REDUXI CONTROLLER · KNOWLEDGE BASE

Reduxi with Midea Heatpump

Save up to 30% on energy costs: control the SG-ready contacts of your Midea heat pump via the Reduxi Gateway and align it with fluctuating energy prices.

Midea heat pump · Reduxi Controller · Reduxi Gateway

EVU and SG-ready contacts via 2 gateway relays

SG-ready contacts on connector CN35

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1 Prepare the connection

1.1 Required components

Two Reduxi components connect the Reduxi Controller to the Midea heat pump:

- [ ] Reduxi Controller
- [ ] Reduxi Gateway device with 3x (30:1A) current sensors (CTs)
- [ ] UTP cable, only for the wired connection (LAN) of the gateway
- [ ] Laptop or tablet with internet access to configure the device in Reduxi

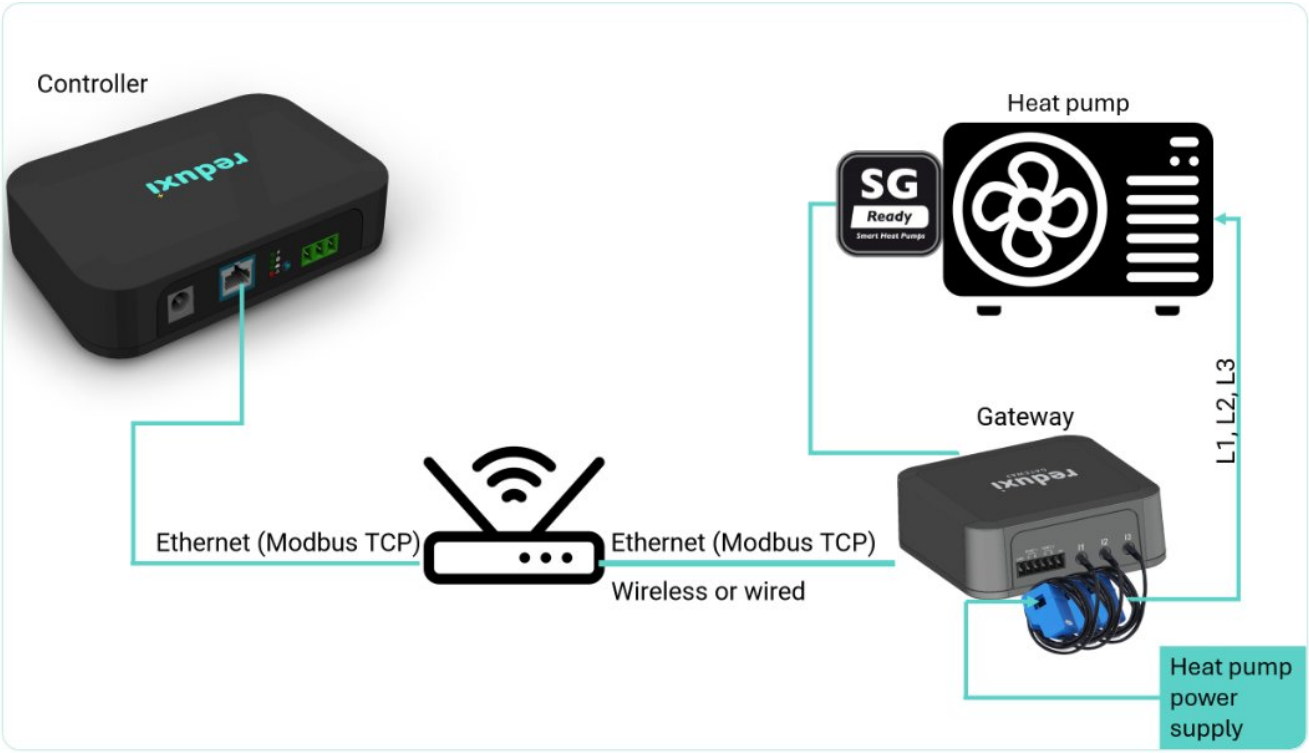
First add the Reduxi Gateway device to the Reduxi Controller. The gateway then controls the operating modes of the heat pump. The connection is wireless (WLAN) or wired via a UTP cable (LAN). More about this: **Gateway to Controller connection**.

The gateway measures the current of each phase of the heat pump with the 3x (30:1A) current sensors. Its two relay outputs send the signals to the SG-ready contacts and set the operating mode of the heat pump.

