



MQTT IO-Station

Technical manual

NOTE:

The Information in this manual is in a “draft” state, meaning, that the contents may be incomplete or not completely up to date with the myGEKKO OS Version you may be using.

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Safety and Warranty

The devices are manufactured in a safe and workmanlike manner in compliance with current regulations and are operationally reliable. They have been tested and have left the factory in perfect condition.

However, there are residual risks. Read and comply with safety instructions to avoid risks.

Ekon GmbH assumes no liability for damages caused by non compliance with the safety instructions.

Safety instructions

Safety instructions about the product described in this document are listed below. Please observe them carefully while using the product.

Electric Voltage

Danger to life and fire hazard from electrical voltage

Inside the device are unprotected live component parts. Observe the VDE regulations.

Disconnect all cables to be installed and take safety precautions against unintentional switching on. Do not operate the device if damaged or not functioning properly. Decommission the device or system and secure it against accidental operation, if any operation without risk may supposedly not be guaranteed.

Device damage from external influences!

Moisture and dirt on the equipment can lead to its destruction.

Protect devices from moisture, dirt and damage during transport, storage and operation.

Warranty

The device is intended solely for proper use. Any inappropriate change or non compliance with the operating instructions invalidates any warranty or guarantee. After unpacking, check the device immediately for any mechanical damage. In case of damage caused during transportation please immediately inform the supplier. The device must only be operated as a fixed installation, i.e. only when installed and after all of the installation and commissioning work has been completed, and exclusively in the environment it is intended for. Ekon GmbH shall not be liable for any modifications to standards and norms after publication of the operating instructions.



MQTT IO-Station document

Purpose

The MQTT IO-Station enables the communication of MQTT devices with the myGEKKO controller. MQTT devices are communicating on the same protocol, no matter the method or transmitting the data (LoRa, Ethernet, ...). In addition, MQTT-based devices are known for their low-power consumption and their long-range communication, making this technology suitable to be used in buildings and remote areas, that may or may not have already established networks in place.

This manual introduces the MQTT IO-Station, available on myGEKKO controllers, and explains how to configure it to connect to a MQTT Broker and integrate MQTT-based devices.



Basic concepts

This section briefly introduces the basic concepts needed to understand the content of this manual and how to use it in the myGEKKO controller.

Which wireless technologies are enabled by the MQTT IO-Station?

The myGEKKO MQTT IO-Station enables the connection between the myGEKKO controller and a MQTT Broker, thus enabling a direct connection between the myGEKKO controller and MQTT-devices. The devices provide the data to the myGEKKO controller, which can be linked to the myGEKKO system elements, such as lights, temperature sensors, etc.

What is MQTT?

MQTT is a transport Protocol, that uses different technologies like LoRa or also Ethernet to transmit it's data to a broker. This broker can then be subscribed to, to receive the data as soon as an update is posted by one of the connected devices.

The MQTT IO Station of the myGEKKO controller enables the integration of MQTT capable Brokers, in combination with a variety of end devices, into the myGEKKO OS.

What is an end device?

An "end device" is like a special messenger that sends and receives information. It's the device you use to collect data or control things, like a sensor on a weather station or a smart meter in your home.

Imagine you have a weather sensor in your backyard. This sensor is the "end device." It measures things like temperature and humidity and then uses a connection to send that information to a central station, like a weather monitoring system. The sensor doesn't do any fancy processing or routing of data; it just sends its measurements to the central station.

What is a Broker?



In a MQTT network, a "Broker" is like a communication hub that helps messages from devices like sensors and meters get to the internet. It is like a bridge between the sensors and the cloud. Since the devices can't connect directly to the internet because they have a limited range, a Broker is needed to send their data to the internet.

Why MQTT?

MQTT-based devices can be a great choice for smart home projects for several reasons. MQTT technology provides long-range communication capabilities through for example LoRa, allowing your smart home devices to communicate over extended distances. This is beneficial for larger homes or installations that might face challenges with traditional short-range wireless technologies. Or you could use LAN Networks that are already established to communicate between the devices and the broker to keep renovating costs as low as possible. Also, MQTT devices are designed for low power consumption, making them ideal for battery-operated devices.

MQTT technology is often considered cost-effective for connecting a large number of devices. This is advantageous for smart home projects that involve multiple sensors and actuators distributed throughout the home.

Finally, MQTT networks can be easily scaled to accommodate additional devices. As your smart home project grows, you can add more sensors without significant infrastructure changes.



