

How to connect Midea heat pump with Reduxi Gateway

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

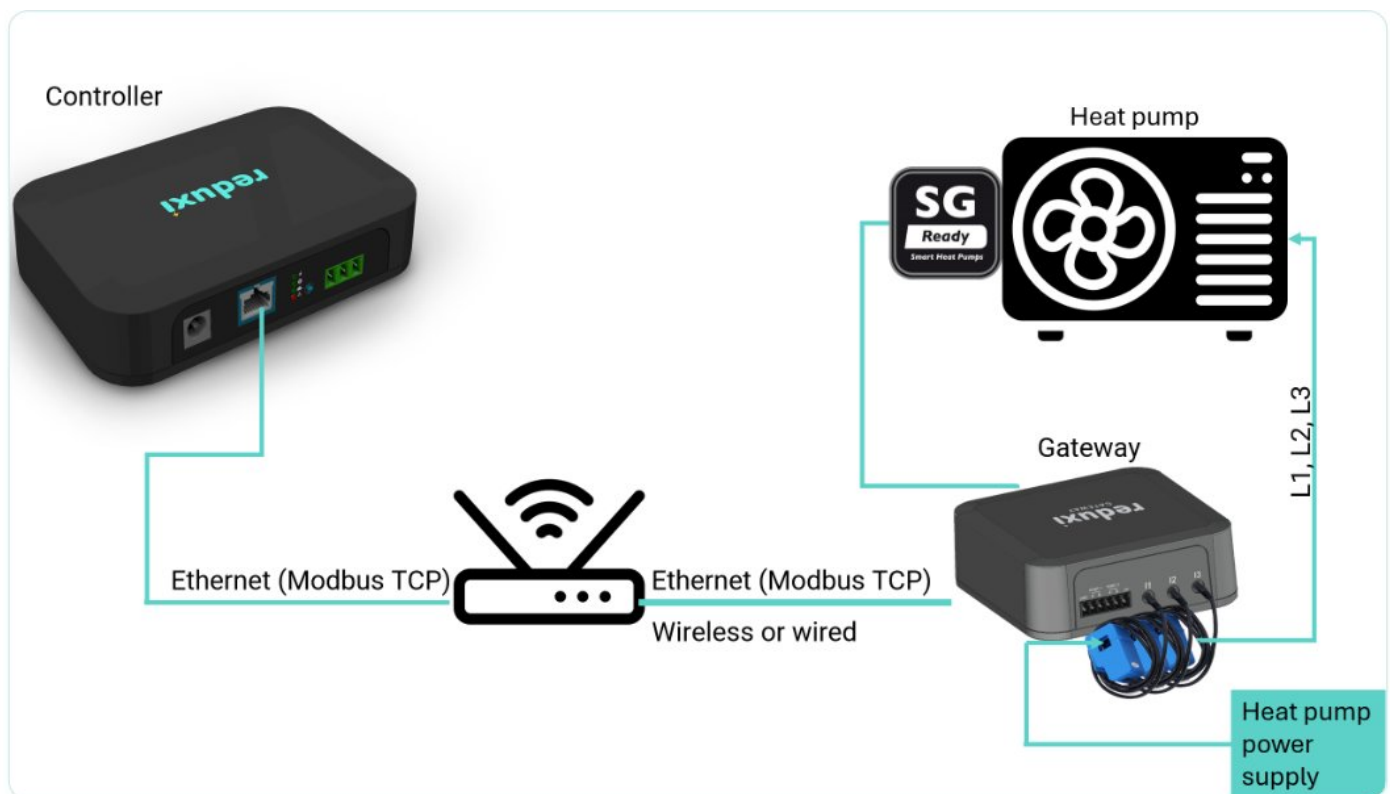
First add the Reduxi Gateway device to the Reduxi Controller. The gateway then controls the operating modes of the heat pump. The connection is wireless (WLAN) or wired via a UTP cable (LAN). More about this: [Gateway to Controller connection](#).