2 Connect the Reduxi Gateway and the heat pump

2.1 Overview of the connection

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



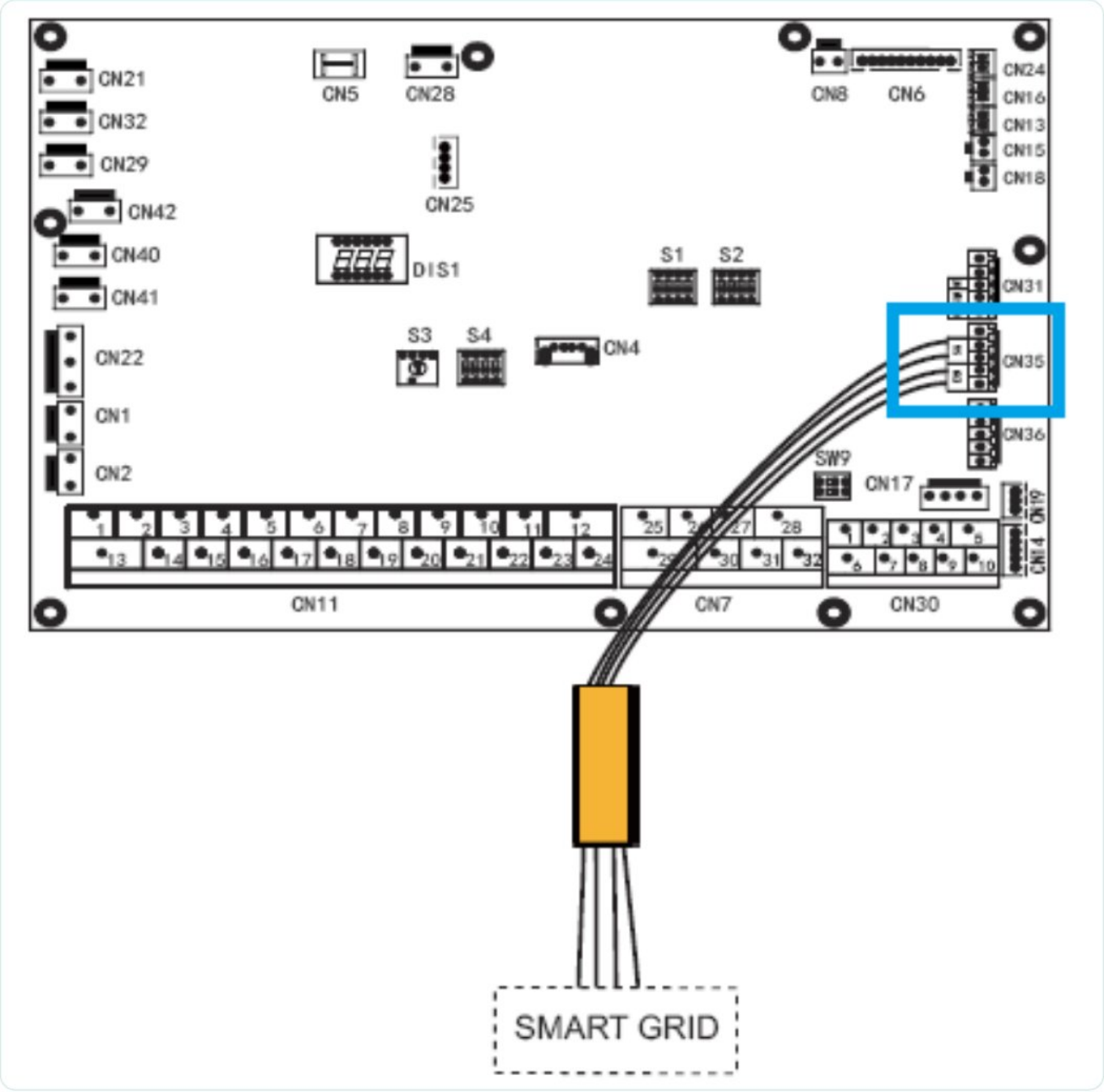
Connection from the Reduxi Controller to the heat pump

For further information on how to connect the Reduxi Gateway device, see **How to configure the Reduxi Gateway**.

2.2 Connect the gateway relays to the SG-ready contacts

First find the SG-ready contacts on the circuit board of the heat pump. The picture shows their location on the circuit board of the Midea heat pump.

The SG-ready contacts are on connector **CN35**.



SG-ready contacts on the circuit board: connector CN35

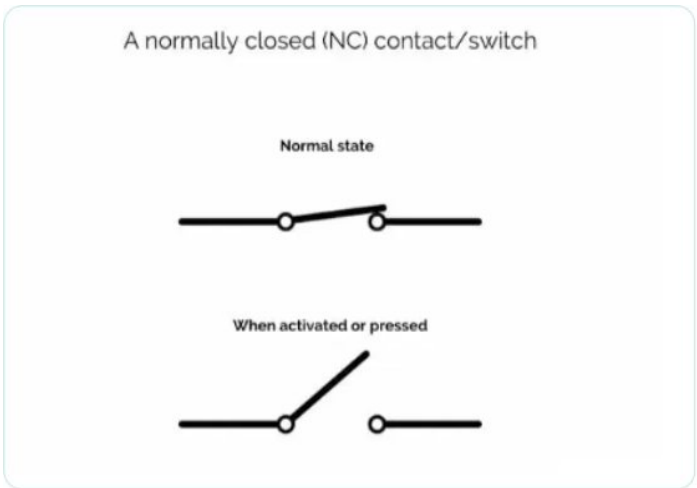
Connect the relays of the Reduxi Gateway device to the SG-ready contacts of the heat pump:

REDUXI GATEWAY RELAY CONTACT	HEAT PUMP CONTACT ON CN35	WIRE COLOUR
Relay 1, **NO** contact	Contact 1	Black
Relay 1, **COM** contact	Contact 2	Green
Relay 2, **NC** contact	Contact 3	Blue
Relay 2, **COM** contact	Contact 4	Brown

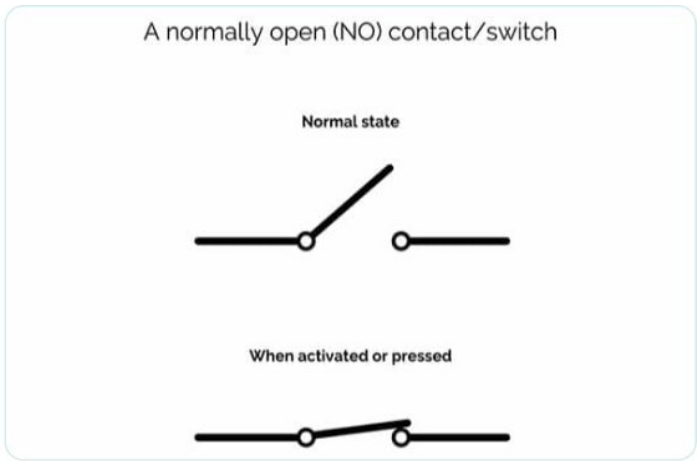
Connection of the relays to the SG-ready contacts

Note

The Reduxi Gateway can use each relay output as permanently closed (**Normally Closed, NC**) or opened (**Normally Opened, NO**). Use the contacts shown in the table above.



