REDUXI CONTROLLER · KNOWLEDGE BASE

How to connect Tesla Megapack battery (BESS) with Reduxi Controller

Connect a Tesla Megapack battery storage to the Reduxi Controller via Modbus TCP: enable the protocol on the Megapack, add the device in the Configurator and check the readings.

⏱ approx. 15–20 min

🔧 Tesla Megapack · Reduxi Controller

🌐 Modbus TCP (Ethernet / LAN)



Tesla Megapack – battery storage system (source: Tesla)

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1 Technical documentation

The Tesla Megapack is a containerised battery energy storage system for commercial, industrial and utility sites. The Reduxi Controller connects to it over the local network with **Modbus TCP** and reads the battery values (power, state of charge, capacity, energy counters) as well as the grid and PV values that the Megapack reports.

DEVICE	INTERFACE	PROTOCOL	PORT
Battery storage (BESS)	Ethernet (LAN)	Modbus TCP	502

MODBUS UNIT ID
1

Manufacturer documents:

- **Tesla Megapack** – product page and general information (EN)
- **Megapack Modbus interface register map** – on request from the manufacturer (not public)

2 Required equipment

- [ ] Reduxi Controller, installed and online
- [ ] Tesla Megapack, commissioned, with a network connection (Ethernet) that the Reduxi Controller can reach in the same network
- [ ] Access to the Megapack web interface (from the installer or from Tesla) to enable the Modbus TCP/IP protocol
- [ ] Laptop or tablet with internet access to configure the device in Reduxi

> ⚠ **Protected system**
> The Megapack web interface also contains system-level functions, for example a button to stop the system. Only change the settings described in **Point 4** and leave everything else as it is.

3 System overview & connection

The Megapack and the Reduxi Controller communicate over the local network. Connect both to the same network (switch or router) and give the Megapack a fixed IP address, so that the address entered in Reduxi does not change.

CONNECTION	DETAILS
Megapack ↔ network	Ethernet cable to the local network (LAN)
Reduxi Controller ↔ network	Ethernet or Wi-Fi to the same network
Protocol	`Modbus TCP`, port `502`, unit ID `1`

> ✅ **Fixed IP address**
> Note the IP address of the Megapack. You need it in **Point 6.2**.

4 Configure the Megapack

Before the Reduxi Controller can read the Megapack, the **Modbus TCP/IP** client protocol has to be switched on in the Megapack web interface.

4.1 Enable Modbus TCP/IP

1 **Open the Megapack web interface**

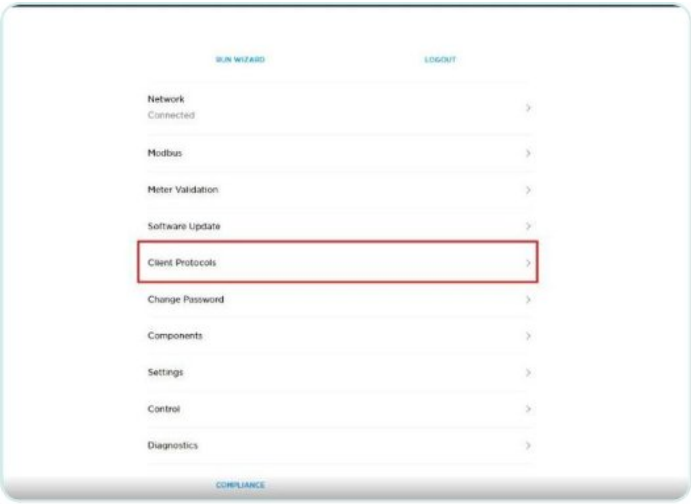
Log in with the access data you received from the installer or from Tesla.