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

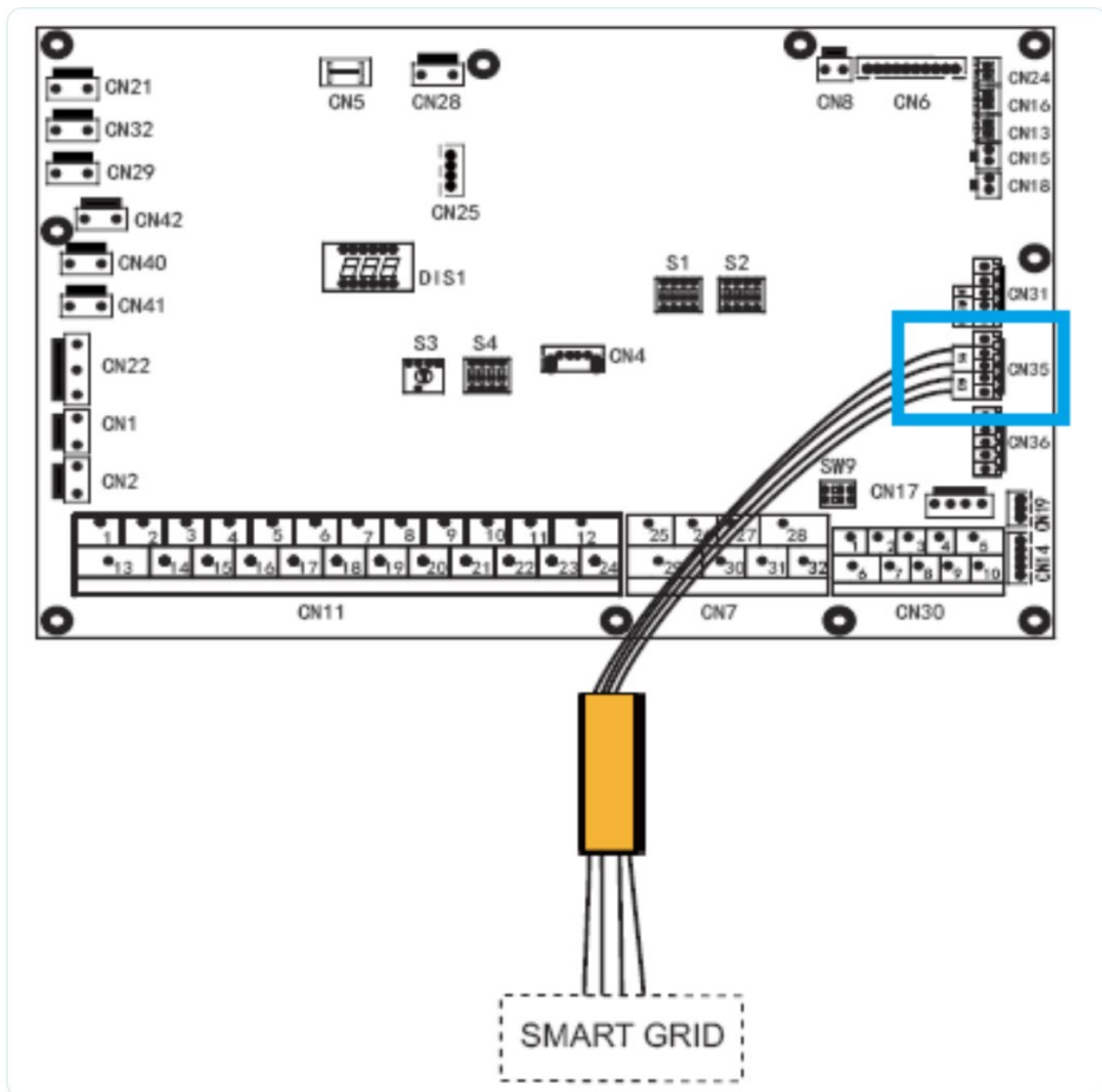
Text description of this image

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**.