Normally closed (NC)



Normally open (NO)

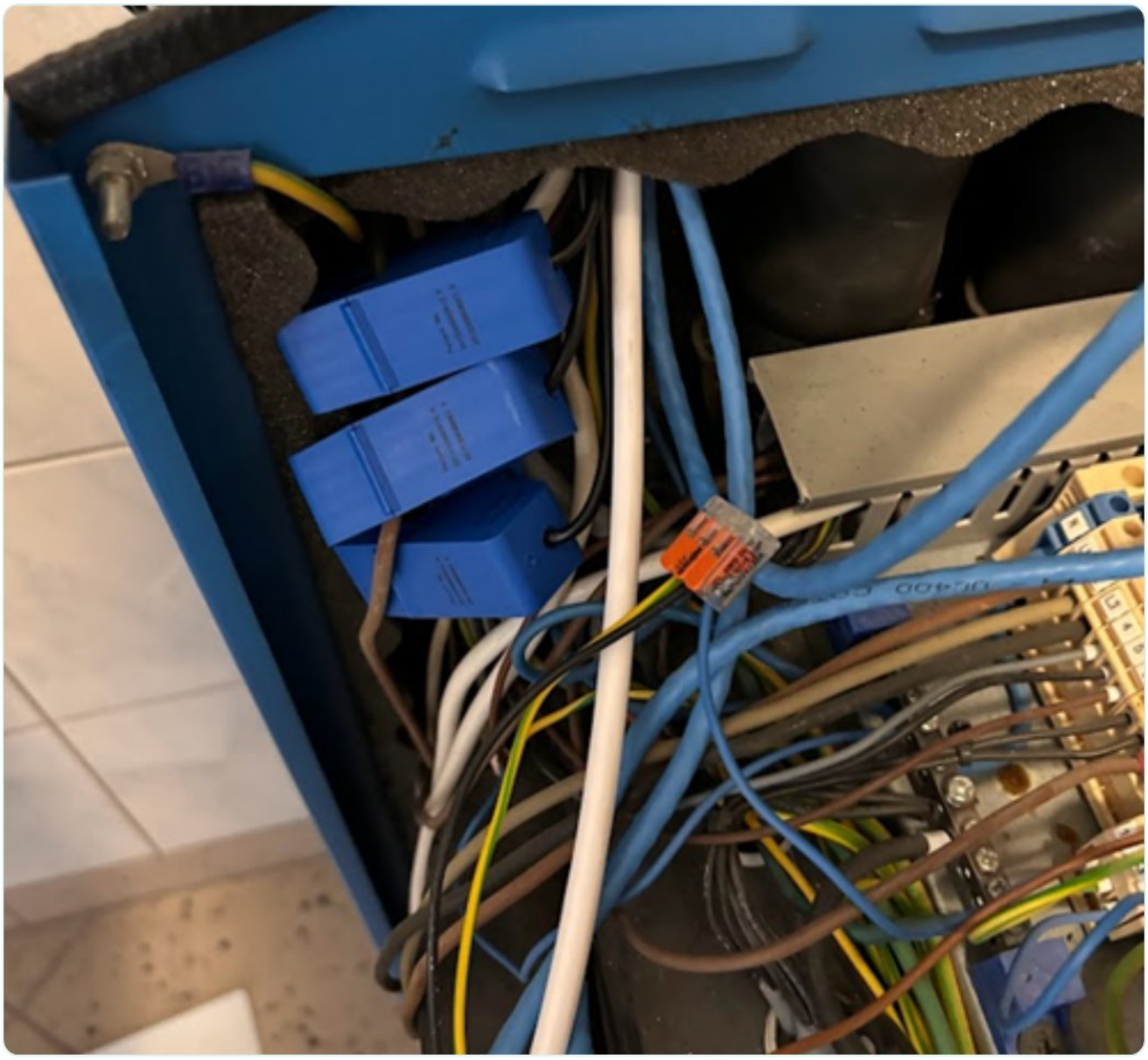
2.3 Connect the current sensors

The current sensors measure the current of the heat pump. They provide the real-time power consumption of the heat pump. The voltage comes from the Reduxi Controller. If it is not available, the default voltage of 230 V is used.

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

Current sensor inputs of the Reduxi Gateway

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



Current sensors on the phase wires

3 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

3.1 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

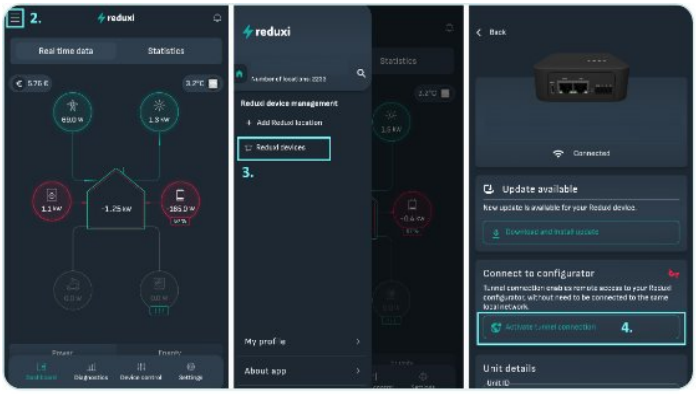
Tap the menu icon (three lines, top left) and select **Reduxi devices**.

