

Connect Hybrid Invetrer Deye to Reduxi

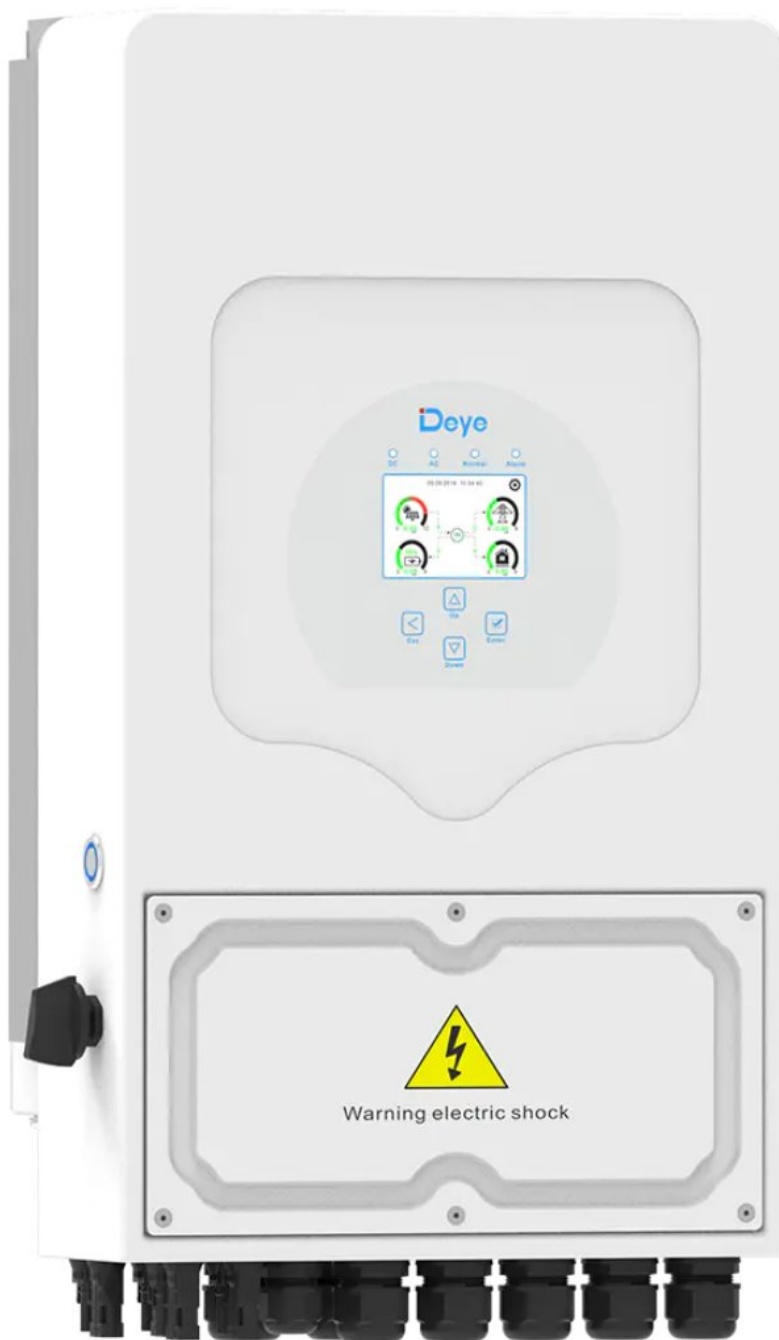
Connect the Deye hybrid inverter to the Reduxi Controller via RS-485 and Modbus. Reduxi can reduce your electricity bill by 70%.

🔌 Deye hybrid inverter (1-phase LV, 3-phase LV, 3-phase HV) · Reduxi Controller

🌐 Modbus RTU via RS-485 (RJ-45)

📄 Modbus unit ID: slave ID of the inverter





Deye hybrid inverter (single phase)

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- Inverter side

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1 Prepare the hybrid inverter connection

1.1 Technical documentation

Deye publishes one user manual per inverter series:

- [User manual | Single phase Hybrid Inverter Low-Voltage \(LV\)](#) – SUN-3.6/5/6/7.6/8K-SG05LP1-EU
- [User manual | Three-phase Hybrid Inverter Low-Voltage \(LV\)](#) – Linked for SUN-5/6/8/10/12K-SG04LP3-EU
- [User manual | Three-phase Hybrid Inverter High-Voltage \(HV\)](#) – SUN-5/6/8/10/12/15/20/25K-SG01HP3-EU-AM2

1.2 Supported models and connection options

The guide covers these Deye hybrid inverter series:

MODEL	POWER	PHASES	MPPT	INVERTER TYPE	BATTERY
SUN-3.6/5/6/7.6/8K-SG05LP1-EU	3.6–8 kW	Single phase	2	Hybrid inverter	LV battery supported
SUN-5/6/8/10/12K-SG04LP3-EU	5–12 kW	Three phase	2	Hybrid inverter	LV battery supported
SUN-5/6/8/10/12/15/20/25K-SG01HP3-EU-AM2	5–25 kW	Three phase	2	Hybrid inverter	HV battery supported



Deye hybrid inverter (1 phase)



Deye hybrid inverter (3 phase LV)



Deye hybrid inverter (3 phase HV)



Important

- With **Low Voltage (LV)** installations you can only use an **RTU connection** to access the Modbus interface.
- With **High Voltage (HV)** installations you can also use the **Solarman Dongle with Modbus TCP/IP** to access the Modbus interface.

This guide describes the RS-485 connection with Modbus RTU.

1.3 Required equipment

- ☐ Reduxi Controller
- ☐ RS-485 cable with RJ-45 connector for the Modbus port of the inverter
- ☐ Laptop or tablet with internet access to configure the device in Reduxi

2 Connect the Reduxi Controller to the inverter

To connect the Reduxi Controller to the Deye hybrid inverter, set the RS-485 serial connection correctly on both sides.

2.1 Reduxi Controller side of the RS-485 connection

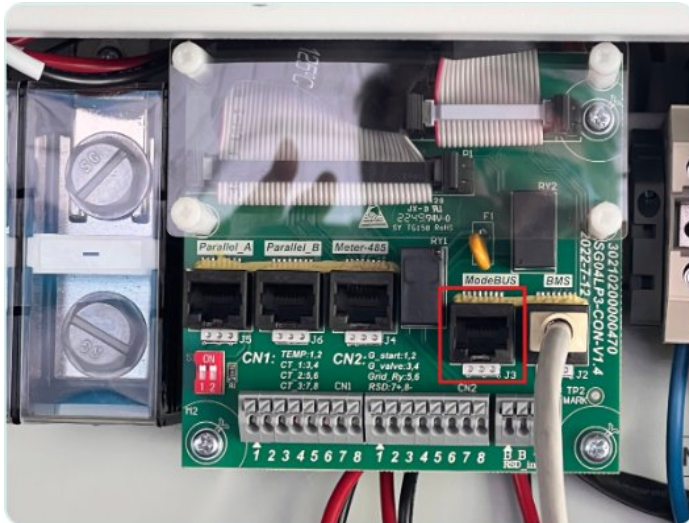
All connection details are in the [Reduxi Controller](#) article under point 2.3.4 Communication interfaces.

2.2 Inverter side of the RS-485 connection

The Deye hybrid inverter uses an RJ-45 connector for the physical connection to the Modbus port. The manuals show where the ports are located.

Single-phase hybrid inverter LV

The left picture shows where the Modbus port is located on the circuit board of the single-phase inverter. The right picture shows the correct wiring. **Follow the wiring exactly.**