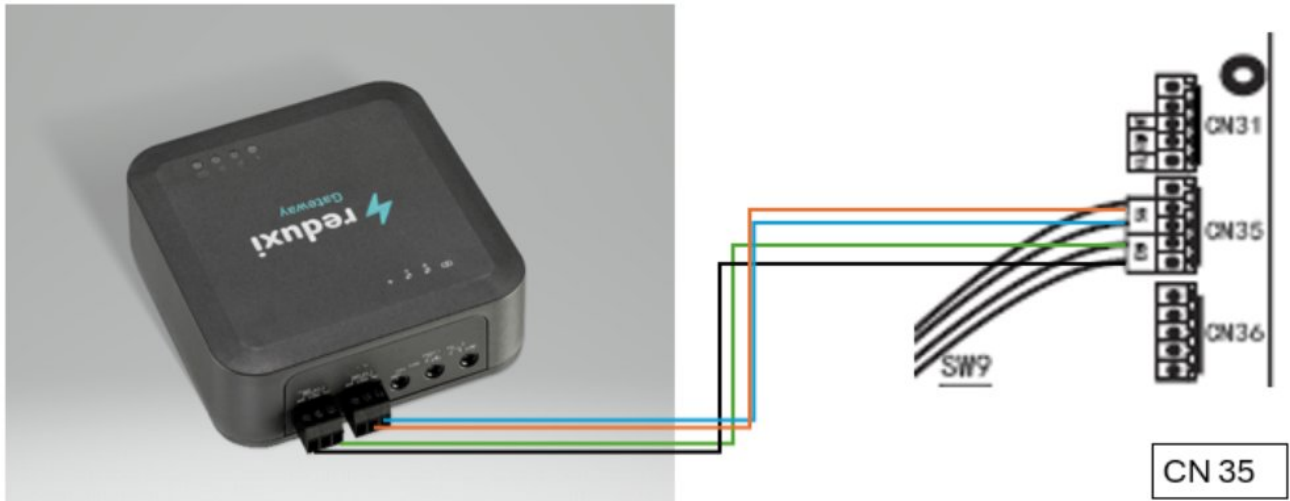


SG-ready contacts on the circuit board: connector CN35

Text description of this image

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

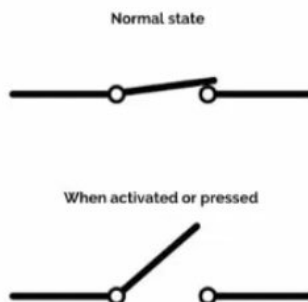
Text description of this image



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.

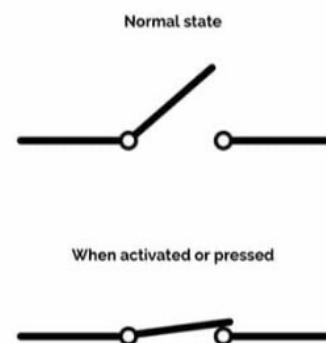
A normally closed (NC) contact/switch



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

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

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

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

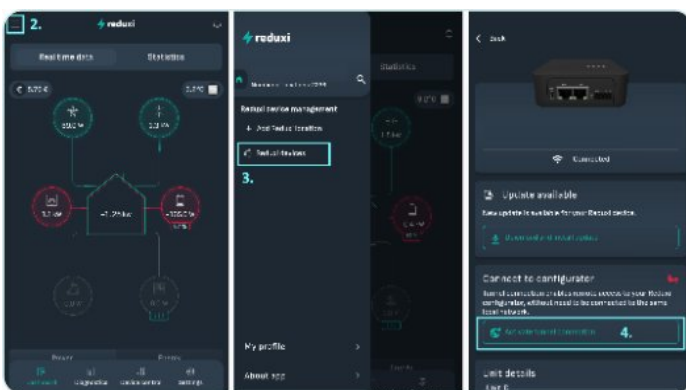
Tap the menu icon (three lines, top left) and select **Reduxi devices**.

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)

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)

2. Text description of this image

3.2 Via a web browser

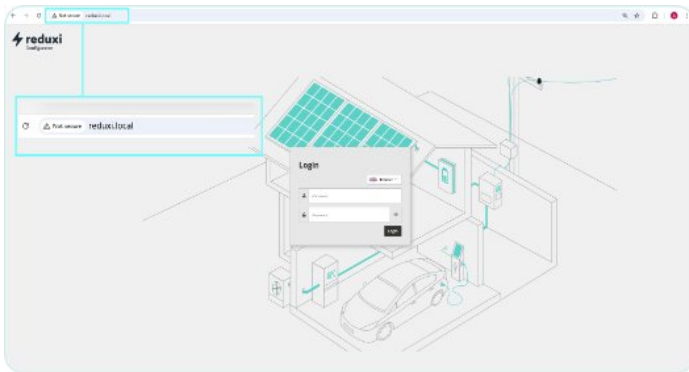
1 Open the login page

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

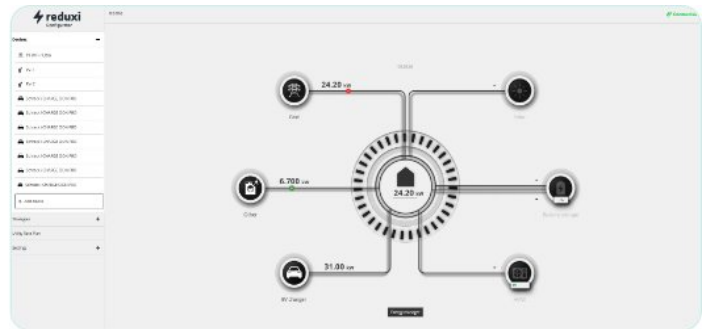
Log in

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



Reduxi Controller login screen

Text description of this image



Controller web interface after login

2. Text description of this image

Screenshot of the Reduxi Configurator web interface

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.

