

How to connect AlphaESS C&I storage systems with Reduxi controller

Cut energy costs by up to 70%: Reduxi integrates AlphaESS C&I systems via Modbus TCP/IP.

🔌 AlphaESS TB 125, G2-H30/H50, H50-G3 · Reduxi Controller

🌐 Modbus TCP/IP

🔌 Port 502 · Modbus unit ID 1 (default)



AlphaESS C&I energy storage system

Text description of this image

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1 Technical documentation

Manufacturer documents for the supported AlphaESS C&I systems:

- [AlphaESS TB125 product page](#) – TB125: 125 kW, 261.2 kWh, LiFePO4, IP55
- [TB125 datasheet](#) – PDF, linked from the TB125 product page
- [AlphaESS H30/H50-G3 product page](#) – H30: 30 kW, H50: 50 kW, IP55
- [H30/H50-G3 datasheet](#) – PDF, linked from the H30/H50-G3 product page

2 Required equipment

Prepare the following:

- ☐ Reduxi Controller (installed and online)
- ☐ AlphaESS C&I storage system (TB 125, G2-H30, G2-H50 or H50-G3) with the latest firmware
- ☐ Network connection between the Reduxi Controller and the AlphaESS system (Ethernet)
- ☐ IP address of the AlphaESS system (you can find it with the network scan in the Reduxi Configurator)
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

3 System overview and firmware

3.1 Modbus TCP/IP connection

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



Connection from the Reduxi Controller to the AlphaESS system

Text description of this image

3.2 Update the firmware



Firmware required

To set up a connection via Modbus TCP, the device needs the latest firmware. The firmware update also activates TCP 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 Activate external control on the AlphaESS system

Reduxi can only control the device if it is configured accordingly. You do this in the battery interface of the AlphaESS system (touchscreen).

4.1 Log in to the battery interface

Address of the battery interface: `http://IP_AlphaESS:8085` (replace `IP_AlphaESS` with the IP address of the system).

PARAMETER	VALUE
User	admin
Password	Alpha123!

4.2 Set the dispatch mode

1 Open maintain

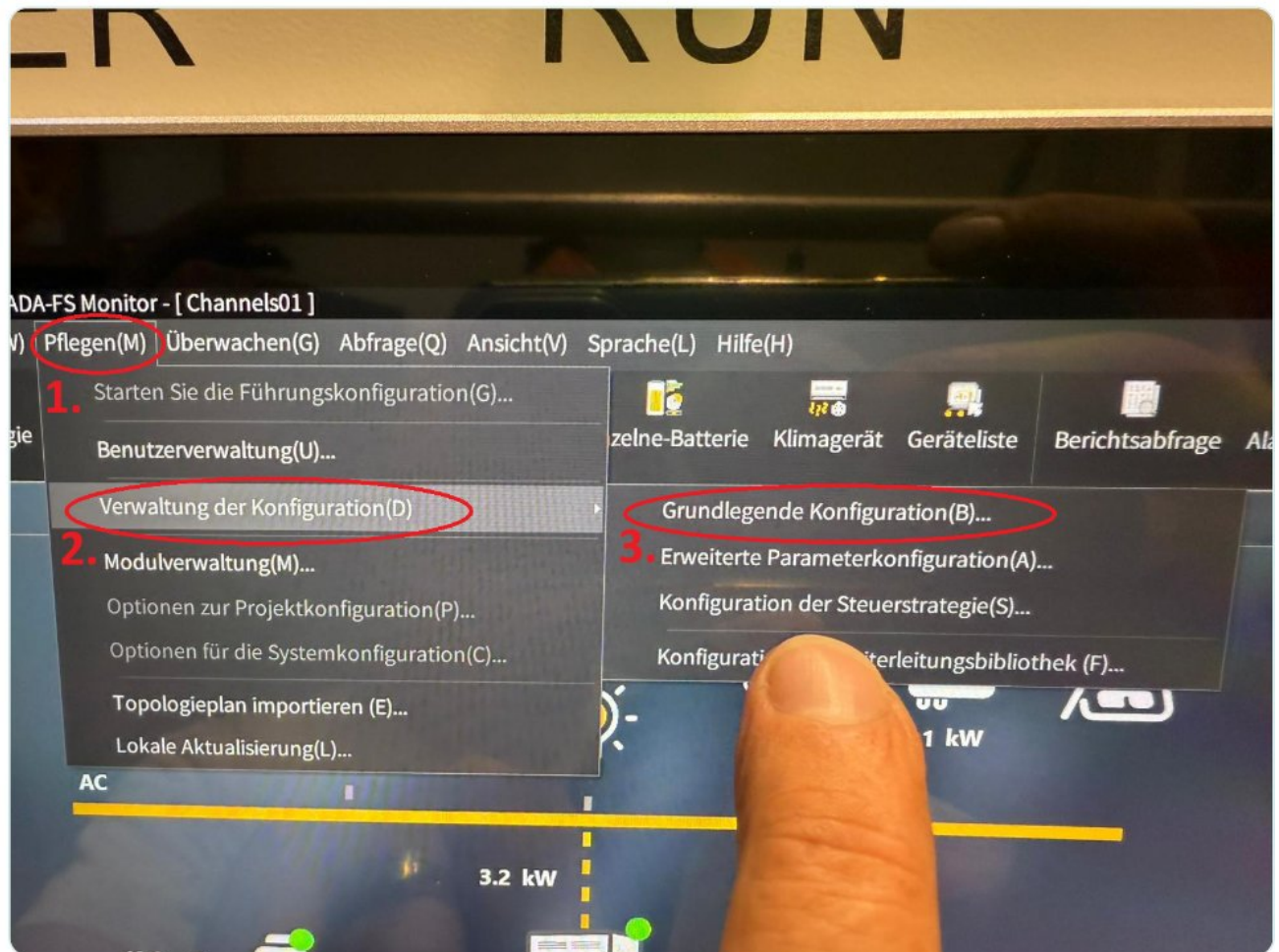
On the main page, open the second item **maintain**.