Overview

This manual could be summarized in the following steps:

1. Configuration of the MQTT IO-Station
2. Management of the MQTT devices
3. Use of the MQTT devices within the myGEKKO system elements

Some considerations must be considered before continue reading the manual:

- The maximum number of devices which can be added into a MQTT IO Station is 255 devices. That means that if more devices are needed, a second MQTT IO Station has to be enabled and configured.
- The myGEKKO controller limits the use of one MQTT Broker for each MQTT IO-Station. This means that we have a relation 1:1 → only ONE MQTT IO-Station can be connected to ONE Broker.
- **Therefore, if more than 255 devices are needed, at least two MQTT Brokers must be configured and installed.**

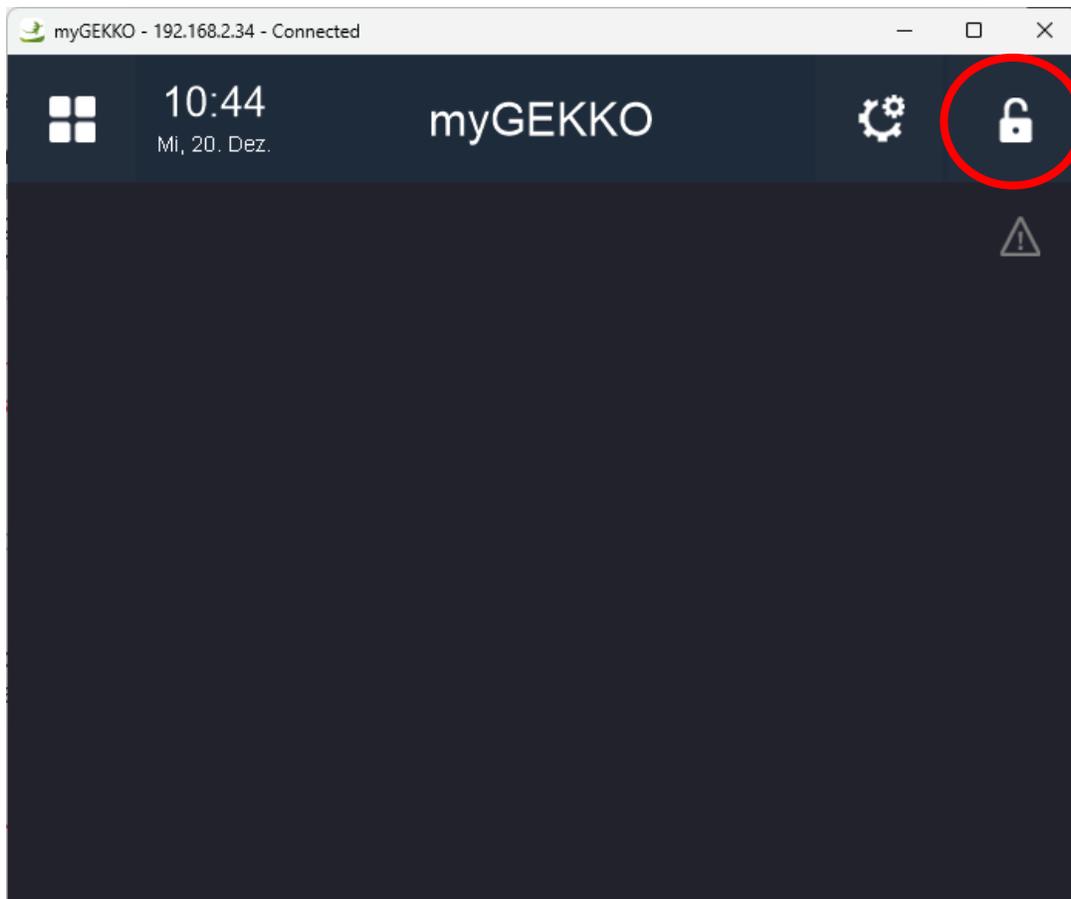
Configuration of the MQTT IO-Station

This section shows how to enable and configure the myGEKKO MQTT IO-Station based on an already-done MQTT Broker installation.

Enabling the MQTT IO-Station

To enable a MQTT IO-Station, we need to go to the IO-Station menu, pick up one of the available IO-Stations, and indicate that it is a MQTT IO-Station. **NOTE: configurator permissions are needed to carry out this procedure.** Please log in as configurator by clicking on the Locker icon located at the top right corner of the screen:





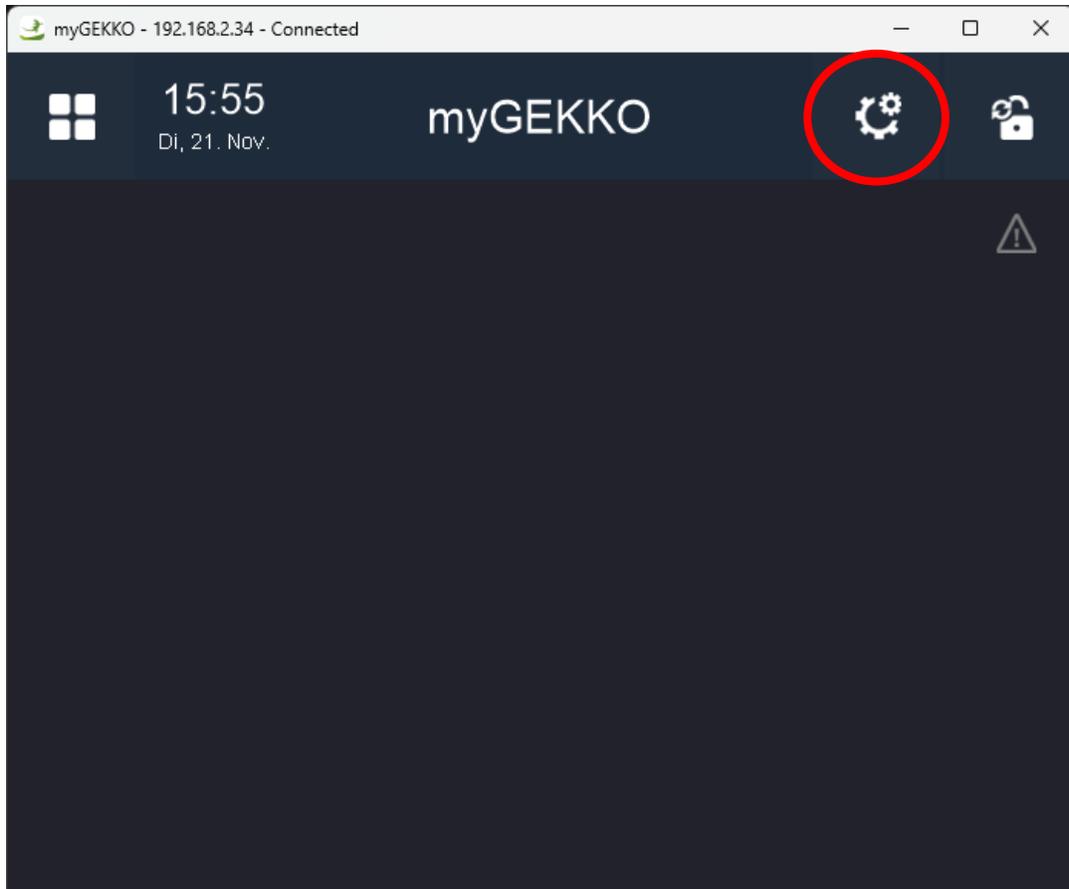
And introduce the configurator password.





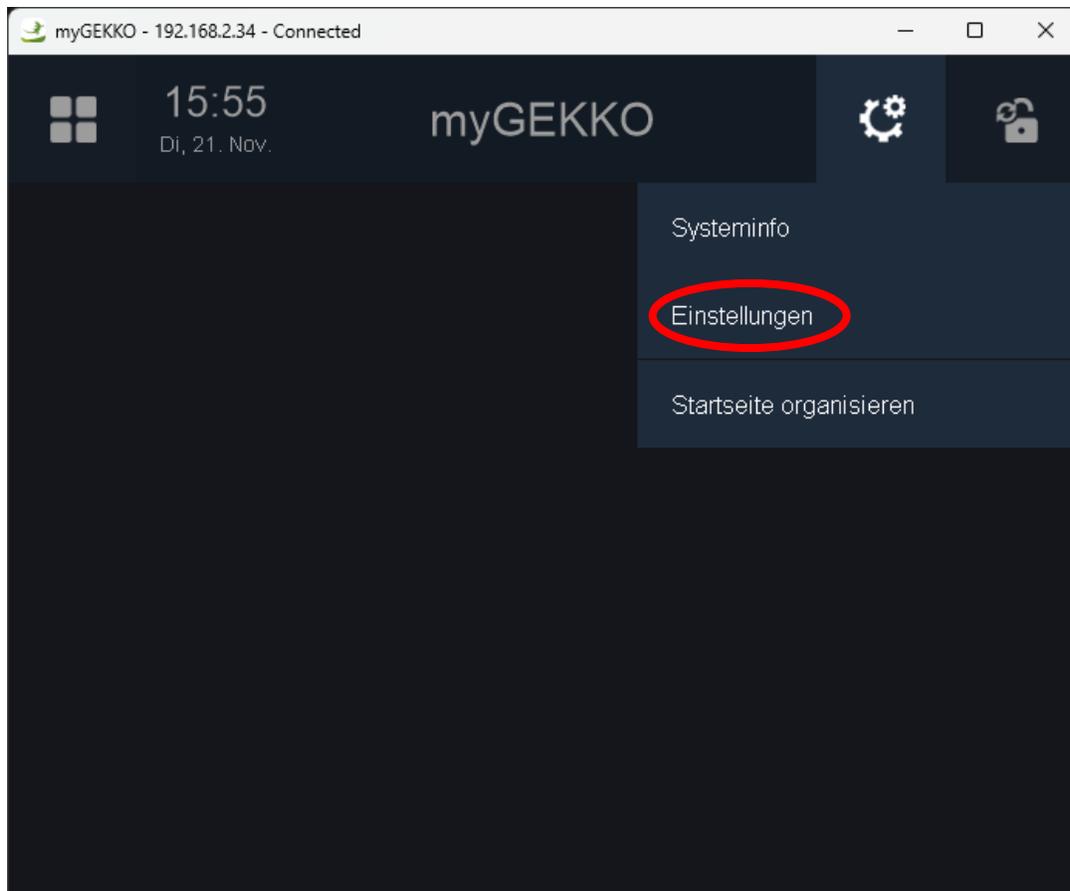
Once the login was successfully done, starting from the main screen, please click on the Configuration icon located at the right top corner of the screen (gear icon):