2 **Open Client Protocols**

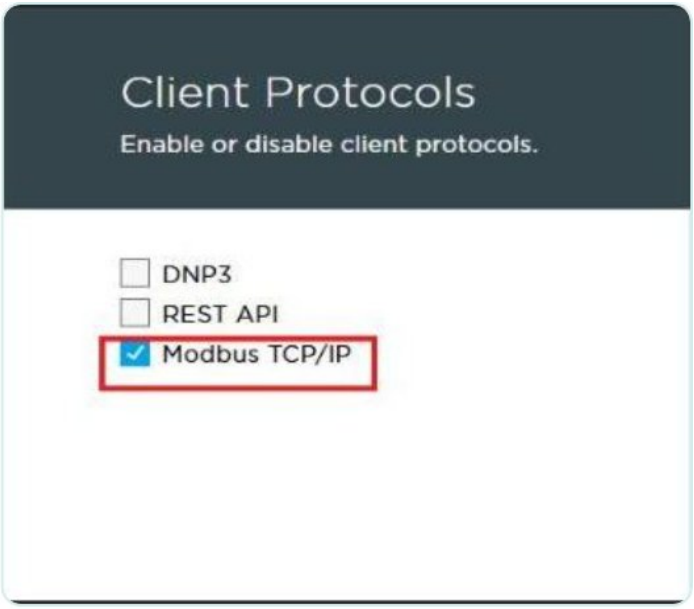
In the settings list, select **Client Protocols** (marked in red in the image below).

3 **Enable Modbus TCP/IP**

Tick **Modbus TCP/IP**. **DNP3** and **REST API** stay switched off for the Reduxi connection.



*Settings list: open **Client Protocols***



*Only **Modbus TCP/IP** is ticked*

Reduxi connection data

Modbus TCP port `502` and Modbus unit ID `1`. You enter these values in **Point 6.2**.

5 Log in to the Reduxi web interface

The device is added in the **Configurator**, the web interface of the Reduxi Controller. You do not add it in the Reduxi app itself or in the Reduxi Cloud. You can open it in two ways:

RECOMMENDED

Reduxi app

Works from anywhere, no network knowledge needed.

Web browser

In the same network as the controller.

5.1 Via the Reduxi app

1 Open the app and log in

Use your Reduxi account.

2 Open Reduxi devices

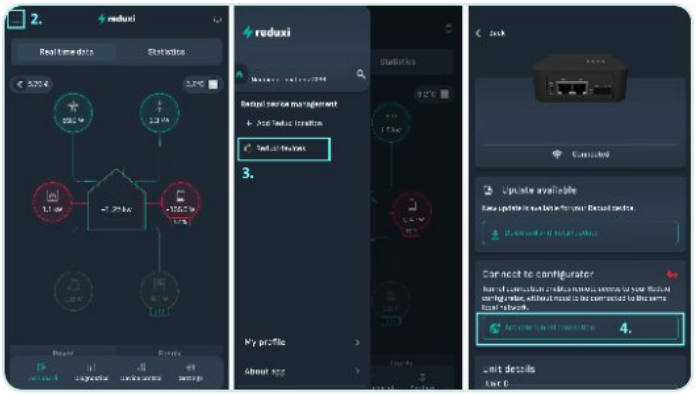
Tap the menu icon at the top left, then **Reduxi devices**, and select the location.

3 Switch on the tunnel connection

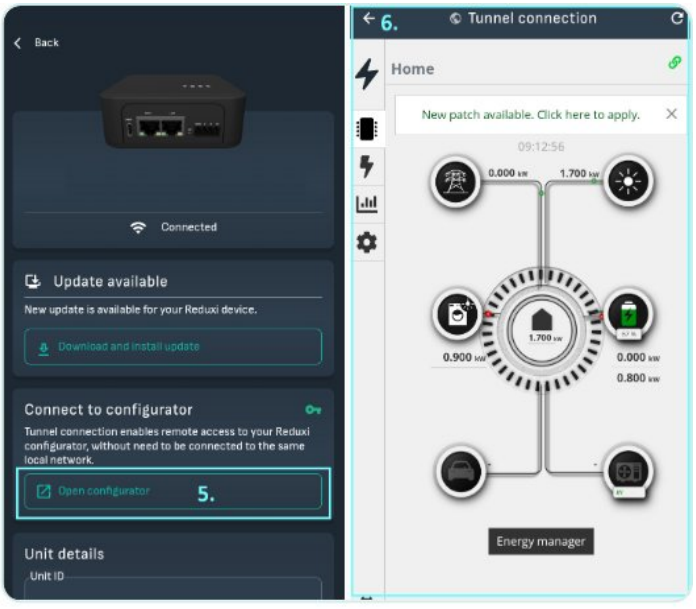
Wait about 30 seconds until the connection is active.