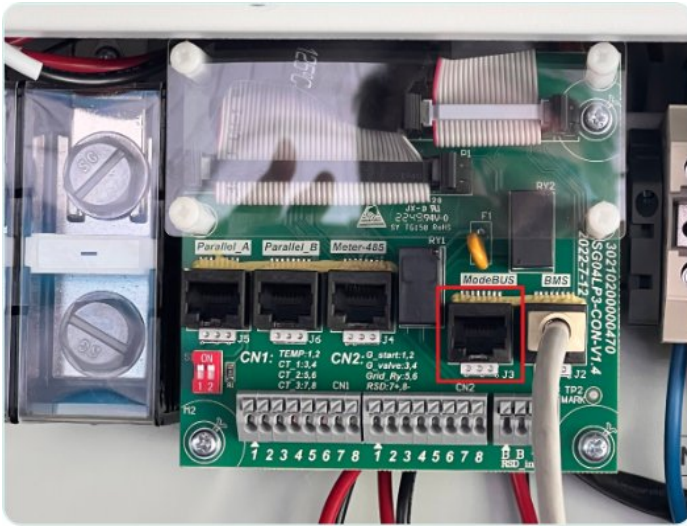
Location of the Modbus port

Pin	Function
1	RS-485 B-
2	RS-485 A+
3	GND
4	
5	
6	GND
7	RS-485 A+
8	RS-485 B-

Correct wiring

Three-phase hybrid inverter LV

The left picture shows where the Modbus port is located on the circuit board of the three-phase LV inverter. The right picture shows the correct wiring. **Follow the wiring exactly.**



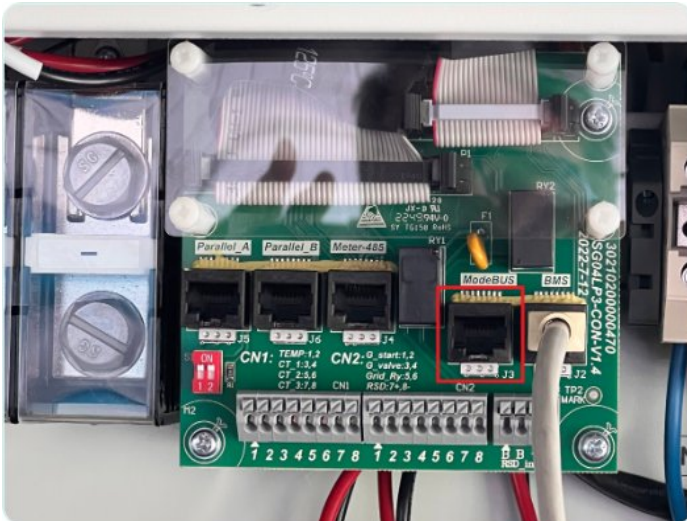
Location of the Modbus port

Pin	Function
1	RS-485 B-
2	RS-485 A+
3	GND
4	
5	
6	GND
7	RS-485 A+
8	RS-485 B-

Correct wiring

Three-phase hybrid inverter HV

The pictures (schematic from the manual) show where the Modbus port is located on the circuit board of the three-phase HV inverter and how to wire it.



Location of the Modbus port

Pin	Function
1	RS-485 B-
2	RS-485 A+
3	GND
4	
5	
6	GND
7	RS-485 A+
8	RS-485 B-

Correct wiring

3 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

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

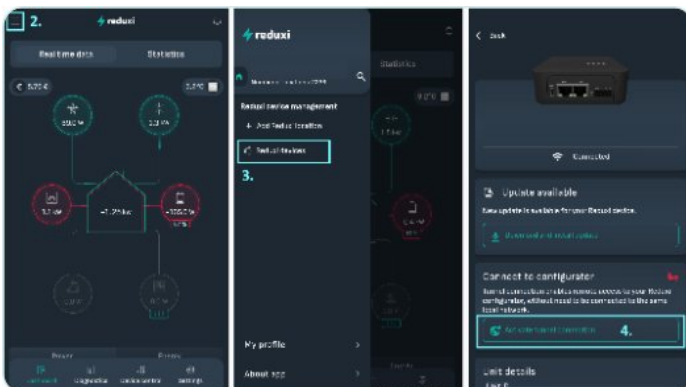
Tap the menu icon (three lines, top left) and select **Reduxi devices**.