3 Activate the tunnel connection

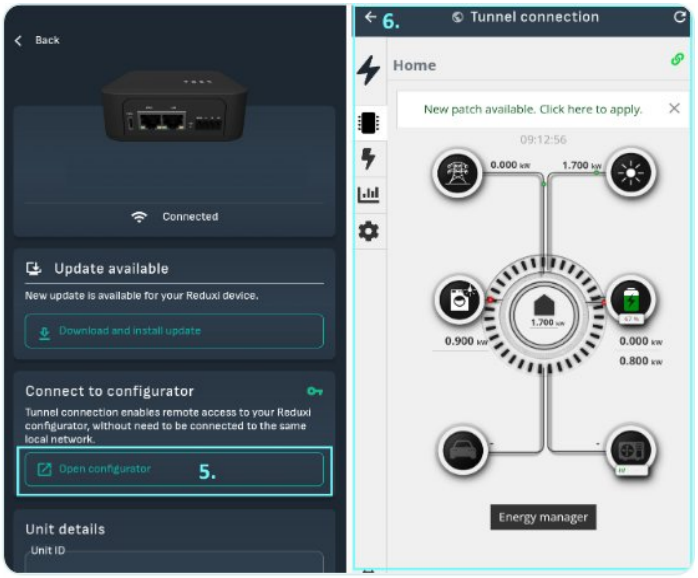
Switch on the tunnel connection and wait a moment until it is active.

4 Open the configurator

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



Activate the tunnel connection (step 3)



Open configurator (step 4)