2 Open Configuration Management

Select **Configuration Management**.

Open Basic Configuration

Select **Basic Configuration**.



Menu path to Basic Configuration

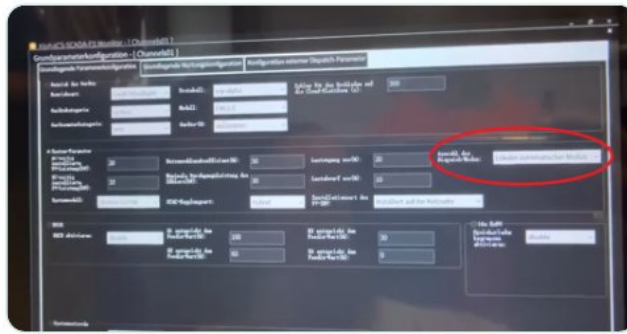
1. Text description of this image

Photo of a device display showing the window title 'ADA-FS Monitor - [Channels01]' (left part cut off) with a German menu bar: 'Pflegen(M)' (circled in red, marked 1), 'Überwachen(G)', 'Abfrage(Q)',

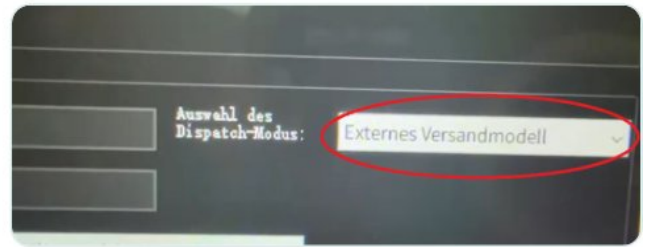
4

Select External control mode

Select the dispatch mode and switch to **External control mode**.



Dispatch mode



External control mode

1. Text description of this image

Photo of a computer monitor showing a German-language AlphaESS monitoring program. Tabs at

2. Text description of this image

Photo of a screen (dark background, pixelated text) of the AlphaESS interface in German. Label: Auswahl des Dispatch-Modus: [Selection of the dispatch mode]. Dropdown field: Externes

5

Save

Click **Save** in the lower right corner of the screen.

Then add the device to the Reduxi Controller.