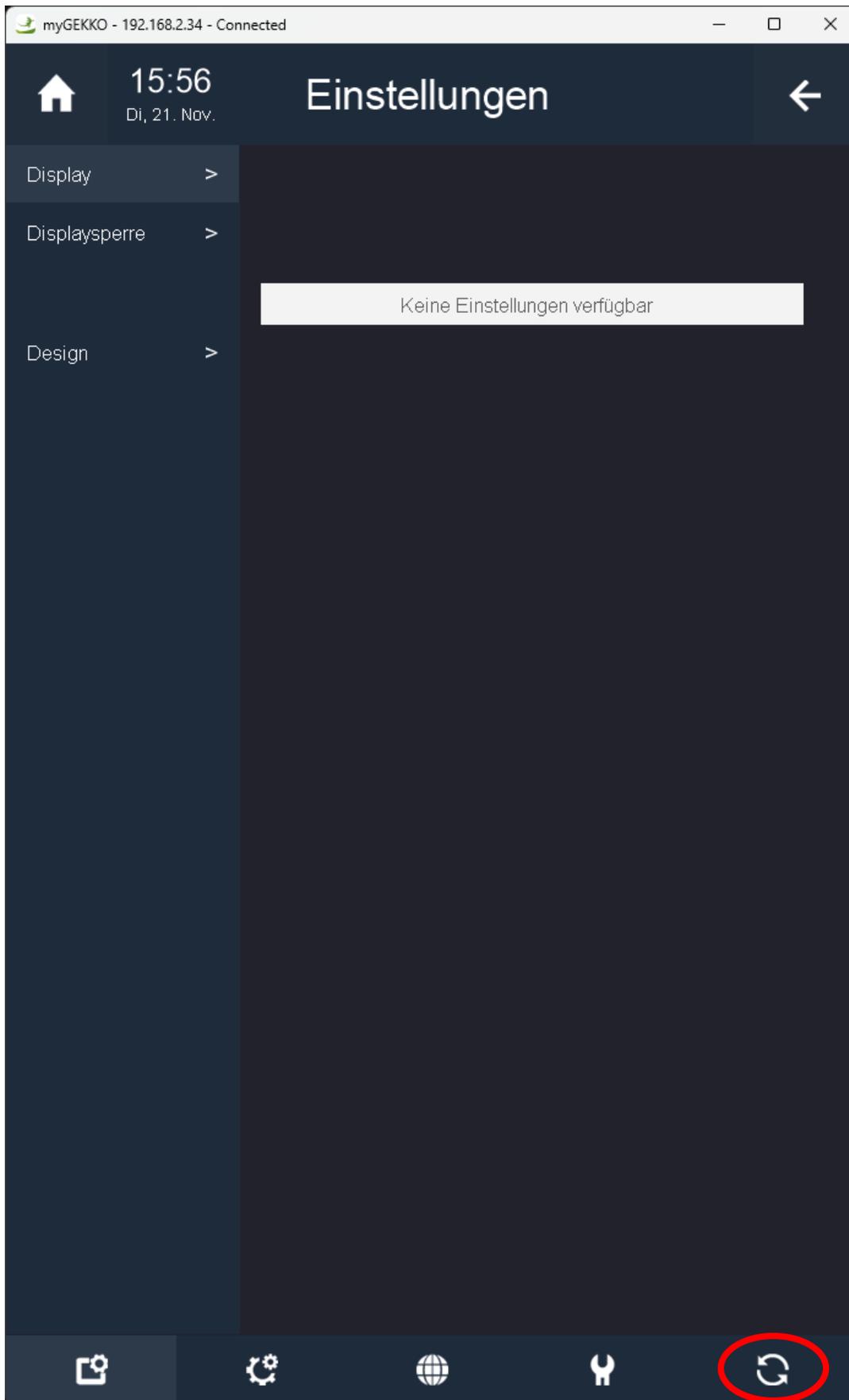
A small popup will appear, where we need to click on "Settings" to open the settings menu.