4 Open the Configurator

Tap **Open configurator**. You are logged in automatically.



Menu, Reduxi devices and tunnel connection



Open configurator

On a computer, away from the site

Open the Reduxi Cloud (reduxi.app), select the location, then **Manage location → OEM devices → Activate tunnel connection**, confirm with **OK** and wait about 30 seconds. Then click **Go to controller**. The Configurator opens in a new tab without a password.

5.2 Via a web browser

1 Open the login page

In the same network, enter the IP address of the controller or `http://reduxi.local` in the browser. You find the IP address in the device list of your router or in the app under Reduxi devices.

2 Log in

Username `admin` · Password `admin` (factory default; if it was changed during installation, use that one; this is not your Reduxi account password).



Configurator login screen

> ⚠ **Common stumbling blocks**
> The tunnel needs about 30 seconds. The `admin` login is not your Reduxi account. `reduxi.local` only works in the same network as the controller.

6 Add the device to Reduxi

6.1 Basic settings

1 Click + Add device

In the left menu, the section **Devices** lists all devices (click it if it is collapsed). **+ Add device** sits directly below the list. Do not use **+ Add EEBUS device**.

2 Choose the device type

Device type **Battery**, type **Tesla Megapack**.

3 Enter a name and continue

Enter a name for the device, for example `Tesla Megapack`, and click **Next**.



*Left menu: click **+ Add device***

6.2 Communication settings

PARAMETER	VALUE
Connection	`TCP/IP`
IP	IP address of the Megapack (see Point 3)
Port	`502`
Modbus unit ID	`1`
Extended IP recovery	On (recommended: finds the device again if its IP address changes)

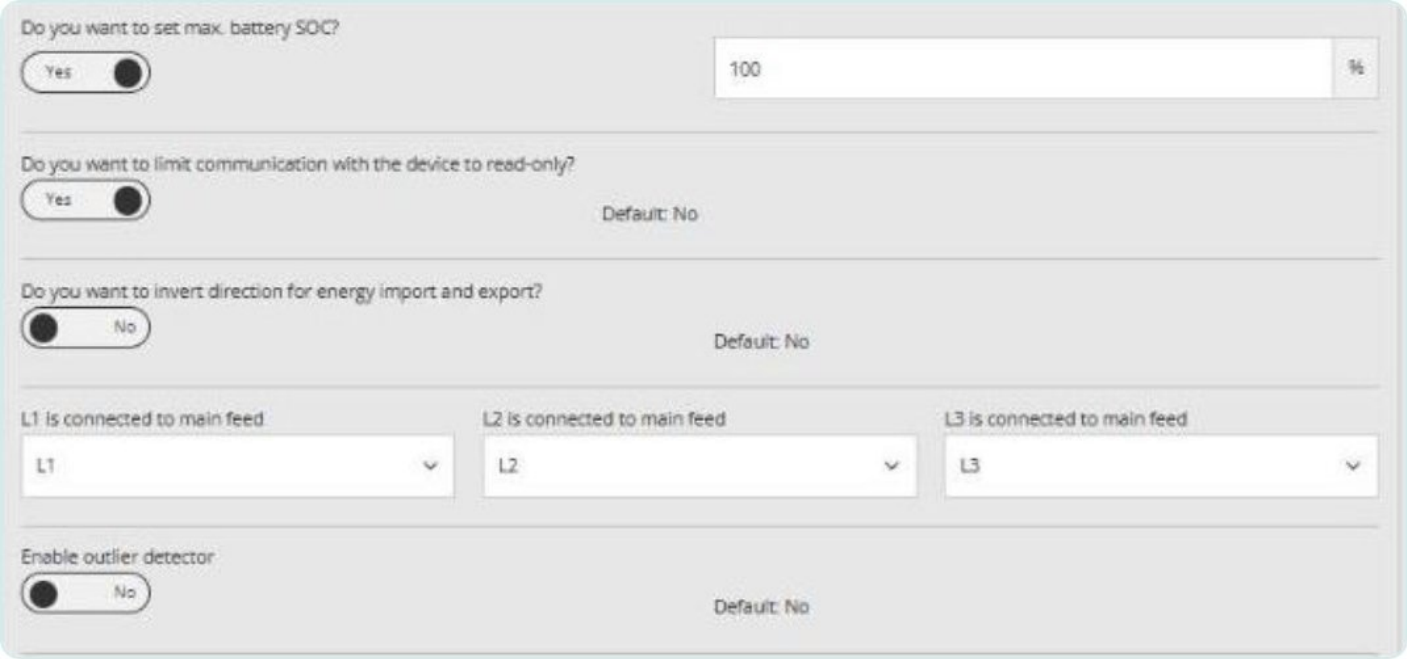


Communication channel (left) and device configuration (right)