5 Log in to the Reduxi web interface

You can open the Reduxi web interface in two ways:



Reduxi app

Via tunnel connection · works from anywhere

REMOTE



Web browser

In the local network · via IP address or reduxि.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

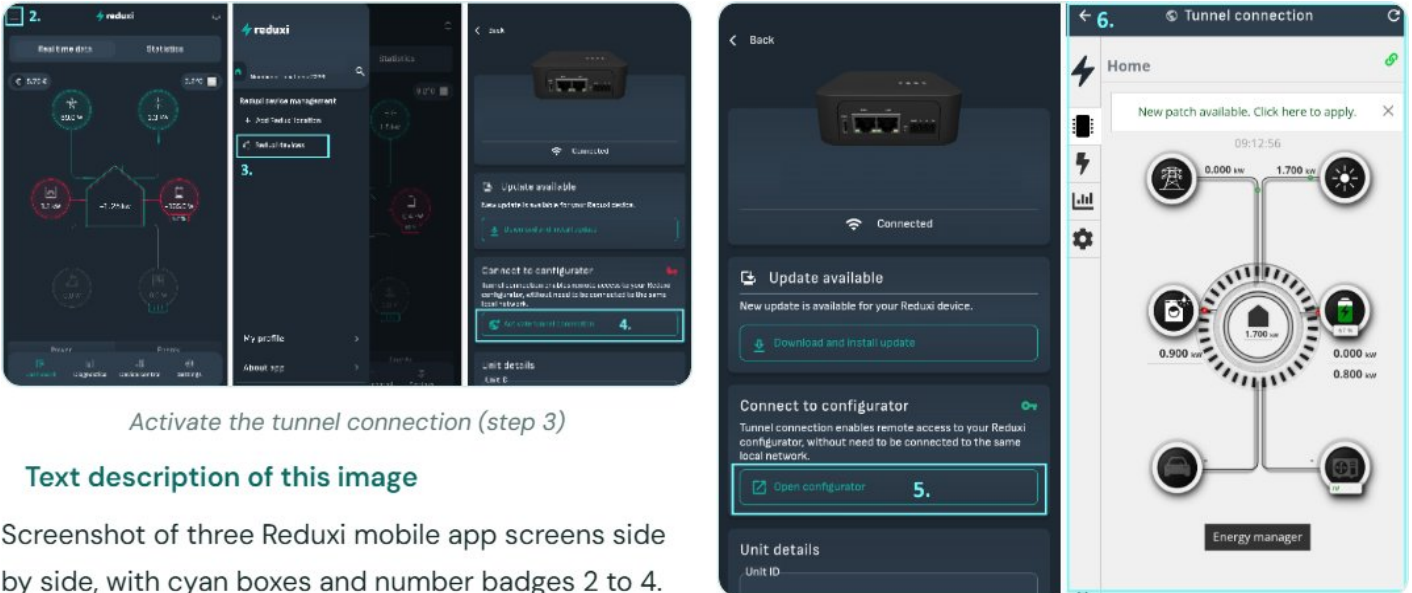
Activate the tunnel connection

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)

Open configurator (step 4)

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

Text description of this image

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

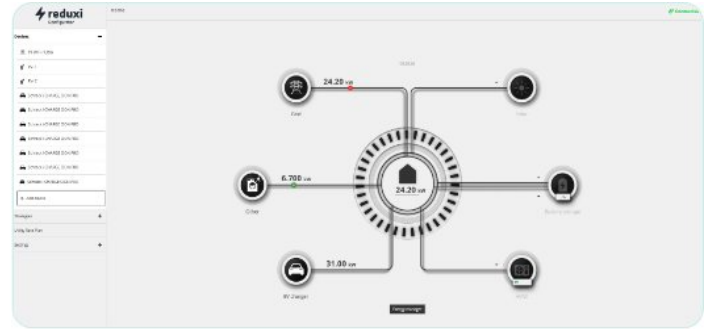
Log in

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 AlphaESS C&I system to Reduxi

Once the AlphaESS system is connected and set to external control, register it as a new device.