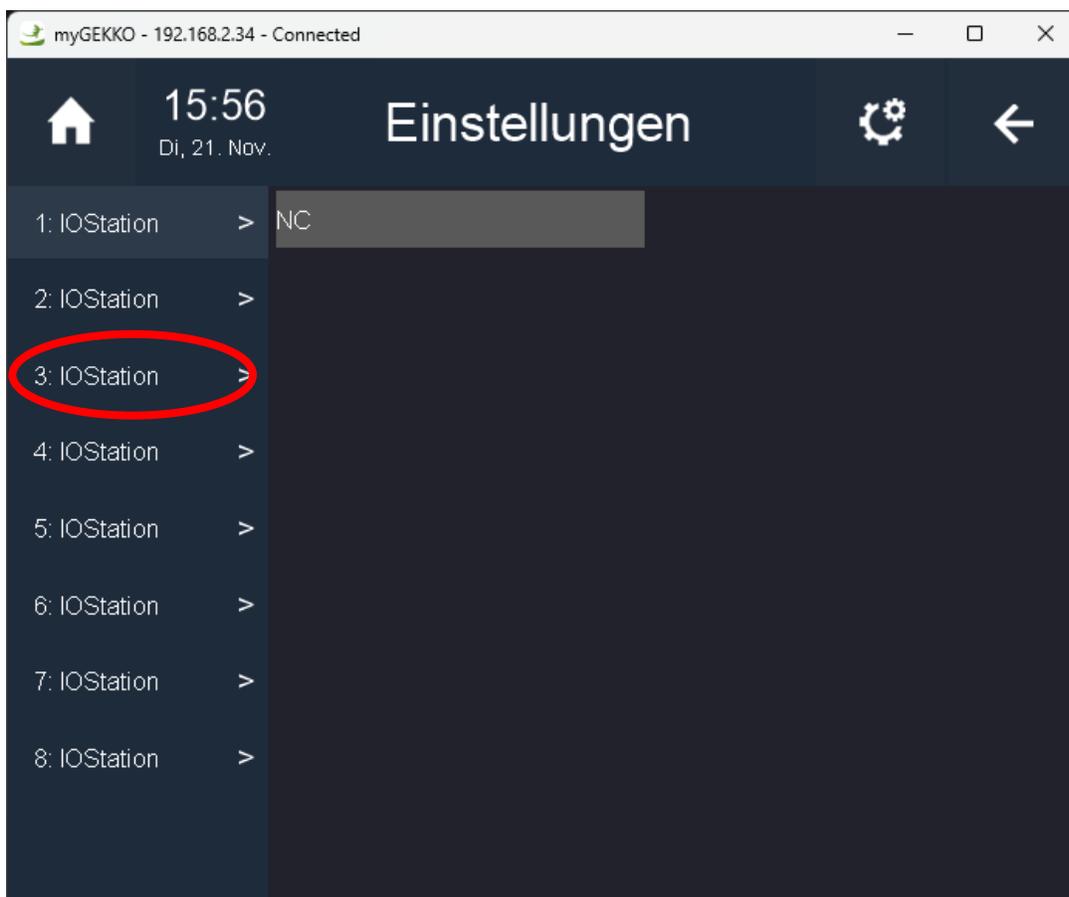
Then, the Settings menu will be shown. The IO-Stations section is accessible by clicking on the rightmost icon (circular icon with two arrows) located at the bottom right corner of the screen, in the bottom menu. Please click on it:





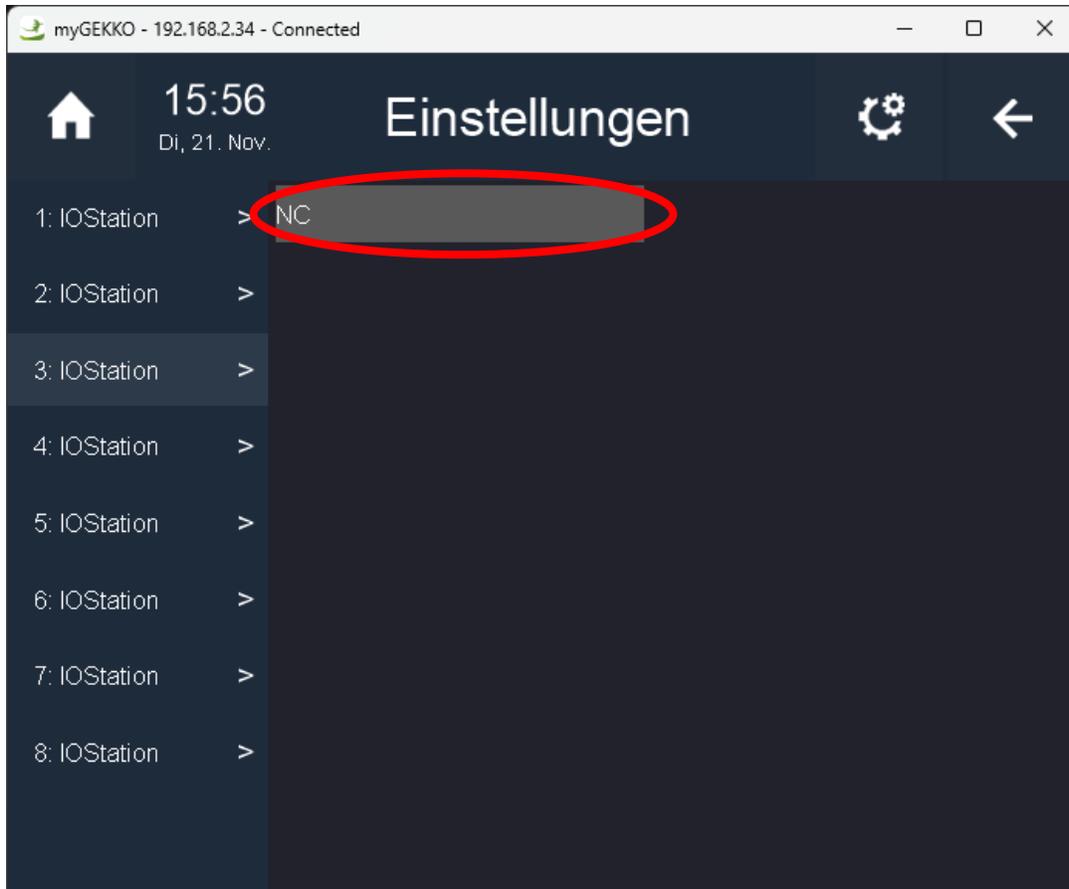
The IO-Station screen is then shown. We can check all the IO-Stations in order to know which IO-Station is free to use. In case that there is no free IO-Stations, we would need to select one and change its configuration. **WARNING: do not do that before asking to the right person (myGEKKO support, electrician, technician, etc) with knowledge about the myGEKKO controller.**