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 **Midea HP**

The image shows a configuration interface with a progress bar at the top indicating three steps: 1. Basic settings, 2. Communication channel, and 3. Advanced settings. The first step, 'Basic settings', is active and contains a form with the following fields:

- Device type ***: A dropdown menu.
- Type ***: A dropdown menu.
- Name ***: A text input field.

At the bottom of the form are two buttons: 'Back' and 'Next'.

Basic settings: device type, type and name

Text description of this image

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.

basic settings Communication channel Network settings

Communication channel and device configuration

Connection *
TCP/IP

IP *
gateway.local

Port *
502

Modbus unit ID *
1

Part 1: gateway connection

Text description of this image

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

CT-U1
Auto detect from gateway

CT-U2
Auto detect from gateway

CT-U3
Auto detect from gateway

CT-U4
Auto detect from gateway

Part 2: current sensors

Text description of this image

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 $T5 \geq \text{Min}(T5S + 3, 60)$, 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

Text description of this image

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:

The screenshot displays the Reduxi Configurator interface for setting relay signals. It is organized into sections for different modes: Off, ECO, ON, and BOOST. Each mode has two relay configuration entries (Relay 1 and Relay 2). The 'Off' mode shows both relays set to 'Off'. The 'ECO' mode shows Relay 1 set to 'On' and Relay 2 set to 'Off'. The 'ON' mode shows both relays set to 'Off'. The 'BOOST' mode shows both relays set to 'On'. Each configuration entry includes a dropdown menu for the signal state and a descriptive label below it.

Off - relay 1
Off
Setpoint of the relay 1 when heat pump setpoint is off

Off - relay 2
Off
Setpoint of the relay 2 when heat pump setpoint is off

ECO - relay 1
On
Setpoint of the relay 1 when heat pump setpoint is ECO

ECO - relay 2
Off
Setpoint of the relay 2 when heat pump setpoint is ECO

ON - relay 1
Off
Setpoint of the relay 1 when heat pump setpoint is ON

ON - relay 2
On
Setpoint of the relay 2 when heat pump setpoint is ON

BOOST - relay 1
On
Setpoint of the relay 1 when heat pump setpoint is BOOST

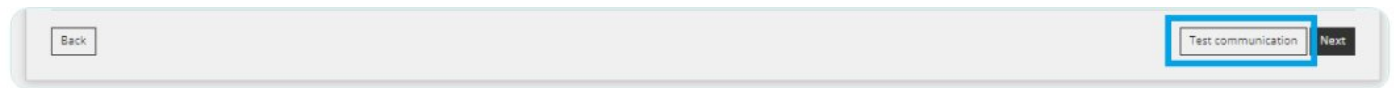
BOOST - relay 2
On
Setpoint of the relay 2 when heat pump setpoint is BOOST

Complete relay signal configuration

Text description of this image

4.3 Test communication

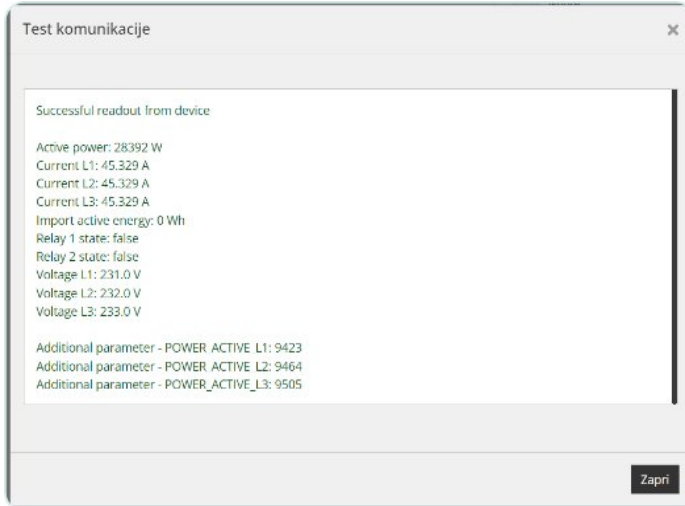
Click **Test communication** at the lower right, below the communication parameters. It reads the device once and saves nothing.



