

How to connect Vaillant heat pump with Reduxi Gateway

Save up to 30% on energy costs: use the SG-ready contacts of your Vaillant geoTHERM heat pump via the Reduxi Gateway. Dynamic control follows fluctuating energy prices.

🔧 Vaillant geoTHERM exklusiv VWS 103/3 · Reduxi Controller · Reduxi Gateway

🔌 SG-ready contacts · connector 13

⚡ 3x (30:1A) current sensors



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1 Technical documentation

Manufacturer information on Vaillant heat pumps:

- [Vaillant heat pumps](#) – Product overview on the manufacturer website

2 Required equipment

Two components connect the Reduxi Controller to the Vaillant geoTHERM exklusiv VWS 103/3 heat pump:

- ☐ Reduxi Controller
- ☐ Reduxi Gateway device with 3x (30:1A) current sensors (CTs)
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

Add the Reduxi Gateway device to the Reduxi Controller first. Only then you can control the operation modes of the heat pump. The connection is wireless (WLAN) or wired via a UTP cable (LAN). More information: [Gateway to Controller connection](#).

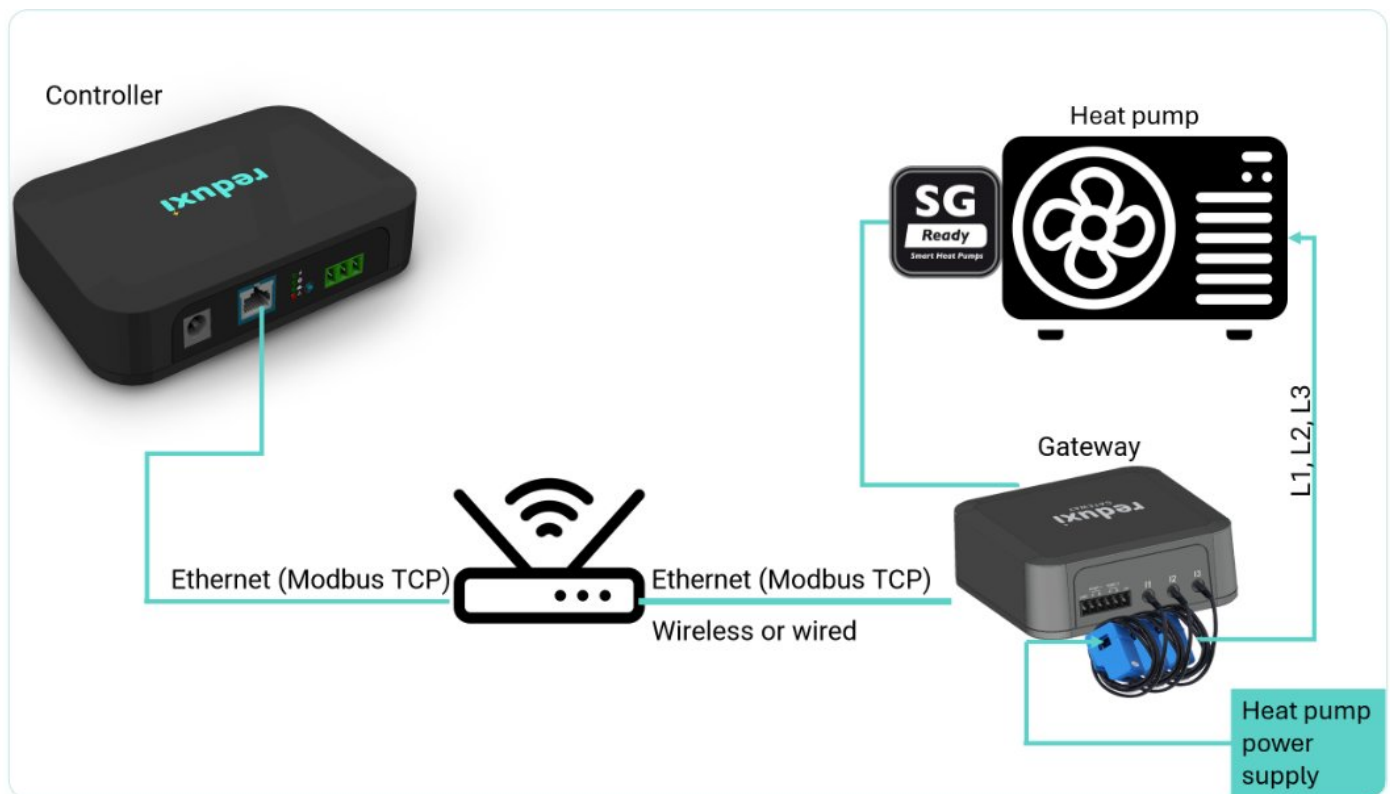
The Reduxi Gateway device has two functions:

- Its 3x (30:1A) current sensors (transformers) measure the electrical current, and so the power, of each phase of the heat pump.
- Its two relay outputs generate the signals for the SG-ready contacts. The signals change the operation mode of the heat pump.

3 Connect the Reduxi Gateway to the heat pump

3.1 Overview of the connection

The picture shows the entire connection from the Reduxi Controller to the heat pump.



Connection from the Reduxi Controller to the heat pump

Text description of this image

Further information on connecting the Reduxi Gateway device: [How to configure Reduxi Gateway](#).

3.2 Connect the relay to the SG-ready contacts

First find the SG-ready contacts on the circuit board of the Vaillant geoTHERM exklusiv VWS 103/3 heat pump. The first image shows their location. The second image shows the connections from the relay to the SG-ready contacts.

7.4 Reglerplatine (Überblick)

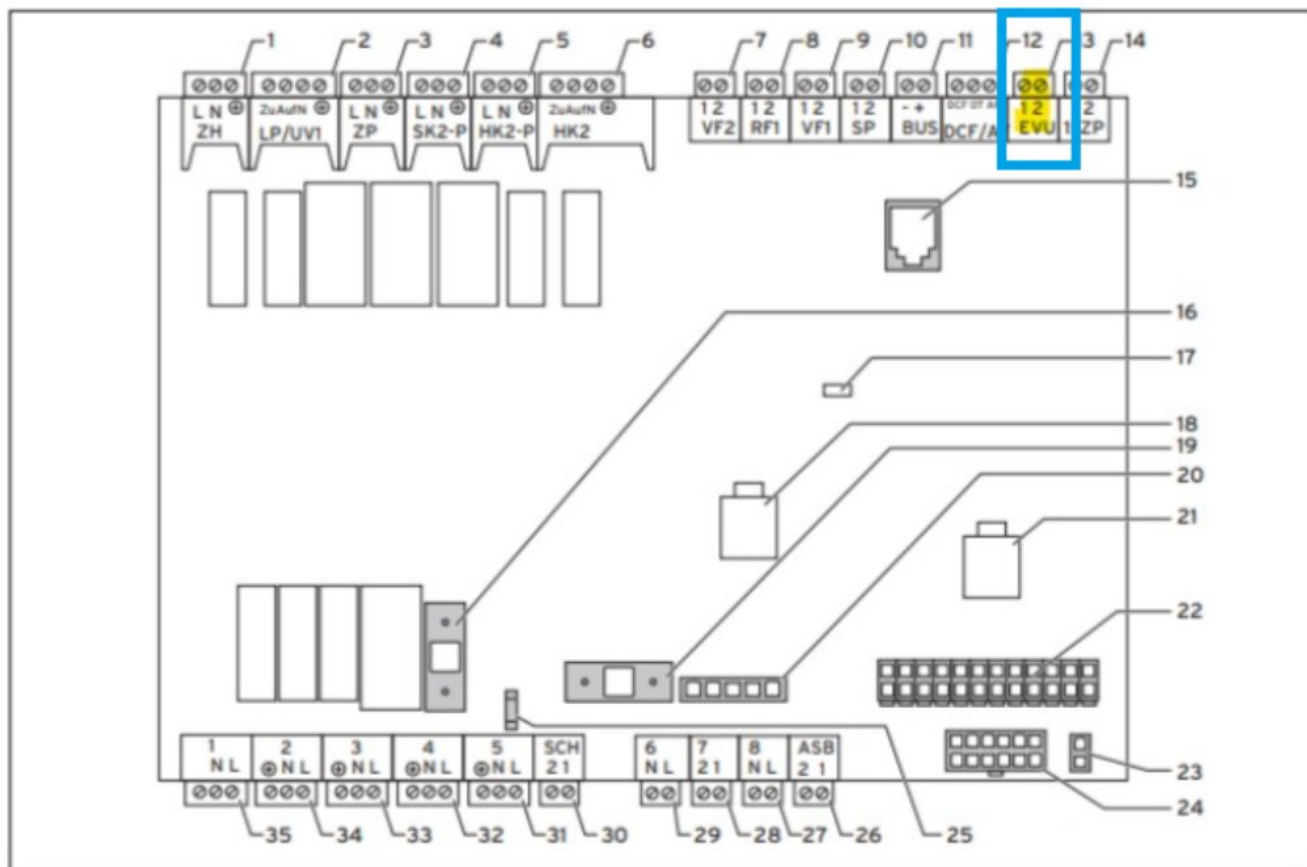
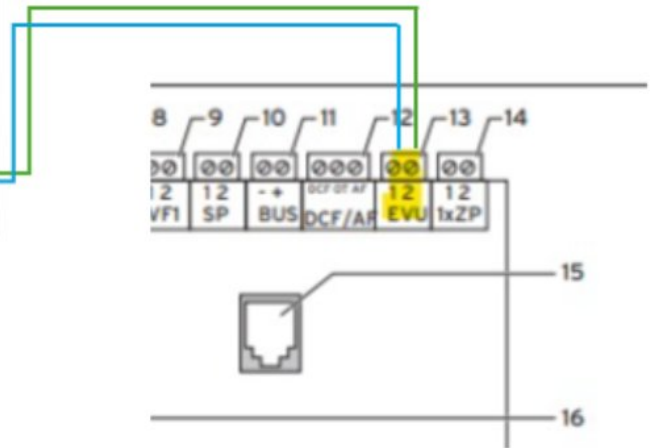