6.3 Optional settings

These settings sit in the device details and depend on your installation:

SETTING	MEANING
Limit communication with the device to read-only	On: Reduxi only reads values and does not send any setpoints to the Megapack. Use this when the Megapack is operated by its own controller or by another energy management system.
Battery capacity	Usable capacity of your Megapack installation in kWh.
Device timeout	Time after which the device is reported as not reachable. `60 s` is a good starting value.
Is PV installed / Is meter installed	Switch on only if the Megapack site controller reports PV or grid meter values that Reduxi should use.



Optional settings in the device details

6.4 Test communication

Click **Test communication** at the bottom of the wizard. It reads the device once and saves nothing. If the test is successful, click **Done**. Only **Done** creates the device.

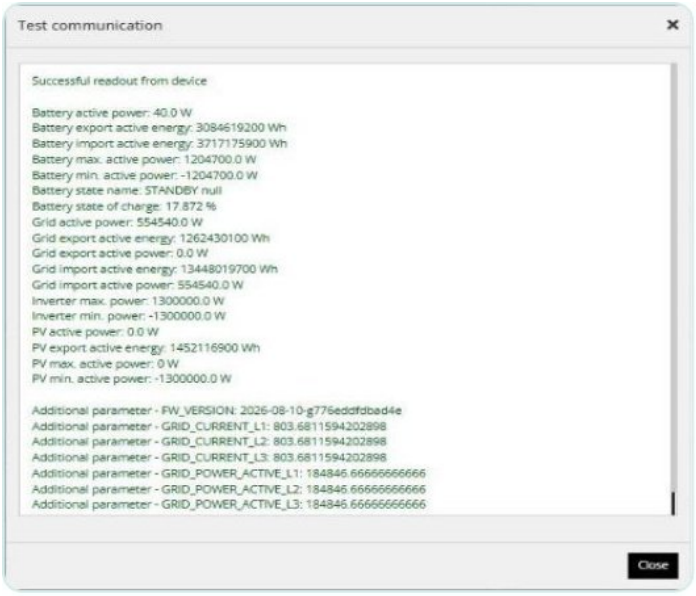


Test communication button

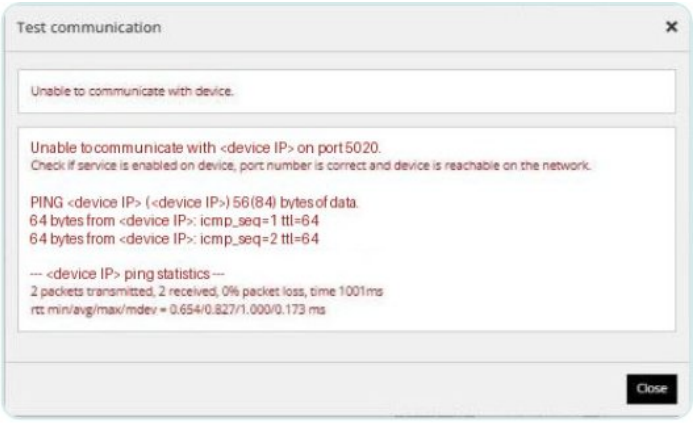


Done button

A successful test shows **Successful readout from device** and the values read. If the port or the address is wrong, the test shows **Unable to communicate with device** and the reason:



Test successful

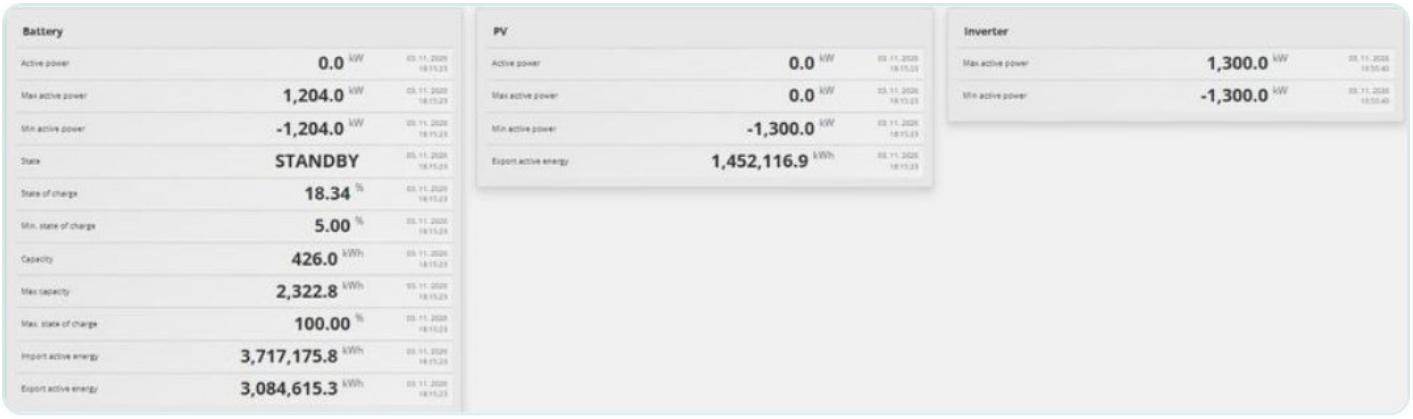


Test failed, for example with a wrong port

7 Check the readings

7.1 Check the readings

Open **Devices** → your Megapack → **Last measurements**. The values update every few seconds.



Last measurements of the Megapack

VALUE	WHAT YOU SEE
Battery – Active power	Current charge or discharge power in kW
Battery – Max / min active power	Charge and discharge power limits reported by the Megapack
Battery – State	Operating state, for example `STANDBY`
Battery – State of charge	Current state of charge in %, with the minimum and maximum limits
Battery – Capacity / max capacity	Available and maximum energy in kWh
Battery – Import / export active energy	Energy counters in kWh
PV, Inverter, Grid	Values the Megapack site controller reports for the connected PV, inverter and grid meter

✅ **Check the direction**
Compare the first readings with the display of the Megapack: when the Megapack charges, the battery must show charging in Reduxi, and the same for discharging. If the direction does not match, contact Reduxi support before you use the device for control.

7.2 Control behaviour

If **read-only** is switched on (see **Point 6.3**), Reduxi uses the Megapack as a measuring device and does not control it. Without read-only, the Megapack can be included as a regulated device in the strategies of the Reduxi Controller (see the related article about strategies).

✓ Summary

Preparation (Points 1–3): Megapack and Reduxi Controller are in the same network, the Megapack has a fixed IP address.

Megapack (Point 4): In the Megapack web interface, enable `Modbus TCP/IP` under Client Protocols.

Add to Reduxi (Points 5–6): Open the Configurator, add a Battery device, enter the IP address, port `502` and unit ID `1`, run Test communication and click Done.

Go live (Point 7): Check the last measurements and the charging direction; use read-only if the Megapack is controlled by another system.

→ Common issues

ISSUE	SOLUTION
Test communication fails, no values from the Megapack	Check that `Modbus TCP/IP` is ticked under Client Protocols on the Megapack, that the IP address is correct and reachable from the controller, and that port `502` and unit ID `1` are entered.
The device shows values, but nothing is controlled	Read-only mode is switched on. Switch it off in the device details if Reduxi should control the Megapack.
Charging and discharging appear the wrong way round	Compare with the Megapack display and contact Reduxi support.
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 there.
reduxi.local does not load	You are not in the same network as the controller. Use the IP address or the tunnel.
Communication test fails, device offline	Check reachability, IP address, port and unit ID, and that the protocol is enabled on the device.

Related articles

Matching guides from the Reduxi knowledge base:

Tesla Megapack
Manufacturer product page

Setup guides and integrations
Compatible devices, step-by-step setup guides and integrations

List of compatible devices
All devices that work with the Reduxi Controller

Strategies for the Reduxi Controller
Energy manager and other strategies explained