3 Activate the tunnel connection

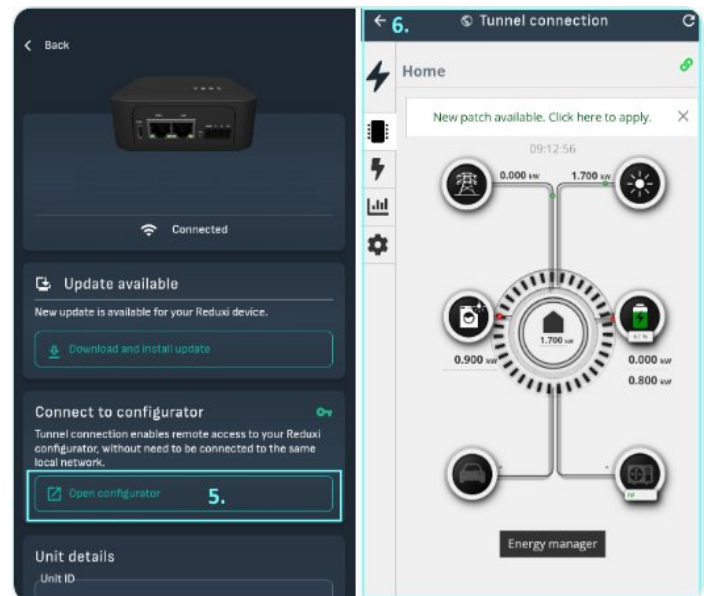
Switch on the tunnel connection and wait a moment until it is active.

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**.

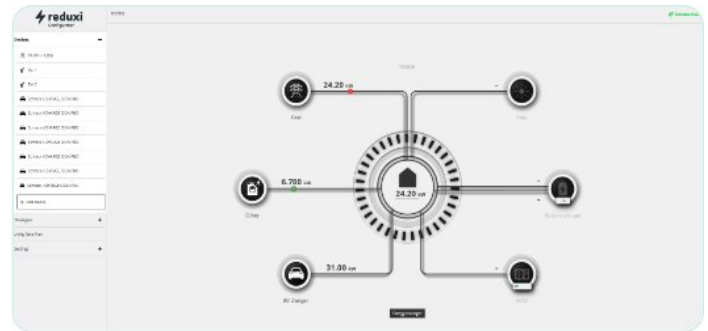
2

Log in

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



Reduxi Controller login screen



Controller web interface after login

4

Add the hybrid inverter to Reduxi

Use these steps to add a new Deye hybrid inverter or to edit an existing one. Make sure the physical connection is set on both sides (see [Point 2](#)).

4.1 Basic settings

Log in locally to the [Reduxi Configurator](#) on the controller (see [Point 3](#)) and click **+ Add device**.

reduxi[⚡]

CONFIGURATOR

Devices



Strategies



+ Add device

+ Add strategy

Settings

Profile

*The **Add device** button*

In the first step (basic settings), select:

- Device type: Hybrid inverter
- Type: Deye Hybrid Inverter 3P or Deye Hybrid Inverter High Voltage 3P
- Name: a name of your choice

1 Basic settings 2 Communication channel 3 Advanced settings

Basic settings

Device type *

Type *

Name *

Back Next

Basic settings: device type, type and name

4.2 Communication settings

In the second step, set the communication parameters. They are divided into two parts.

The first part contains the Modbus (RTU) settings. The picture shows the default settings.

1 Basic settings 2 Communication channel 3 Advanced settings

Communication channel and device configuration

Connection *

Local serial port

Port *

Port 1

Baud rate *

115200 bits/s

Data bits *

8

Stop bits *

1

Parity *

None

Default Modbus (RTU) settings

The second part contains the Modbus unit ID and additional options (highlighted with a blue rectangle).

1
Basic settings
2
Communication channel
3
Advanced settings

Communication channel and device configuration

Connection *
Local serial port

Port *
Port 1

Baud rate *
115200 bits/s

Data bits *
8

Stop bits *
1

Parity *
None

Modbus unit ID *
1

CT / meter *
Internal CT

Installation type of the CT / meter

PV *
Yes

Is PV installed on the inverter?

Battery *
Yes

Is battery installed on the inverter?

Back
Test communication Next

Modbus unit ID and additional options

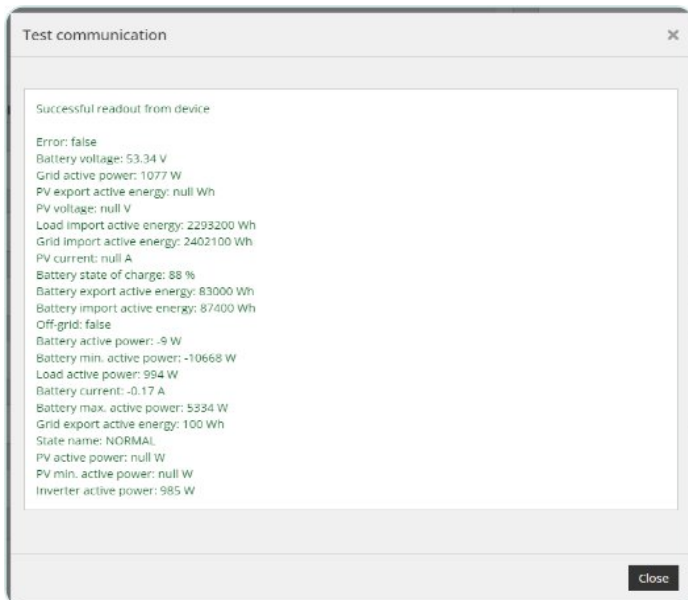
Define these values in the additional options:

PARAMETER	VALUE
Modbus unit ID	The slave ID of the Modbus device
CT/meter	Internal or external CT or meter
PV	yes or no
Battery	yes or no

4.3 Test communication

After you set the communication parameters (see [4.2](#)), click **Test communication** to check that communication works.

The test returns one of two results:



1. Communication works properly



2. Communication does not work properly



If the test fails

Try different Modbus settings or check the physical connection.

4.4 Advanced settings

The third step is for advanced settings that match your setup on site. Click **Done** at the bottom right, below all input fields, when you have finished. Only **Done** creates the device.

Default advanced settings

4.5 Advanced settings in detail

Do you want to set data saving interval?

Sets how often the Reduxi Controller stores data in its local database. The controller reads and writes data according to the **Reading delay** and **Writing delay**, by default 1000 ms. The saving interval defines how much of that data is stored. Example: with a 1-minute interval, one value per minute (every 60 data readings or writings) is stored in the controller database.

Select **YES** to change the default value.

Do you want to set reading delay?

Sets how often data is read from the device.

Select **YES** to change the default value.

Do you want to set writing delay?

Sets how often data is written to the device.

Select **YES** to change the default value.

Do you want to set power generation limits and capabilities?

Sets lower and upper limits for power generation (kW). The inverter produces energy only while the power production is within the limits. Otherwise it produces no energy.

Select **YES** to change the default value.

Do you want to set power consumption limits and capabilities?

Sets lower and upper limits for power consumption (kW). The inverter uses energy to charge the battery only while the power demand is within the limits. Otherwise it does not charge the battery.

Select **YES** to change the default value.

Do you want to set battery capacity?

For all Deye hybrid inverters, the battery capacity is read directly from the inverter and stored in the local database.

Select **YES** to change the value written on the inverter.

Do you want to set min. battery SOC?

For all Deye hybrid inverters, the min. battery SOC is read directly from the inverter. You can still change the limit: set the input field to **YES** and enter the min. battery SOC.

Select **YES** to change the default value.

Note: Check whether your warranty stays valid if you change this parameter.

Do you want to set max. battery SOC?

For all Deye hybrid inverters, the max. battery SOC is read directly from the inverter. You can still change the limit: set the input field to **YES** and enter the max. battery SOC.

Select **YES** to change the default value.

Do you want to limit communication with the device to read-only?

Communication works in two directions: READ and WRITE. With **NO**, read and write are enabled. With **YES**, only read is enabled.

Select **YES** to change the default value.

Do you want to invert direction for energy import and export?

If the energy flow has the wrong sign (import is shown instead of export), enable this function to switch the sign.

Select **YES** to change the default value.

Do you want to exclude device from the summary?

The home page shows the flow of power consumption and production. With **YES**, the data of this device is excluded from the power flow visualizations. For example, PV, battery and in some cases the grid meter (if no other grid meter is installed) are then not displayed in the summary.

Select **YES** to change the default value.

L1, L2, L3 is connected to main feed

If L1 of the device is not connected to the L1 main feed, choose the correct main feed (L2 or L3).

If L2 of the device is not connected to the L2 main feed, choose the correct main feed (L1 or L3).