Abb. 7.7 Reglerplatine

Location of the SG-ready contacts on the circuit board

Text description of this image

REDUXI GATEWAY DEVICE	CONTACT ON CONNECTOR 13	WIRE
NC contact of the first relay	Contact 1	Blue
COM contact of the first relay	Contact 2	Green



Connection from the Reduxi Gateway device to the SG-ready contacts

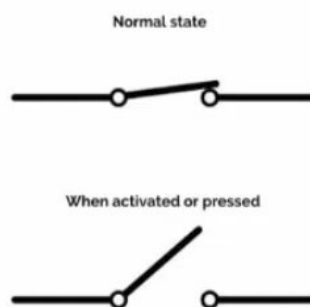
Text description of this image



Note

The Reduxi Gateway device allows relay outputs to be permanently closed (**Normally Closed – NC**) or open (**Normally Open – NO**). The Vaillant heat pump uses the **NC** contact of the first relay.

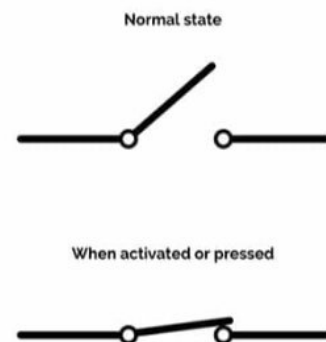
A normally closed (NC) contact/switch



Normally Closed (NC)

Text description of this image

A normally open (NO) contact/switch



Normally Open (NO)

2. Text description of this image

Diagram on a white background with the title "A

3.3 Connect the current sensors

The current sensors measure the current of the heat pump. They provide real-time data on its power consumption. Voltage readings come from the Reduxi Controller. If they are not available, a default voltage of 230 V is used.

Connect the three current sensors (CTs) of the Reduxi Gateway kit to the three inputs, one for each phase, as shown below.



Current sensor inputs of the Reduxi Gateway device

Text description of this image

Each current sensor covers one phase wire (L1, L2, L3) of the heat pump.



Current sensors on the phase wires

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 `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

