name: a name of your choice, for example **AlphaESS Smile G3-S5**

1

Basic settings

2

Communication channel

Basic settings

Device type *

Hybrid inverter

Type *

AlphaESS Smile Series

Name *

AlphaESS Smile G3-S5

Back

Next

Basic settings: device type, type and name

Click **Next** to go to the communication settings.

5.2 Communication settings

This step sets up the Modbus link between the Reduxi Controller and the inverter. Choose Modbus TCP/IP or Modbus RTU, depending on the connection you use.

Modbus TCP

PARAMETER	VALUE
Connection	TCP/IP
IP	IP address of the AlphaESS inverter, or use Scan for IP
Port	502
Modbus unit ID	85 (default)



Scan for IP

When you use the scan button, select the matching IP address in the list that appears and add it with the **select IP** button.

1

Basic settings

2

Communication channel

Communication channel and device configuration

Connection *

TCP/IP

IP *

Scan for IP

Port *

502

IP address	Vendor	Already used as	
192.168.0.1	Advanced Digital Broadcast SA		+ Select IP
192.168.0.100	Alpha ESS Co.	AlphaESS Smile Series	+ Select IP

Modbus unit ID *

85

Back

Test communication

Done

Modbus TCP settings

Modbus RTU

PARAMETER	VALUE
Connection	Local Port
Port	1
Baudrate	9600
Data bits	8
Stop bits	1
Parity	None
Modbus unit ID	85 (default)

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 *

85

Back
Test communication Done

Modbus RTU settings

5.3 Test communication

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



The **Test communication** button

Communication channel and device configuration

Connection *

TCP/IP

IP *

192.168.20.248

Port *

202

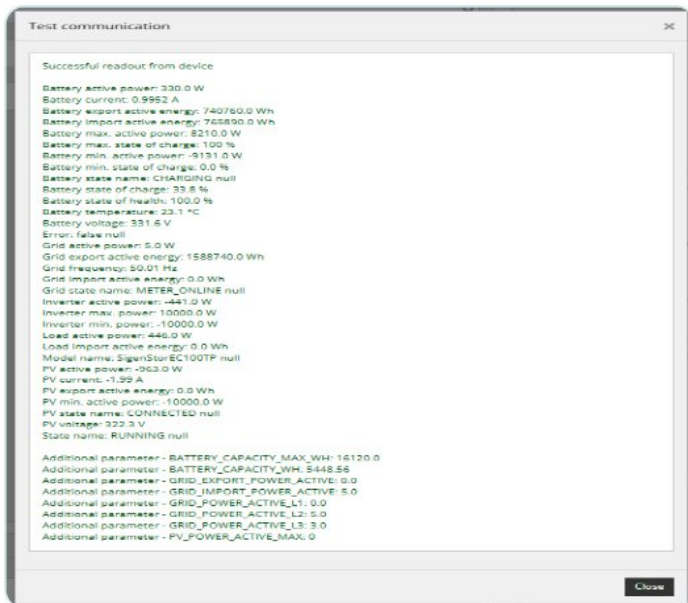
Modbus unit ID *

1

Back
Test communication Done

The **Done** button

The test returns one of two results:



1. Successful response (example)



2. Unsuccessful response (example)

If the test fails, check the settings and the wiring and try again.

6 Check the readings

6.1 Last measurements

Check the measured values and whether the device communicates correctly under **Devices – AlphaESS Smile G3-S5 – Last measurements** in the Reduxi Configurator.