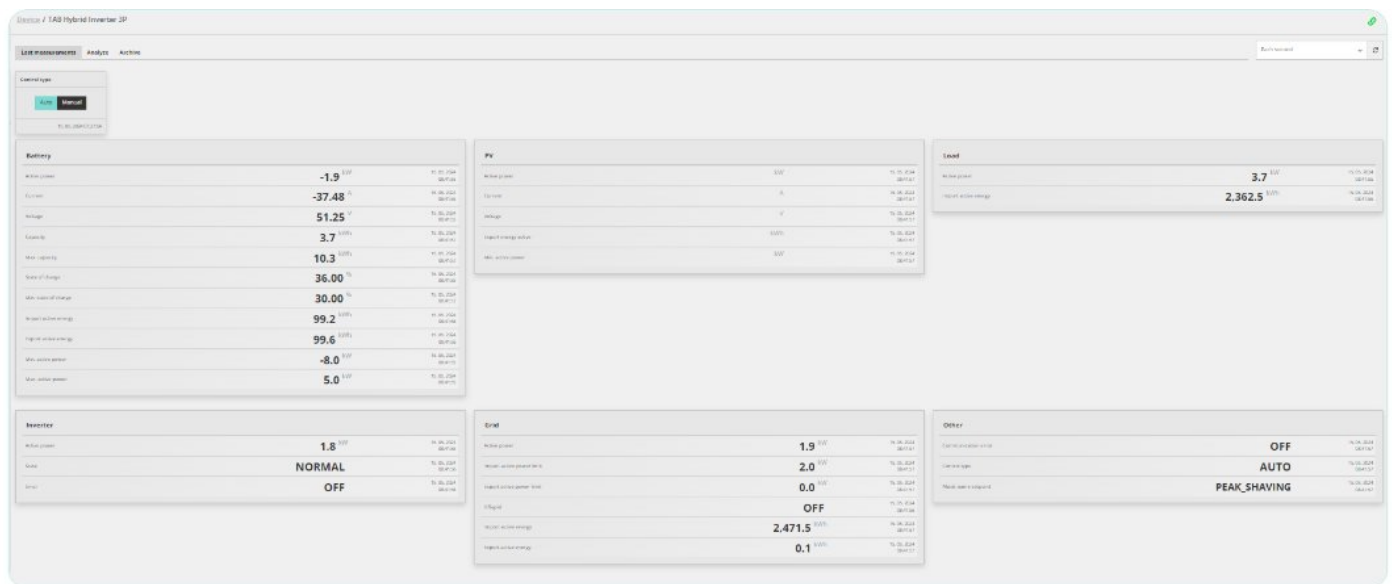
If L3 of the device is not connected to the L3 main feed, choose the correct main feed (L1 or L2).

For a single-phase device, select **not connected** for L2 and L3 and choose the correct main feed (L1, L2 or L3) for L1.

5 Check the readings and set the control type

5.1 Last measurements

Use this point for the last check that the device and the connection work properly. Readings and settings are displayed under **Devices – (device name) – Last measurement**.



Last measurements of the hybrid inverter

After you add the device successfully in the configurator, you can monitor and control it in the [Reduxi cloud application](#).

5.2 Control type

The control type defines how the Reduxi Controller controls the selected device. To find it, click the device in the menu tree on the left side of the screen. If the device can be controlled, the **Control type** card appears below the last measurement tab.

Device / TAB Hybrid Inverter 3P

Last measurements

Analyze

Archive

Control type

Auto

Manual

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Control type card

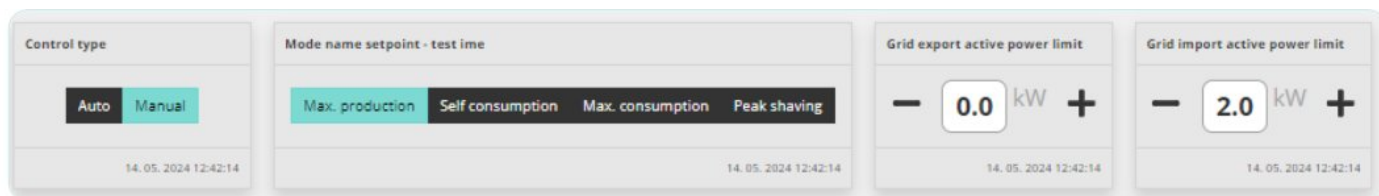
In the Control type card you can choose between Auto and Manual mode:

- **Auto:** all power limits for the inverter (consumption and production on the grid) come directly from a user-defined strategy. How to set up strategies: [Strategies for Reduxi controller](#).
- **Manual:** you set all power limits for the inverter (consumption and production on the grid) directly. In Manual mode, four more options are available: [Max. production](#), [Self-consumption](#), [Max. consumption](#) and [Peak shaving](#).

| 5.3 Max. production

Use Max. production when you want to export as much energy to the grid as possible, taken from PV or battery storage.