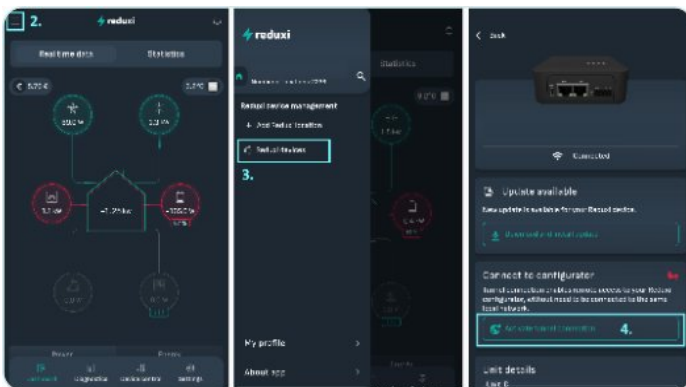
Activate the tunnel connection

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

4

Open the configurator

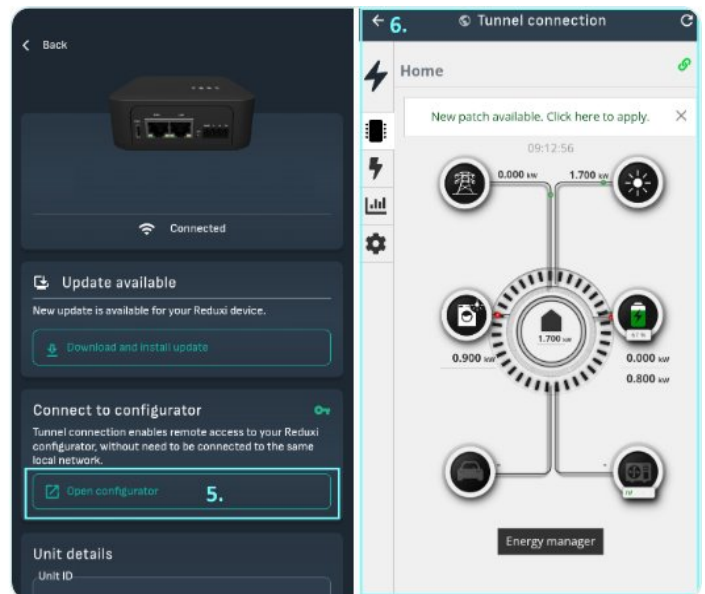
Tap **Open configurator**. The Reduxi web interface opens.



Activate the tunnel connection (step 3)

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

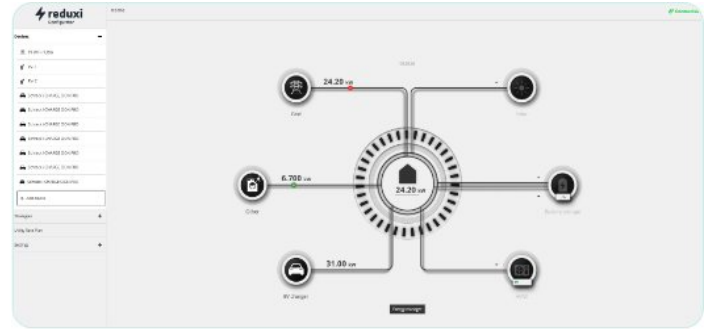
Log in

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 heat pump to Reduxi

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

5.1 Basic settings

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

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 the basic parameters of the device:

- Device type: **HVAC**
- Type: **Reduxi Meter**
- Name: a name of your choice, for example **Vaillant geoTHERM**

The screenshot shows a three-step progress bar at the top: 1. Basic settings (active), 2. Communication channel, and 3. Advanced settings. Below the progress bar, the 'Basic settings' section is displayed. It contains three input fields: 'Device type *' with a dropdown menu, 'Type *' with a dropdown menu, and 'Name *' with a text input field. At the bottom left is a 'Back' button, and at the bottom right is a 'Next' button.

Basic settings: device type, type and name

Text description of this image

5.2 Communication settings

The communication channel has three parts.

Part 1: connection between the Reduxi Gateway device and the Reduxi Controller. The fields are populated automatically. Fill them in as shown below.

The screenshot shows the 'Communication channel and device configuration' section. It contains four input fields: 'Connection *' with a dropdown menu showing 'TCP/IP', 'IP *' with a text input field showing 'gateway.local', 'Port *' with a text input field showing '502', and 'Modbus unit ID *' with a text input field showing '1'.

Part 1: communication channel to the Reduxi Gateway device

Text description of this image

Part 2: current sensor settings of the Reduxi Gateway device. Choose **Auto detect from gateway** for all current sensors.