3.2 Via a web browser

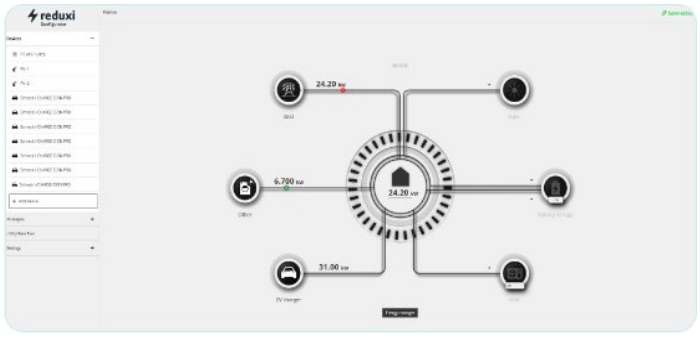
1 Open the login page

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



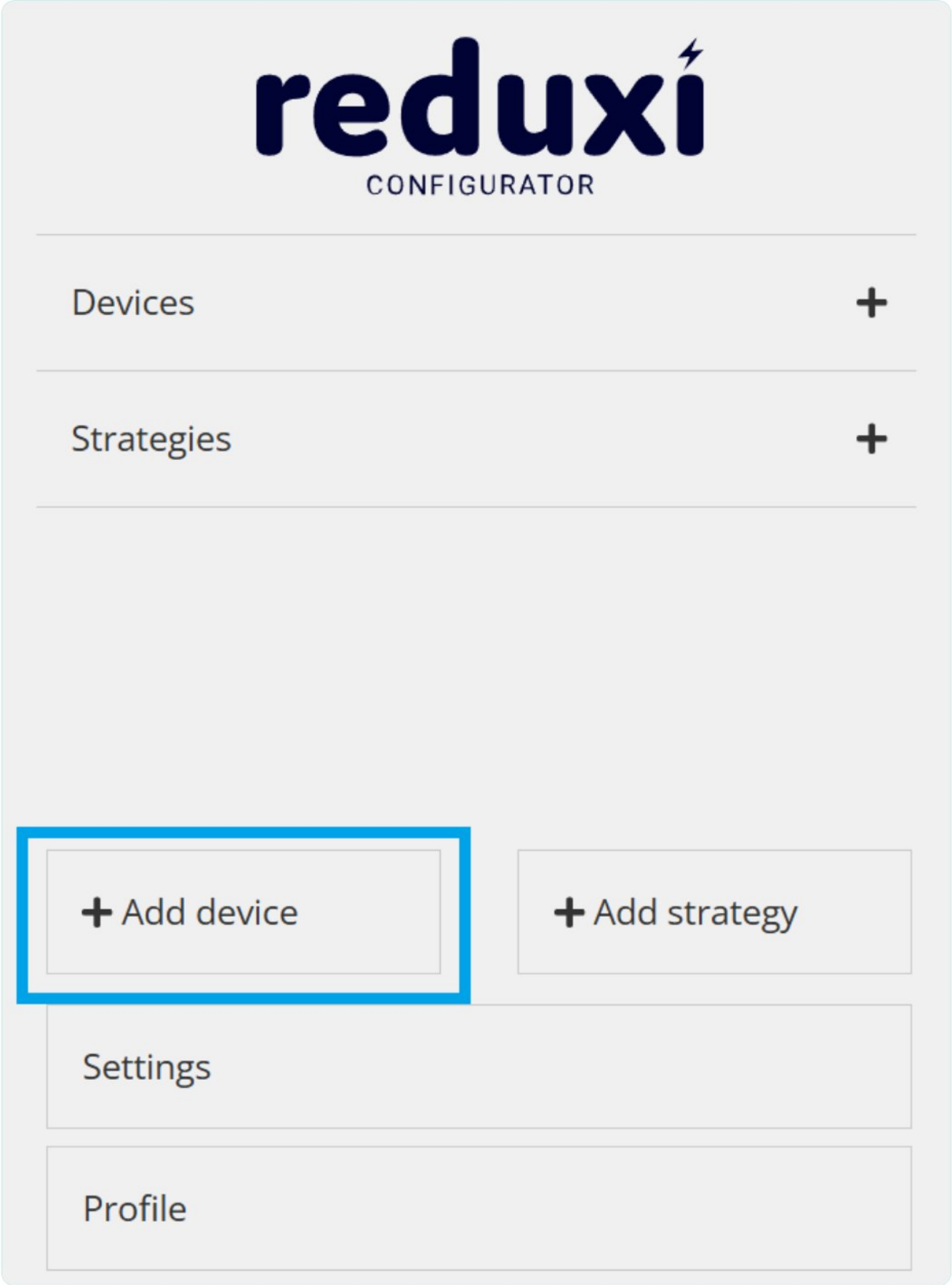
Controller web interface after login

4 Add the heat pump to Reduxi

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

4.1 Basic settings

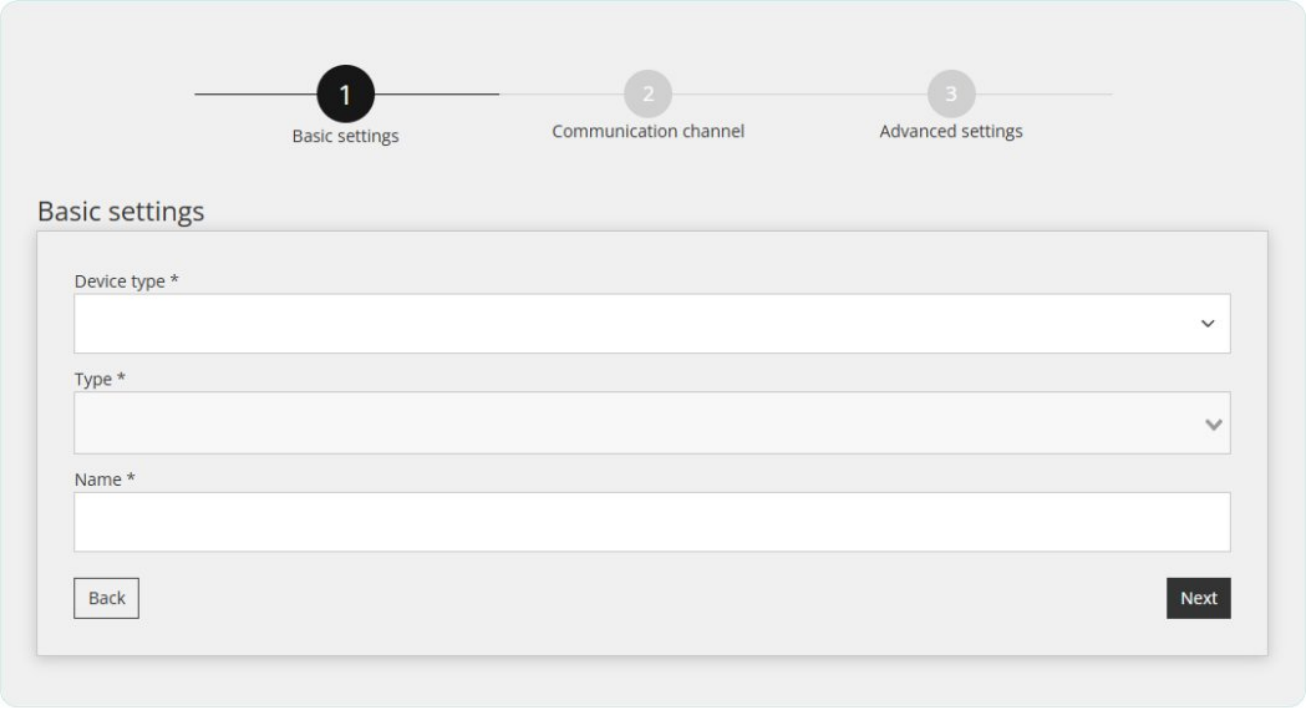
Log in locally to the **Reduxi Configurator** on the controller (see **Point 3**) and press the **Add device** button.



*The **Add device** button*

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 **Midea HP**



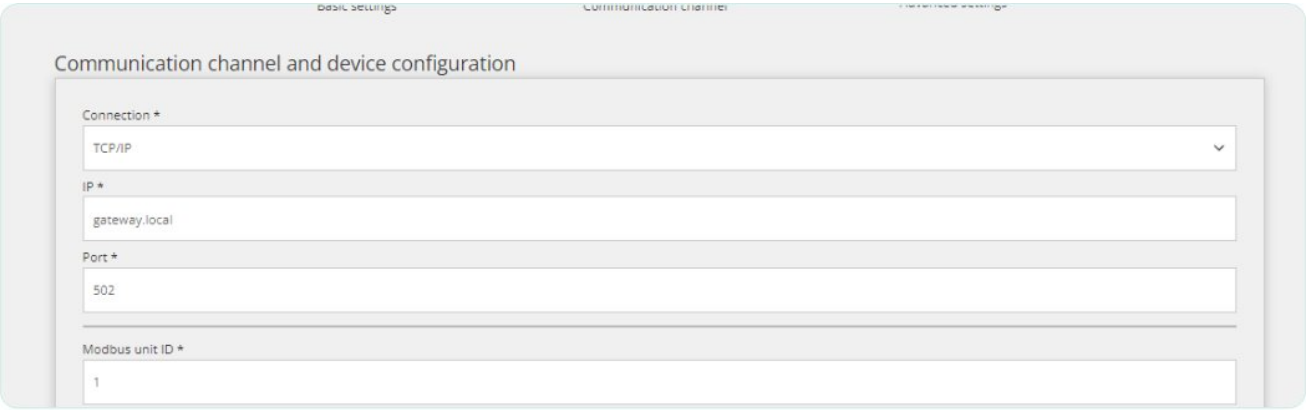
Basic settings: device type, type and name

After you have entered everything, press **Next**.