6.1 Basic settings

Log in locally to the [Reduxi Configurator](#) on the controller (see [Point 5](#)) and click **+ Add device**.

reduxi Configurator

Devices —



Iskraemeco AM550



Add device

The + Add device button

Text description of this image

In the first step, define the basic settings. The values depend on the model:

MODEL	DEVICE TYPE	TYPE	NAME (EXAMPLE)
TB 125	Battery	AlphaESS TB 125	AlphaESS TB 125
G2-H30, G2-H50, H50-G3	Hybrid Inverter	AlphaESS G2-H30/H50, H50-G3	AlphaESS G2-H30

TB 125: basic settings

G2-H30, G2-H50, H50-G3: basic settings

Text description of this image

2. Text description of this image

Screenshot of the Reduxi Configurator wizard step 1. The wizard is titled 'Basic settings' and shows a progress bar at the top with '1 Basic settings' and '2 Communication channel'. The 'Basic settings' section contains three dropdown menus: 'Device type *' set to 'Battery', 'Type *' set to 'AlphaESS TB125', and 'Name *' set to 'AlphaESS TB125'. At the bottom are 'Back' and 'Next' buttons. Click **Next** to go to the communication settings.

6.2 Communication settings

This step sets up the Modbus TCP/IP link between the Reduxi Controller and the AlphaESS system. The values are the same for all models.

PARAMETER	VALUE
Connection	TCP/IP
IP	IP address of the AlphaESS system, or use Scan for IP
Port	502
Modbus unit ID	Same as the ID of the inverter (default 1)



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 *

IP *

Scan for IP

Port *

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 *

Back
Test communication **Done**

Communication settings

Text description of this image

6.3 Test communication

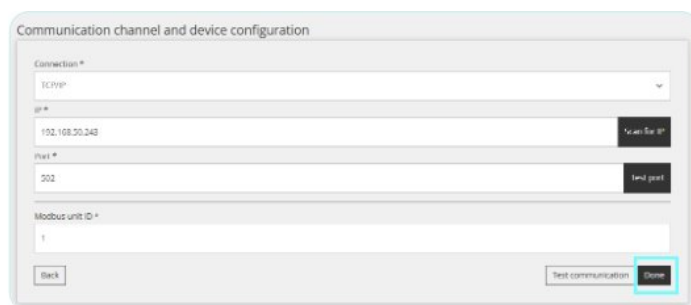
Click **Test communication** at the bottom of the wizard. It reads the AlphaESS once and saves nothing. If the test succeeds, click **Done**: only **Done** creates the device.



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'.

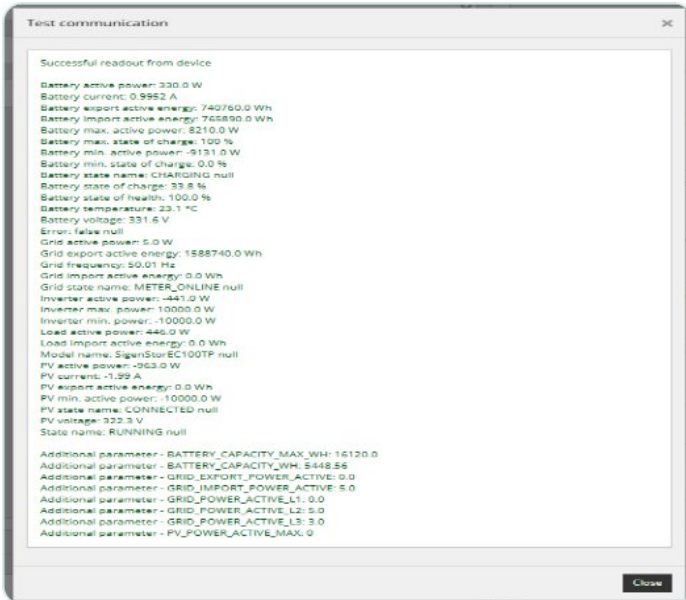


The **Done** button

2. Text description of this image

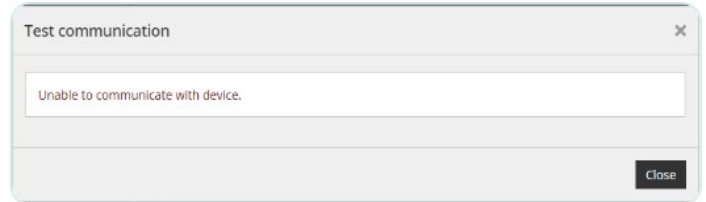


The test returns one of two results:



1. Successful response (example)

Text description of this image



2. Unsuccessful response (example)

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

7 Check the readings

7.1 Last measurements

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

Last measurementsAnalyzeArchive

Without refreshing

Control type

AutoManual

14.03.2025 12:49:53

PV

PV active power

-1.0 kW

14.03.2025 12:49:53

PV current

-1.98 A

14.03.2025 12:49:53

PV voltage

327.63 V

14.03.2025 12:49:53

PV export active energy

587.0 kWh

14.03.2025 12:49:53

PV min. active power

-10.0 kW

14.03.2025 12:49:53

PV export active power limit

kW

14.03.2025 12:49:53

enumeration.PV_STATE_NAME

CONNECTED

14.03.2025 12:49:53

Load

Load active power

0.4 kW

14.03.2025 12:49:53

Load import active energy

1,109.2 kWh

14.03.2025 12:49:53

Battery

Battery active power

0.4 kW

14.03.2025 12:49:53

Battery current

1.09 A

14.03.2025 12:49:53

Battery voltage

331.60 V

14.03.2025 12:49:53

Battery state name

CHARGING

14.03.2025 12:49:53

Battery state of charge

33.80 %

14.03.2025 12:49:53

Battery min. state of charge

0.00 %

14.03.2025 12:49:53

Battery max. state of charge

100.00 %

14.03.2025 12:49:53

Battery import active energy

765.9 kWh

14.03.2025 12:49:53

Battery export active energy

740.8 kWh

14.03.2025 12:49:53

Battery min. active power

-9.1 kW

14.03.2025 12:49:53

Battery max. active power

8.2 kW

14.03.2025 12:49:53

Battery active power setpoint

1.0 kW

14.03.2025 12:49:53

Inverter

Inverter active power

-0.4 kW

14.03.2025 12:49:53

Inverter max. active power

10.0 kW

14.03.2025 12:49:53

Inverter min. active power

-10.0 kW

14.03.2025 12:49:53

State name

RUNNING

14.03.2025 12:49:53

Error

OFF

14.03.2025 12:49:53

Grid

Grid frequency

49.990 Hz

14.03.2025 12:49:53

Grid active power

0.0 kW

14.03.2025 12:49:53

Grid import active power limit

kW

14.03.2025 12:49:53

Grid export active power limit

kW

14.03.2025 12:49:53

enumeration.GRID_STATE_NAME

METER_ONLINE

14.03.2025 12:49:53

Grid export active energy

1,588.7 kWh

14.03.2025 12:49:53

Grid import active energy

0.0 kWh

14.03.2025 12:49:53

Other

Battery state of health

100.00 %

14.03.2025 12:49:53

Battery temperature

23.10 °C

14.03.2025 12:49:53

Model name

SigenStorEC100TP

14.03.2025 12:49:53

Communication error

OFF

14.03.2025 12:49:53

Control type

MANUAL

14.03.2025 12:49:53

Mode name setpoint

SELF_CONSUMPTION

14.03.2025 12:49:53

Last measurements of the AlphaESS system

Text description of this image

7.2 Enable control by Reduxi

For advanced control, integrate the device into the optimization modes of the Reduxi system. Under **Devices – AlphaESS Device** 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 1–3): Read the manufacturer documents, prepare the network connection and update the firmware via AlphaESS support. The update also activates TCP communication.

AlphaESS system (Point 4): Log in to the battery interface and set the dispatch mode to `External control mode`. Save.

Add to Reduxi (Points 5–6): Open the Configurator and add the device: `Battery` for TB 125, `Hybrid Inverter` for G2-H30/H50 and H50-G3. Enter IP, port `502` and Modbus unit ID (default `1`). Run **Test communication**.

Go live (Point 7): Check **Last measurements** and set the control type to `AUTO`.

→ Common issues

ISSUE	SOLUTION
Test communication fails	Check the settings and the wiring. Check that IP address, port 502 and Modbus unit ID are correct and that the latest firmware is installed (see Point 3).
Modbus TCP does not respond	The device needs the latest firmware. Contact AlphaESS support: info@alpha-ess.com . The update activates TCP communication.
Reduxi commands have no effect on the battery	Check that the dispatch mode is External control mode (see Point 4) and that the control type in Reduxi is AUTO (see Point 7).
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 TB125 product page

Product page and datasheet from the manufacturer



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