Let's assume that the IO-Stations 1 and 2 are already being used. Then, we would need to use the IO-Station 3 (if it is still free). Then, we click on on the "3: IO-Station" button located on the left vertical menu:



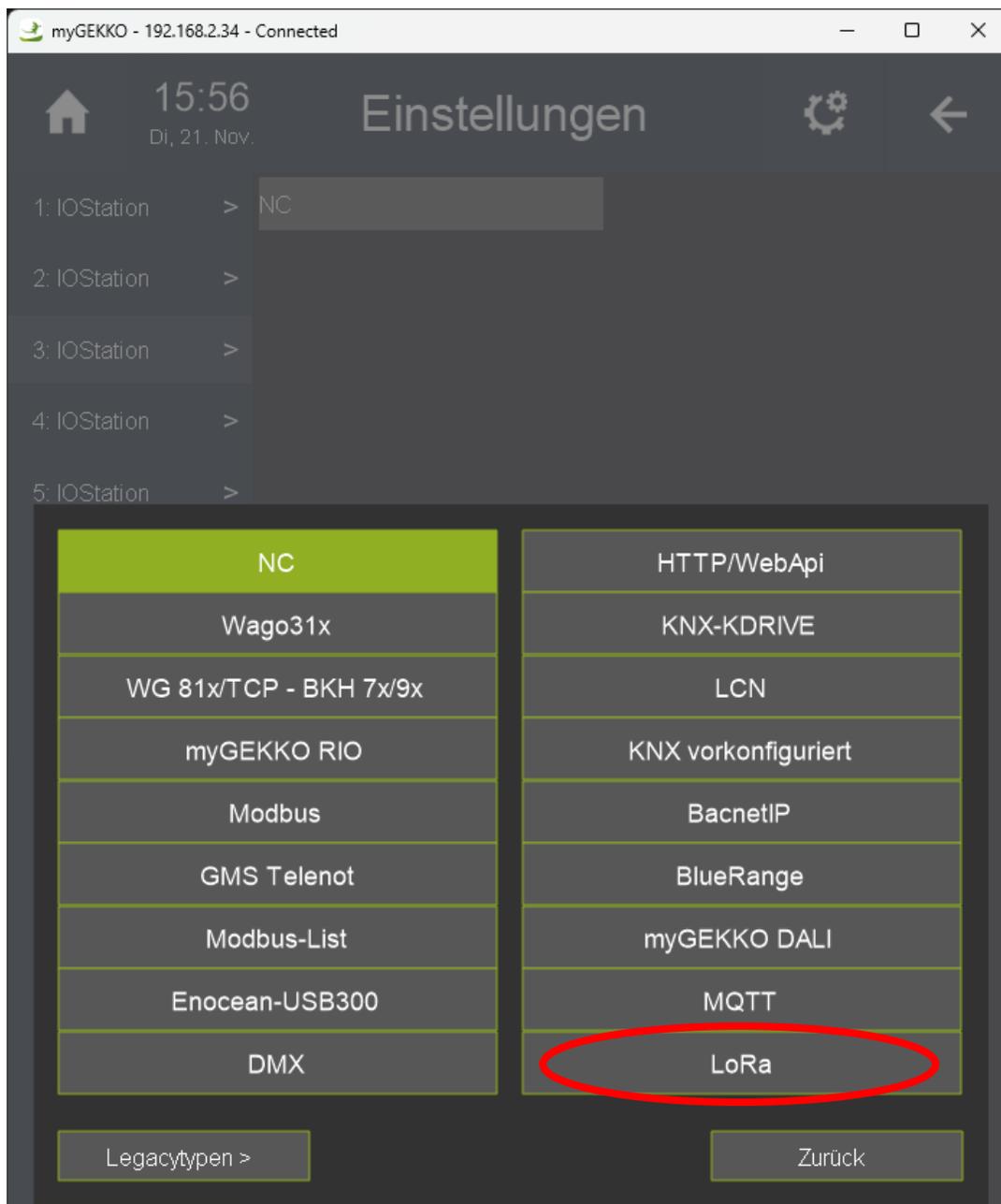
Once selected, if the IO-Station was not used before, a button with the text "NC" (Not Connected) will be shown, meaning that the IO-Station is not in use. Please click on that button to open the IO-Station type selector:





A popup window will appear showing all the options that the myGEKKO controller offers you to enable an IO-Station. Select the option "MQTT", located at the bottom right corner of the popup.