4.2 Communication settings

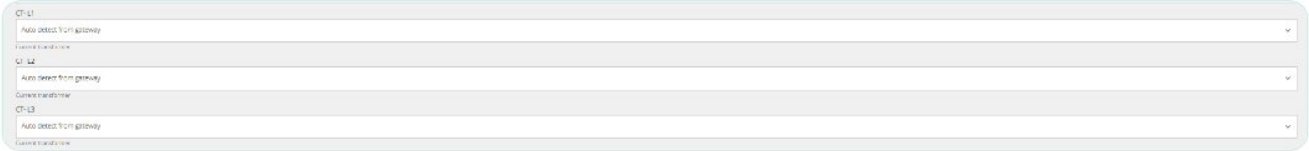
The communication channel has three parts.

Part 1: connection between the Reduxi Gateway and the Reduxi Controller. Complete the fields as shown in the image. They are populated automatically.



Part 1: gateway connection

Part 2: current sensors of the Reduxi Gateway. Select **Auto detect from gateway** for all current sensors.



Part 2: current sensors

Part 3: signals of the gateway relays. Relay 1 is the EVU contact. Relay 2 is the SG-ready contact. Their states set the operating mode of the heat pump:

1.When EVU signal is on, and SG signal is on, as long as the DHW mode is set to be valid, the heat pump and IBH will operate in DHW mode at the same time automatically.When T5 rises to 60°C,the DHW mode will exit and switch to cooling/heating mode normally.

2.When EVU signal is on, and SG signal is off, as long as the DHW mode is set to be valid and the mode is on,the heat pump and IBH will operate in DHW mode at the same time automatically,when T5≥Min(T5S+3,60),the DHW mode will exit and switch to cooling/heating mode normally.(T5S is the setting temperature)

3.When EVU signal is off, SG signal is on, the unit operates normally.

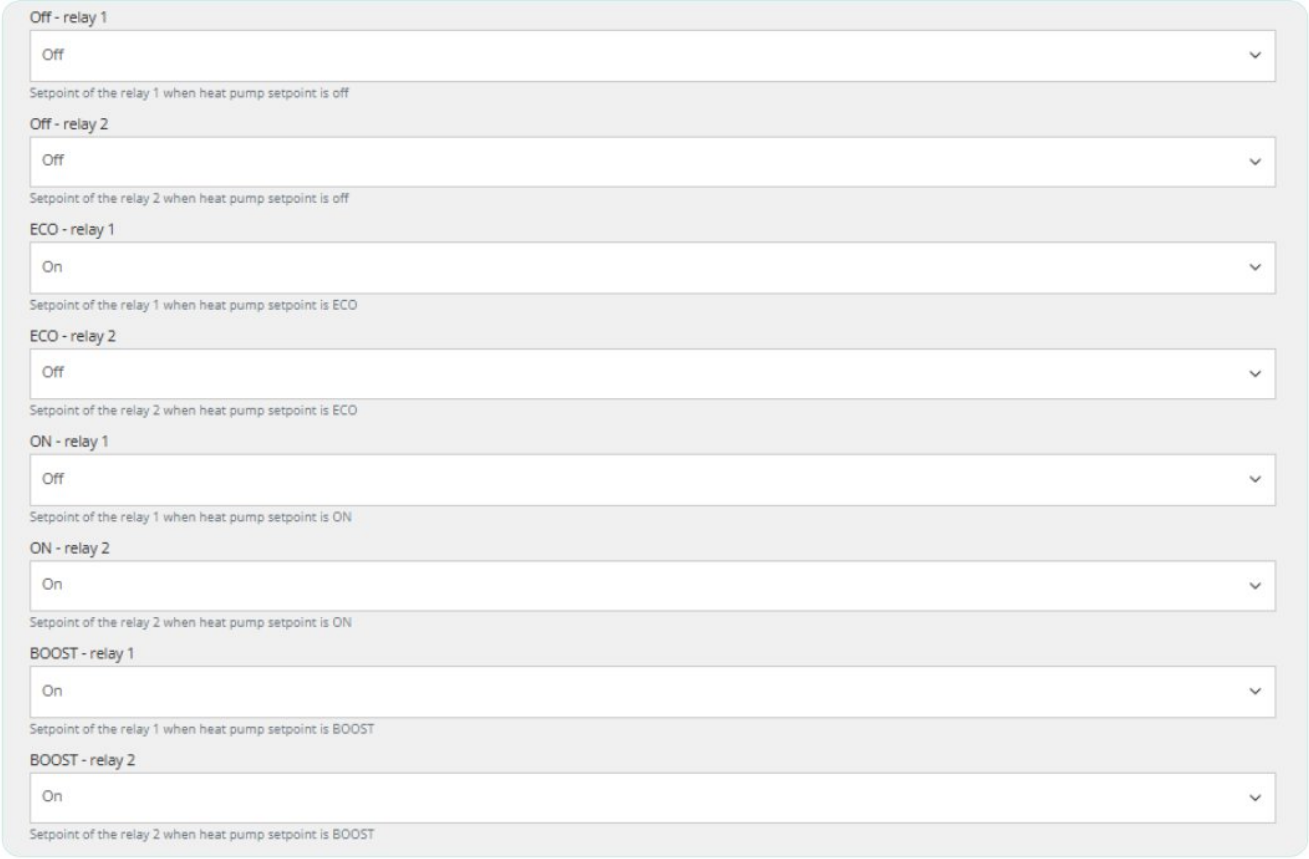
4.When EVU signal is off, and SG signal is off, the unit operates as below: The unit will not operate DHW mode, and the IBH is invalid, disinfect function is invalid. The max running time for cooling/heating is "SG RUNNING TIME", then unit will be off.

Logic of the SG-ready signal combinations

MODE	RELAY 1 (EVU CONTACT)	RELAY 2 (SG-READY)
ON (normal operation)	Opened (NO)	Closed (NC)
OFF	Opened (NO)	Opened (NO)
ECO	Closed (NC)	Opened (NO)
BOOST	Closed (NC)	Closed (NC)

NO stands for normally opened. NC stands for normally closed.