The power limits for export and import from the grid stay constrained by the two parameters in the right-hand cards **Grid Export/Import active power limits**.



Max. production mode

Case 1: not enough PV production

- PV production is 0
- or PV production is less than the Grid export active power limit
- and Battery storage SOC is above the minimum SOC

Then the battery storage is discharged to reach the Grid export active power limit.

Case 2: enough PV production

- PV production covers the building consumption
- and PV production is more than the Grid export active power limit
- and Battery storage SOC is below the maximum SOC

Then the battery storage is charged with the excess power until it reaches the maximum SOC. When the battery storage reaches the maximum SOC, PV production is limited so that it does not exceed the Grid export active power limit. After the end of the PV production day, Case 1 applies again.



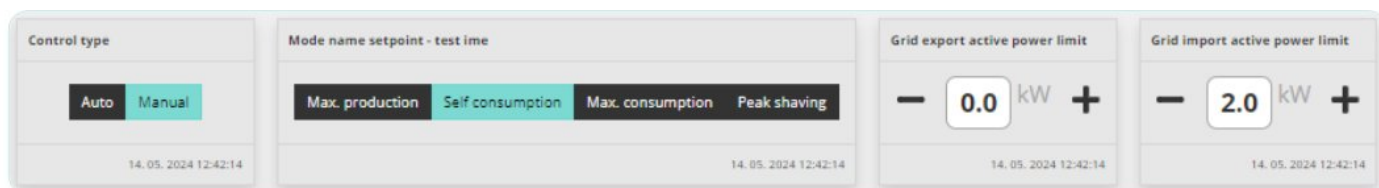
Note

When Max. production is the preferred mode, the phases may not be loaded equally: the exported power varies by phase. This happens when excess energy is available at the building and the **Sell first** operation mode is selected on the hybrid inverter. This mode does **not** offer phase power balancing.

5.4 Self-consumption

Use Self-consumption when you want to balance export and import so that the net sum equals zero. The Reduxi Controller monitors the net grid consumption and production, calculates the difference and acts accordingly.

The power limits for export and import from the grid stay constrained by the two parameters in the right-hand cards **Grid Export/Import active power limits**.



Self-consumption mode

Case 1: not enough PV production

- PV production is 0
- or PV production is less than the building consumption
- and Battery storage SOC is above the minimum SOC

Then the battery storage is discharged to reach zero grid active power. The Reduxi Controller discharges the battery storage to cover the building consumption.

Case 2: enough PV production

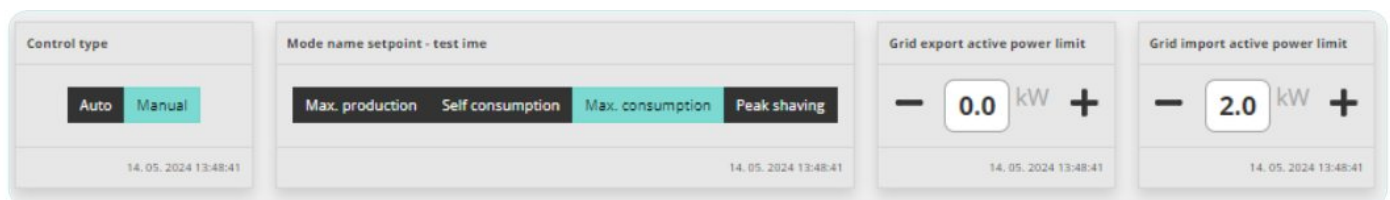
- PV production covers the building production
- and PV production is more than the Grid export active power limit
- and Battery storage SOC is below the maximum SOC

Then the battery storage is charged with the excess power until it reaches the maximum SOC. When the battery storage reaches the maximum SOC, PV production is limited so that it does not exceed the Grid export active power limit. After the end of the PV production day, Case 1 applies again.