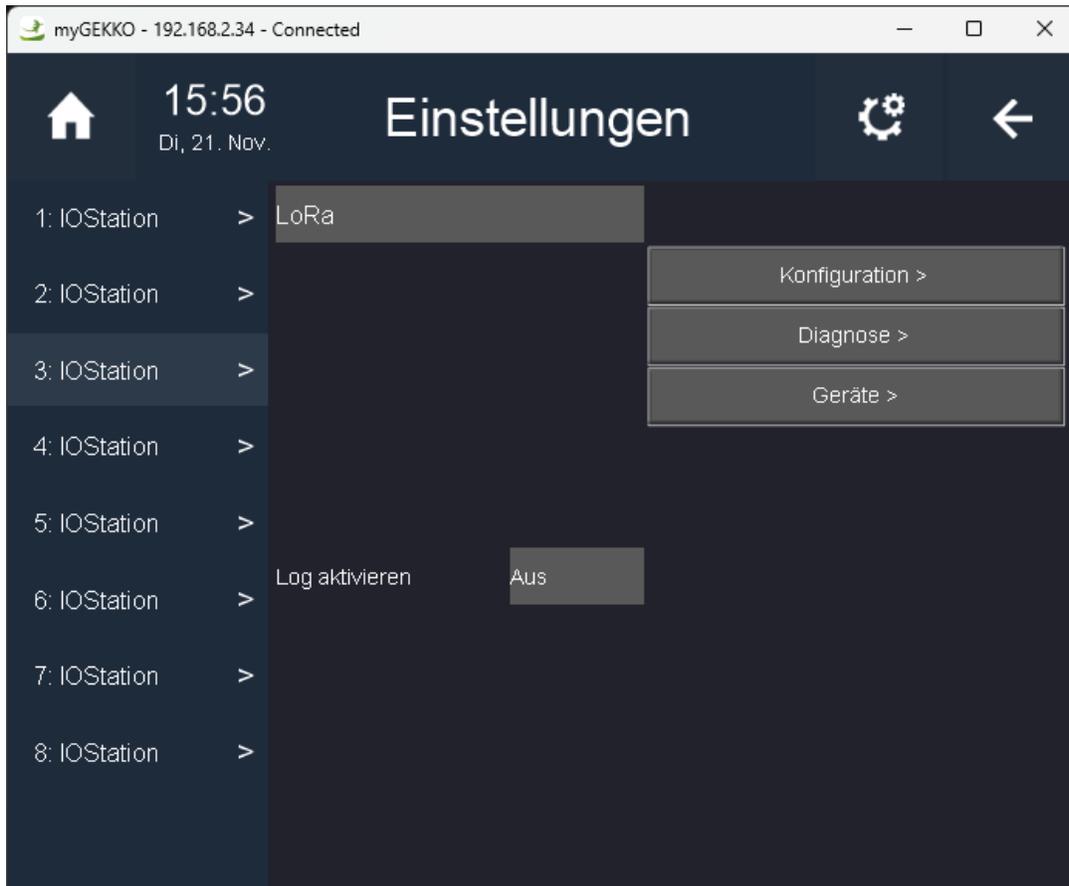


After selecting “MQTT”, the MQTT menu is shown. The menu has 3 buttons:

- **Configuration:** which opens the configuration screen that allows you to insert the MQTT Broker information.
- **Diagnose:** which shows error and status messages of the internal behavior of the IO-Station for support purposes (**still not available**).
- **Devices:** which opens the screen to manage the MQTT-based devices.



In addition, an extra button to enable or disable the “Activity log” of the IO-Station is available.



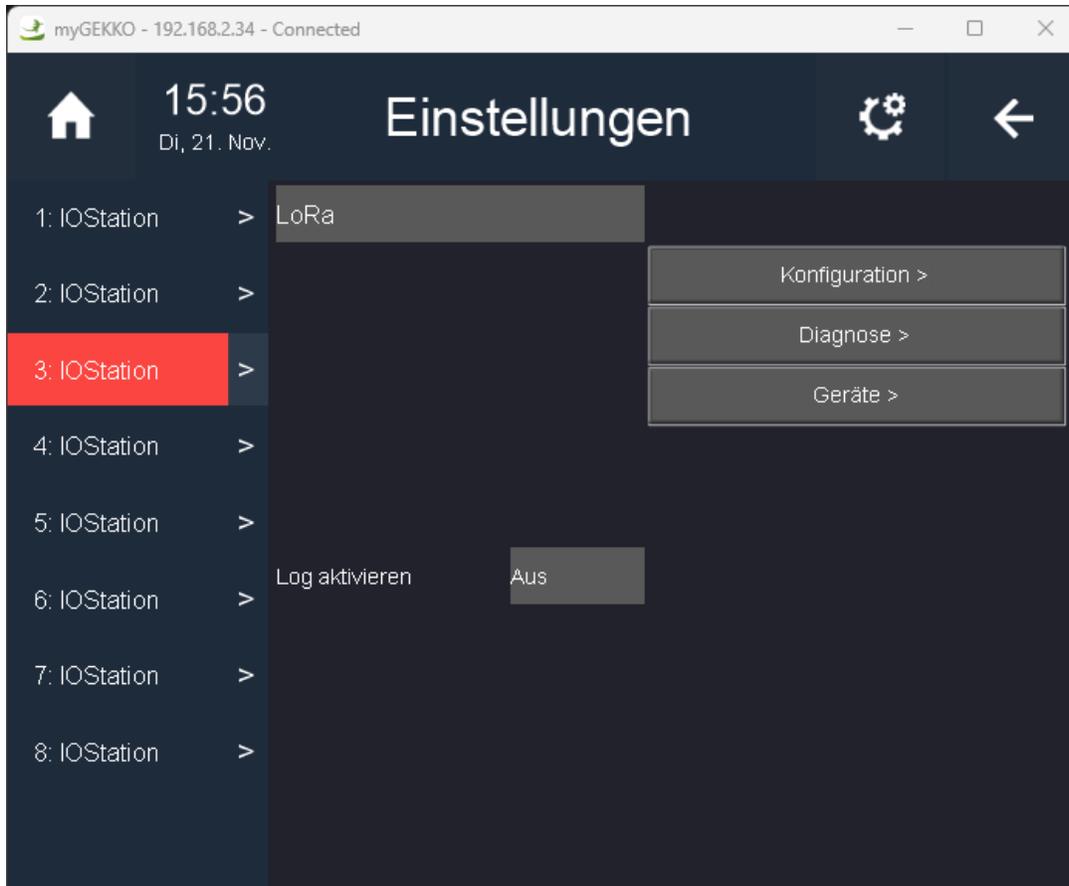
With this, the MQTT IO-Station is enabled and ready to be configured.