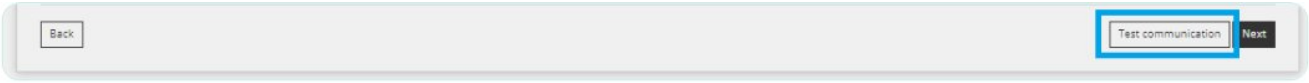
Complete configuration of the relay signals in the Reduxi Configurator:



Complete relay signal configuration

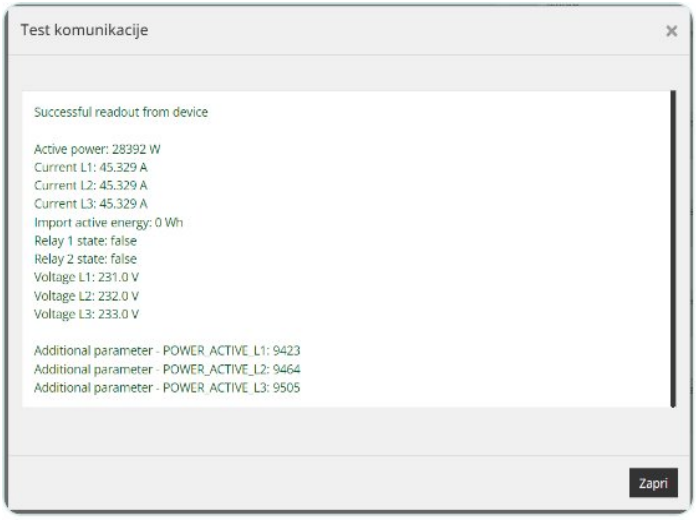
4.3 Test communication

Click **Test communication** at the lower right, below the communication parameters. It reads the device once and saves nothing.

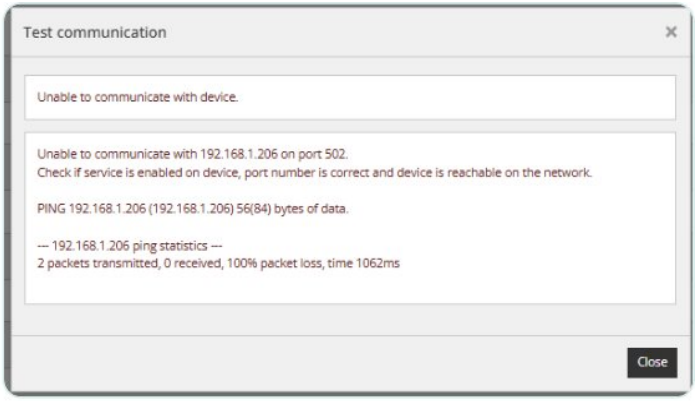


*The **Test communication** button*

The test returns one of two results:



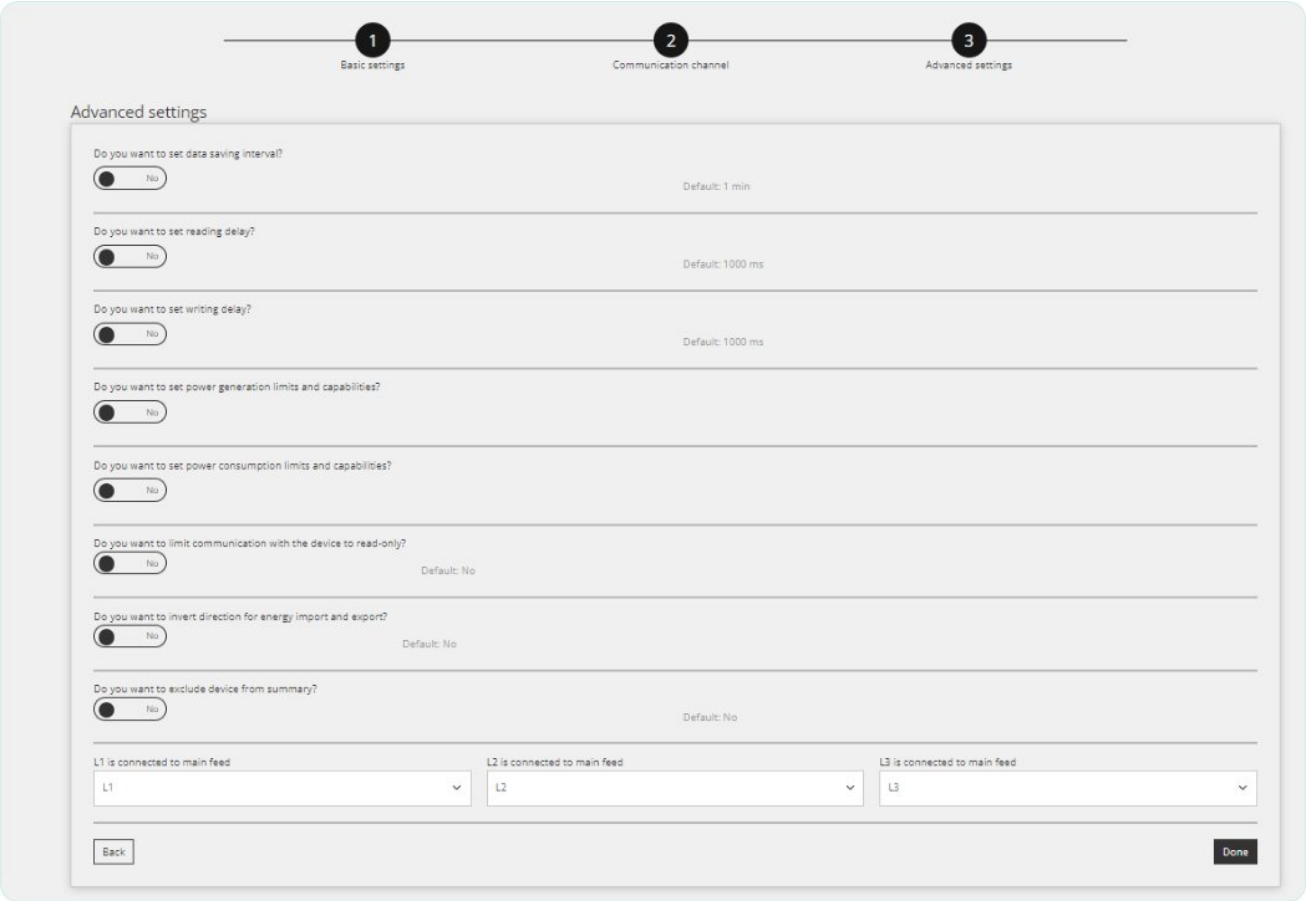
1. Communication works properly



2. Communication does not work properly

4.4 Advanced settings

The advanced settings are optional. They depend on the location where the Reduxi Controller is installed.



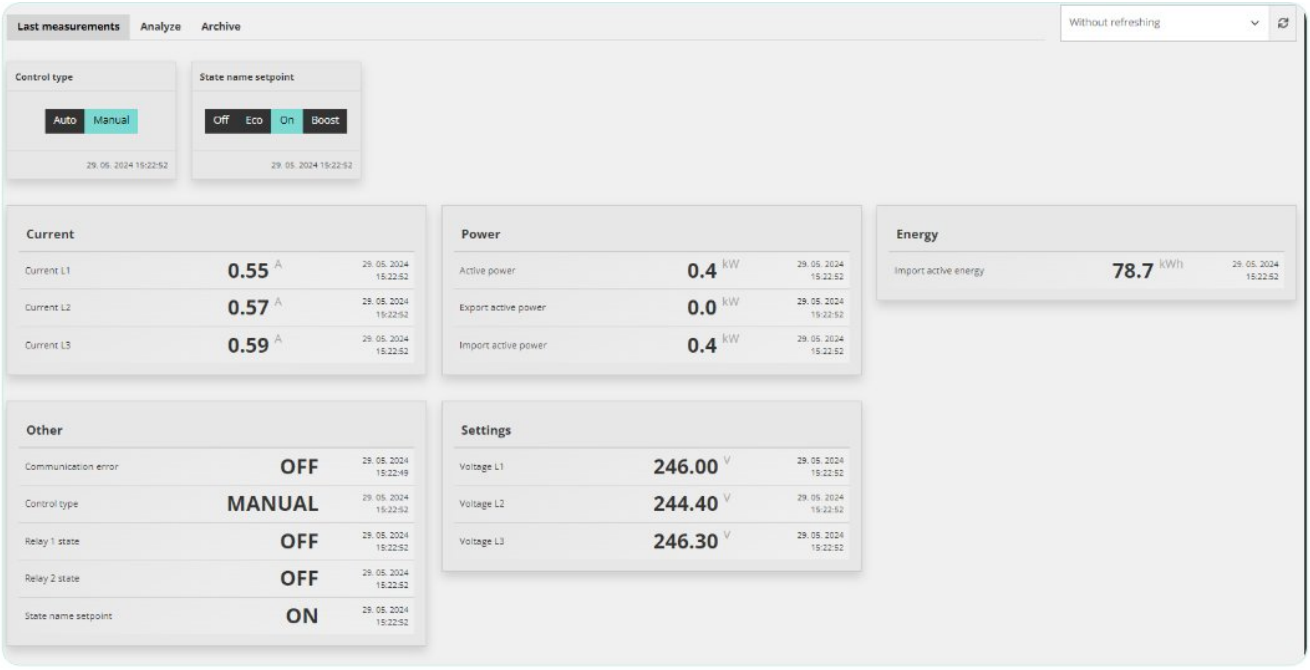
Advanced settings

After the last setting, press **Done** at the lower right. Only **Done** creates the device.

5 Check the readings

5.1 Last measurements

After communication is established, check the values under **Devices – Midea HP** in the Reduxi Configurator as an additional test.



Last measurements of the heat pump

5.2 Enable control by Reduxi

For advanced heat pump control, integrate the device into the Reduxi system strategy. Under **Devices – Midea HP** 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 add the device and check the values, you can also inspect and control it in **the Reduxi application**.

✓ Summary

Preparation (Point 1): Get the Reduxi Controller and the Reduxi Gateway with 3 current sensors.

Midea heat pump (Point 2): Connect the gateway relays to connector CN35. Mount the current sensors on the phases L1, L2 and L3.

Add to Reduxi (Points 3–4): Log in to the Reduxi web interface. Add the device with type Reduxi Meter, set the relay signals and test the communication.

Go live (Point 5): Check the last measurements. Set the control type to AUTO and define a strategy.

Common issues

ISSUE	SOLUTION
Heat pump does not change its mode	Check the wiring to connector CN35 (see Point 2.2). Check the relay states of the mode (see Point 4.2). Check that the control type is AUTO (see Point 5.2).
Power readings are missing or wrong	Check that each current sensor covers one phase wire L1, L2 or L3 (see Point 2.3). Check that Auto detect from gateway is selected for all current sensors (see Point 4.2).
Gateway not found in the communication settings	Add the Reduxi Gateway to the Reduxi Controller first, wirelessly (WLAN) or via UTP cable (LAN). See the Reduxi Gateway article.
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:

How to configure the Reduxi Gateway
Connect the Reduxi Gateway to the Reduxi Controller.

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