The **Test communication** button

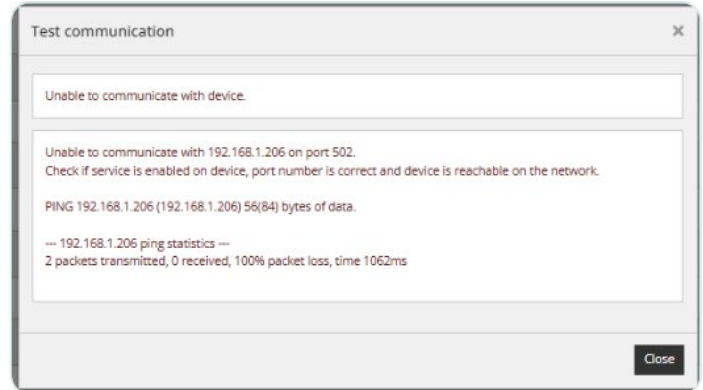
Text description of this image

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):

4.4 Advanced settings

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

1
Basic settings
2
Communication channel
3
Advanced settings

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

L1

L2 is connected to main feed

L2

L3 is connected to main feed

L3

Back
Done

Advanced settings

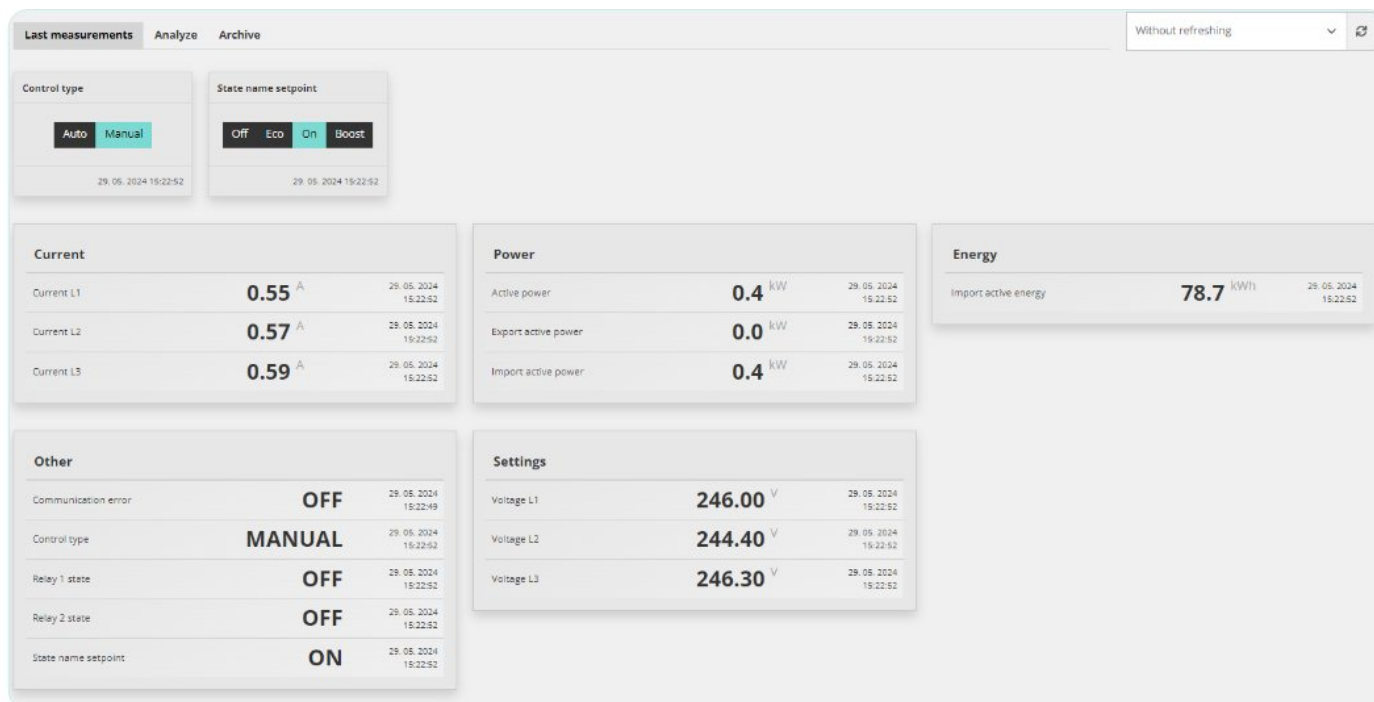
Text description of this image

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

Text description of this image

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 <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:



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



Strategies for the Reduxi Controller

Energy manager and other strategies explained