5.5 Max. consumption

Use Max. consumption when you want to import as much energy from the grid as possible. This mode is typically used together with an EVSE (electric vehicle supply equipment) and a battery storage, so the user can increase power on demand.

The power limits for export and import from the grid stay constrained by the two parameters in the right-hand cards **Grid Export/Import active power limits**.



Max. consumption mode

Case 1: building consumption is less than the Grid import active power limit

- Building consumption is less than the Grid import active power limit
- or Battery storage SOC is below the maximum SOC
- or EV is connected to the EVSE but not charging

Then the battery storage and the EV start charging to reach the Grid import active power limit, until the maximum battery storage SOC or EV battery SOC is reached.

Case 2: PV production available

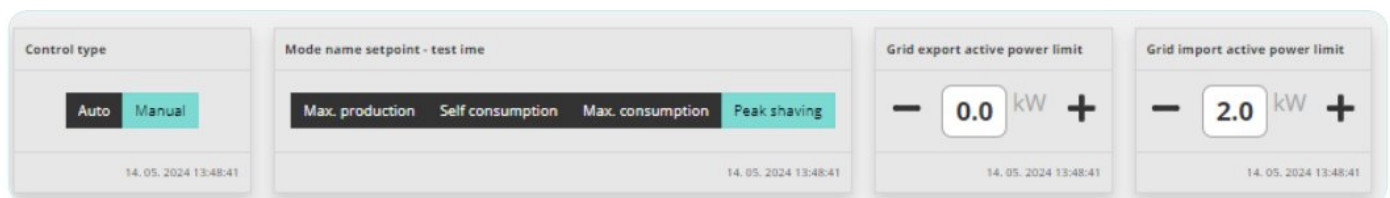
- PV production is more than 0
- or Building consumption is less than the Grid import active power limit
- or Battery storage SOC is below the maximum SOC
- or EV is connected to the EVSE but not charging

Then all energy produced by PV is first used by the EVSE or the battery storage. When both reach the maximum SOC, the energy goes to the grid, but not more than the Grid export active power limit. The battery storage is not discharged until the building consumption is bigger than the PV production.

5.6 Peak shaving

Use Peak shaving when you want to limit the grid import active power once the limit is reached. The Grid import active power limit is set by the two parameters in the right-hand cards **Grid export/import active power limits**.

The power limits for export and import from the grid stay constrained by the two parameters in the right-hand cards **Grid Export/Import active power limits**.



Peak shaving mode

Case 1: building consumption is less than the grid import active power

- PV production is less than or equal to 0
- or Building consumption is more than the Grid import active power limit
- and EV is charging
- and Battery storage is above the minimum SOC

Then the battery storage starts discharging to cover the power for EV charging, so that the Grid import active power limit is not exceeded. If there is no battery storage, the power of the EV charger is reduced so that the Grid import active power limit is not exceeded.

The battery charges when the Grid export active power limit is reached and enough PV production is available.

✓ Summary

Preparation (Points 1–2): Check the inverter series (LV or HV), gather the equipment and wire the RS-485 connection on the controller and the inverter (RJ-45).

Deye hybrid inverter (Point 2): LV models need an RTU connection. Follow the wiring picture for the Modbus RJ-45 connector exactly.

Add to Reduxi (Points 3–4): Log in to the Reduxi web interface, add a Hybrid inverter, set the Modbus RTU parameters and unit ID, test the communication and click Done.

Go live (Point 5): Check the last measurements, then set the control type to Auto (strategy) or Manual (Max. production, Self-consumption, Max. consumption, Peak shaving).

→ Common issues

ISSUE	SOLUTION
Test communication fails	Try different Modbus settings and check the physical RS-485 connection and the RJ-45 wiring (see Point 2).
Modbus TCP does not work on an LV inverter	LV installations only support an RTU connection. Only HV installations can use the Solarman Dongle with Modbus TCP/IP.
Phases are not loaded equally in Max. production	Happens when the Sell first operation mode is selected on the inverter. This mode does not balance the phase power.
Import is shown instead of export	Enable Do you want to invert direction for energy import and export in the advanced settings (see Point 4).
Phase L1, L2 or L3 shows wrong values	Set L1, L2, L3 is connected to main feed in the advanced settings (see Point 4).
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:

 Deye inverter website Manufacturer website with user manuals for Deye hybrid inverters.	 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