Last measurementsAnalyzeArchive

Without refreshing

Control type

AutoManual

14.03.2023 12:49:53

PV

PV active power

-1.0 kW

14.03.2023 12:49:53

PV current

-1.98 A

14.03.2023 12:49:53

PV voltage

327.63 V

14.03.2023 12:49:53

PV export active energy

587.0 kWh

14.03.2023 12:49:53

PV min. active power

-10.0 kW

14.03.2023 12:49:53

PV export active power limit

kW

14.03.2023 12:49:53

enumeration.PV_STATE_NAME

CONNECTED

14.03.2023 12:49:53

Load

Load active power

0.4 kW

14.03.2023 12:49:53

Load import active energy

1,109.2 kWh

14.03.2023 12:49:53

Battery

Battery active power

0.4 kW

14.03.2023 12:49:53

Battery current

1.09 A

14.03.2023 12:49:53

Battery voltage

331.60 V

14.03.2023 12:49:53

Battery state name

CHARGING

14.03.2023 12:49:53

Battery state of charge

33.80 %

14.03.2023 12:49:53

Battery min. state of charge

0.00 %

14.03.2023 12:49:53

Battery max. state of charge

100.00 %

14.03.2023 12:49:53

Battery import active energy

765.9 kWh

14.03.2023 12:49:53

Battery export active energy

740.8 kWh

14.03.2023 12:49:53

Battery min. active power

-9.1 kW

14.03.2023 12:49:53

Battery max. active power

8.2 kW

14.03.2023 12:49:53

Battery active power setpoint

1.0 kW

14.03.2023 12:49:53

Inverter

Inverter active power

-0.4 kW

14.03.2023 12:49:53

Inverter max. active power

10.0 kW

14.03.2023 12:49:53

Inverter min. active power

-10.0 kW

14.03.2023 12:49:53

State name

RUNNING

14.03.2023 12:49:53

Error

OFF

14.03.2023 12:49:53

Grid

Grid frequency

49.990 Hz

14.03.2023 12:49:53

Grid active power

0.0 kW

14.03.2023 12:49:53

Grid import active power limit

kW

14.03.2023 12:49:53

Grid export active power limit

kW

14.03.2023 12:49:53

enumeration.GRID_STATE_NAME

METER_ONLINE

14.03.2023 12:49:53

Grid export active energy

1,588.7 kWh

14.03.2023 12:49:53

Grid import active energy

0.0 kWh

14.03.2023 12:49:53

Other

Battery state of health

100.00 %

14.03.2023 12:49:53

Battery temperature

23.10 °C

14.03.2023 12:49:53

Model name

SigenStoreC100TP

14.03.2023 12:49:53

Communication error

OFF

14.03.2023 12:49:53

Control type

MANUAL

14.03.2023 12:49:53

Mode name setpoint

SELF_CONSUMPTION

14.03.2023 12:49:53

Last measurements of the AlphaESS inverter

6.2 Enable control by Reduxi

For advanced control, integrate the device into the optimization modes of the Reduxi system. Under **Devices – AlphaESS G3–S5** in [the Reduxi Configurator](#), set the **control type** to **AUTO**. Only then do strategy commands affect the battery.

To achieve maximum flexibility and energy cost reduction with dynamic prices and dynamic tariffs, define a strategy as described in [Strategies for Reduxi controller](#).

After you have added the device, you can monitor and control it via [the Reduxi application](#).

✓ Summary

Preparation (Points 1–2): Read the manufacturer documents and prepare the cable or Wi-Fi dongle and a laptop or tablet.

AlphaESS Smile (Point 3): Connect the inverter via LAN, Wi-Fi dongle or Modbus RTU. Ask AlphaESS support for the latest firmware. The update activates TCP or RTU communication.

			AlphaESS
Smile Series	502	85	Test
communication.			

Go live (Point 6): Check **Last measurements** and set the control type to **AUTO** .

→ Common issues

ISSUE	SOLUTION
Test communication fails	Check the settings and the wiring. Check IP address, port 502 and Modbus unit ID 85 , and that the latest firmware is installed (see Point 3).
Modbus TCP does not respond	The inverter needs the latest firmware, with a Wi-Fi dongle also the dongle. Contact AlphaESS support: info@alpha-ess.com . The update activates TCP communication.
Modbus RTU does not respond	Check the wiring (RS 485 + on pin 5, RS 485 – on pin 4) and the RTU settings: port 1 , 9600 baud, 8 data bits, 1 stop bit, no parity. The inverter needs the latest firmware.
IP address not found with the scan	Select the matching IP address in the list and add it with the select IP button. Otherwise enter the IP address manually.
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 admin is rejected	The password was changed during installation. Ask the installer. The Reduxi account password does not work here.
reduxi.local 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:



AlphaESS SMILE-G3 product page

Product page and datasheets from the manufacturer



Device setup guides

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



List of supported devices

All devices that work with the Reduxi Controller



Strategies for the Reduxi Controller

Energy manager and other strategies explained