CT-L1

Auto detect from gateway

Current transformer

CT-L2

Auto detect from gateway

Current transformer

CT-L3

Auto detect from gateway

Current transformer

Part 2: current sensors

Text description of this image

Part 3: signals of the relay of the Reduxi Gateway device. The state of the first relay sets the mode of the heat pump:

MODE	MEANING	RELAY 1
ON	Normal operation	NC (closed)
OFF	Heat pump stop	NO (open)

NO stands for **normally open**, NC for **normally closed**. Complete configuration of the relay signals in the Reduxi Configurator:

Off - relay 1

Off

Setpoint of the relay 1 when heat pump setpoint is off

Off - relay 2

Not in use

Setpoint of the relay 2 when heat pump setpoint is off

ECO - relay 1

Not in use

Setpoint of the relay 1 when heat pump setpoint is ECO

ECO - relay 2

Not in use

Setpoint of the relay 2 when heat pump setpoint is ECO

ON - relay 1

On

Setpoint of the relay 1 when heat pump setpoint is ON

ON - relay 2

Not in use

Setpoint of the relay 2 when heat pump setpoint is ON

BOOST - relay 1

Not in use

Setpoint of the relay 1 when heat pump setpoint is BOOST

BOOST - relay 2

Not in use

Setpoint of the relay 2 when heat pump setpoint is BOOST

Complete relay signal configuration

Text description of this image

5.3 Advanced settings

Advanced settings are optional. They depend on the needs of the location where the Reduxi Controller is installed. After you finish them, click **Done** at the lower right.

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

Do you want to exclude device from summary? ☐ 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

Text description of this image

5.4 Test communication

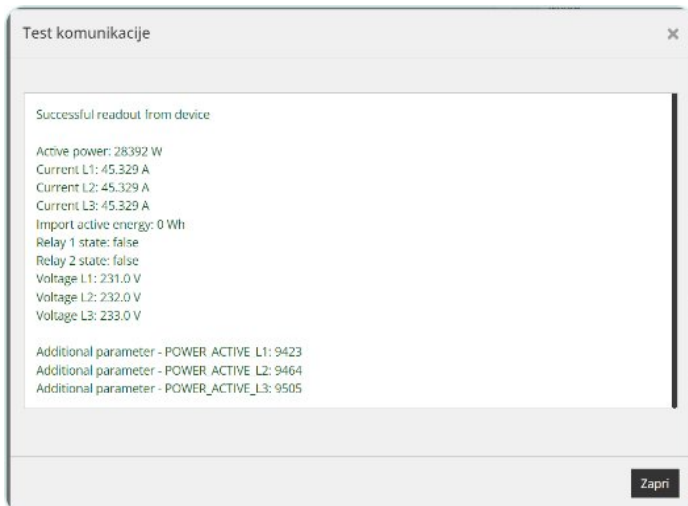
Click **Test communication** at the lower right, below the communication parameters. It reads the device once and saves nothing. If the test succeeds, click **Done**: only **Done** creates the device.

Back Test communication Next

The **Test communication** button

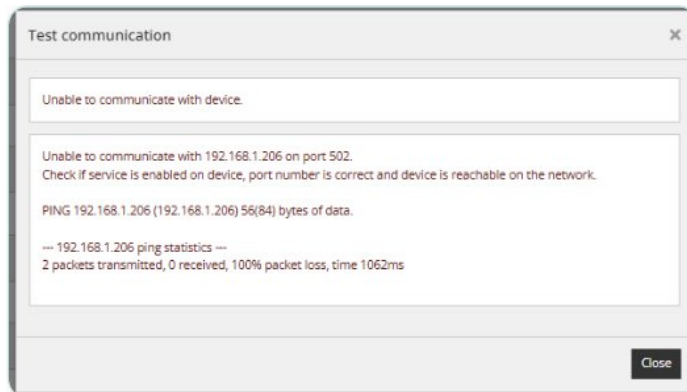
Text description of this image

The test returns one of two results:



1. Communication works properly

Text description of this image



2. Communication does not work properly

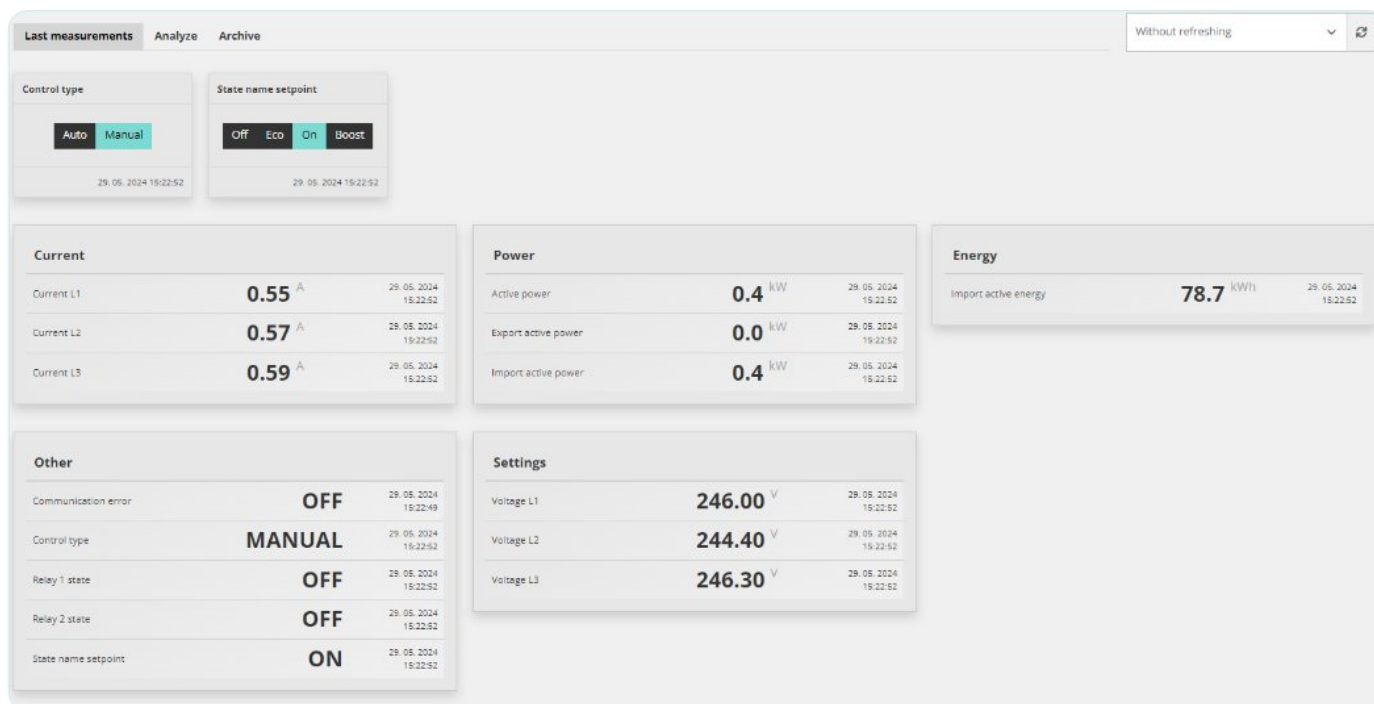
2. Text description of this image

Screenshot of a dialog titled Test communication (close x at the top right). First box: Unable to communicate with device. Second box (red text):

6 Check the readings

6.1 Last measurements

After communication is established, check the values under **Devices – Vaillant geoTHERM exklusiv VWS 103/3 heat pump** in the [Reduxi Configurator](#) as an additional test.



Last measurements of the heat pump

Text description of this image

6.2 Enable control by Reduxi

For advanced heat pump control, integrate the device into the Reduxi strategy. Under **Devices – Vaillant geoTHERM exklusiv VWS 103/3** in the [Reduxi Configurator](#), set the **control type** to **AUTO**. Only then do strategy commands affect the heat pump.

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 and checked the values, you can also inspect and control it in [the Reduxi application](#).

Summary

Preparation (Points 1–2): Get the Vaillant information. Prepare the Reduxi Controller, the Reduxi Gateway device with 3 current sensors and a laptop or tablet.

Heat pump (Point 3): Wire the NC and COM contacts of the first relay to contacts 1 and 2 of connector 13. Mount the current sensors on L1, L2 and L3.

Add to Reduxi (Points 4–5): Log in to the Reduxi web interface. Add the device as HVAC, type Reduxi Meter. Set the three parts of the communication channel. Run Test communication, then click Done.

Go live (Point 6): Check the last measurements. Set the control type to AUTO. Define a strategy.

→ Common issues

ISSUE	SOLUTION
Heat pump does not switch between ON and OFF	Check the wiring on connector 13 (contact 1 blue wire to NC, contact 2 green wire to COM of the first relay) and the relay 1 setting in Point 5 .
No power values of the heat pump	Check that each current sensor covers one phase wire (L1, L2, L3) and that all current sensors are set to Auto detect from gateway.
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:



Vaillant heat pumps

Product overview on the manufacturer website.



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