Configuring the MQTT IO-Station

To configure the MQTT IO-Station means to introduce the MQTT Broker information in order to allow the myGEKKO controller to receive the MQTT packages coming from the sensors and containing the sensors' information.

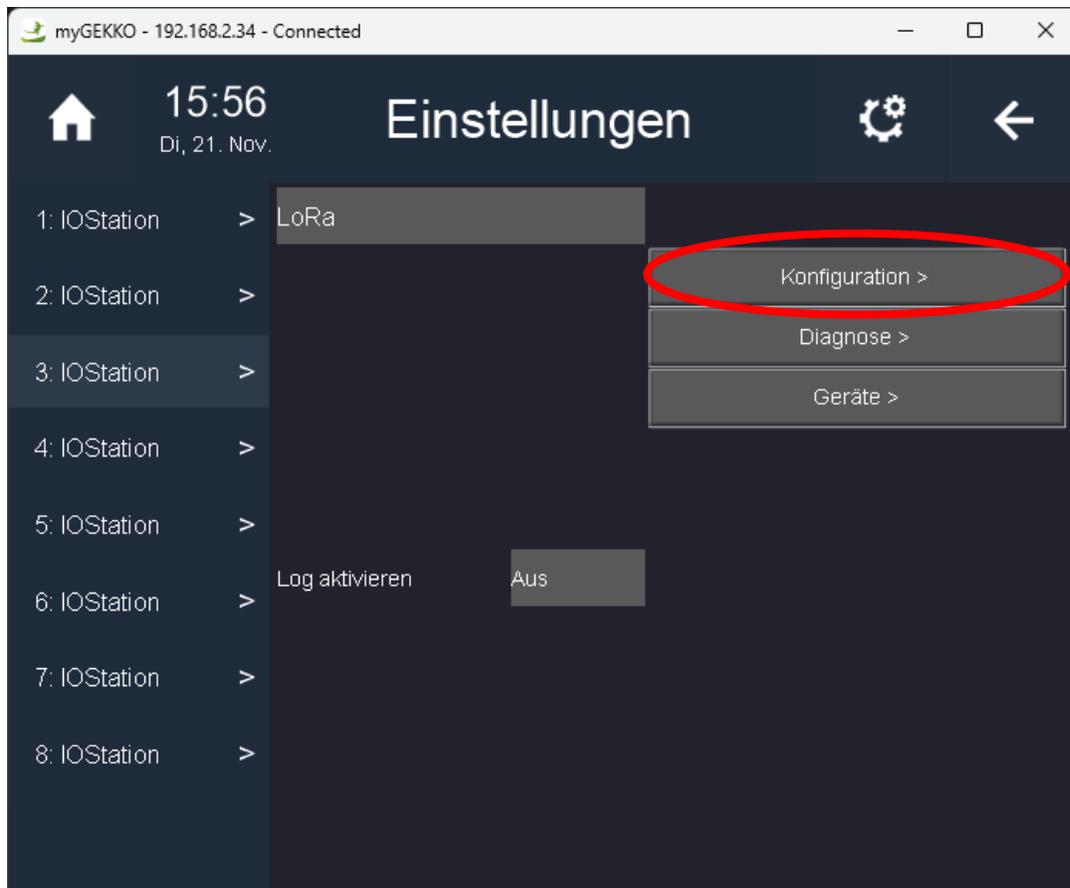
Probably, after enabling the MQTT IO-Station, an alarm is raised in the system indicating that the IO-Station has no connection. That means that, right after enabling it, the IO-Station tried to create the connection to the Broker. However, since we did not add any information about the Broker, it was an unsuccessful attempt.





There, please click on the "Configuration" button to open the configuration screen:

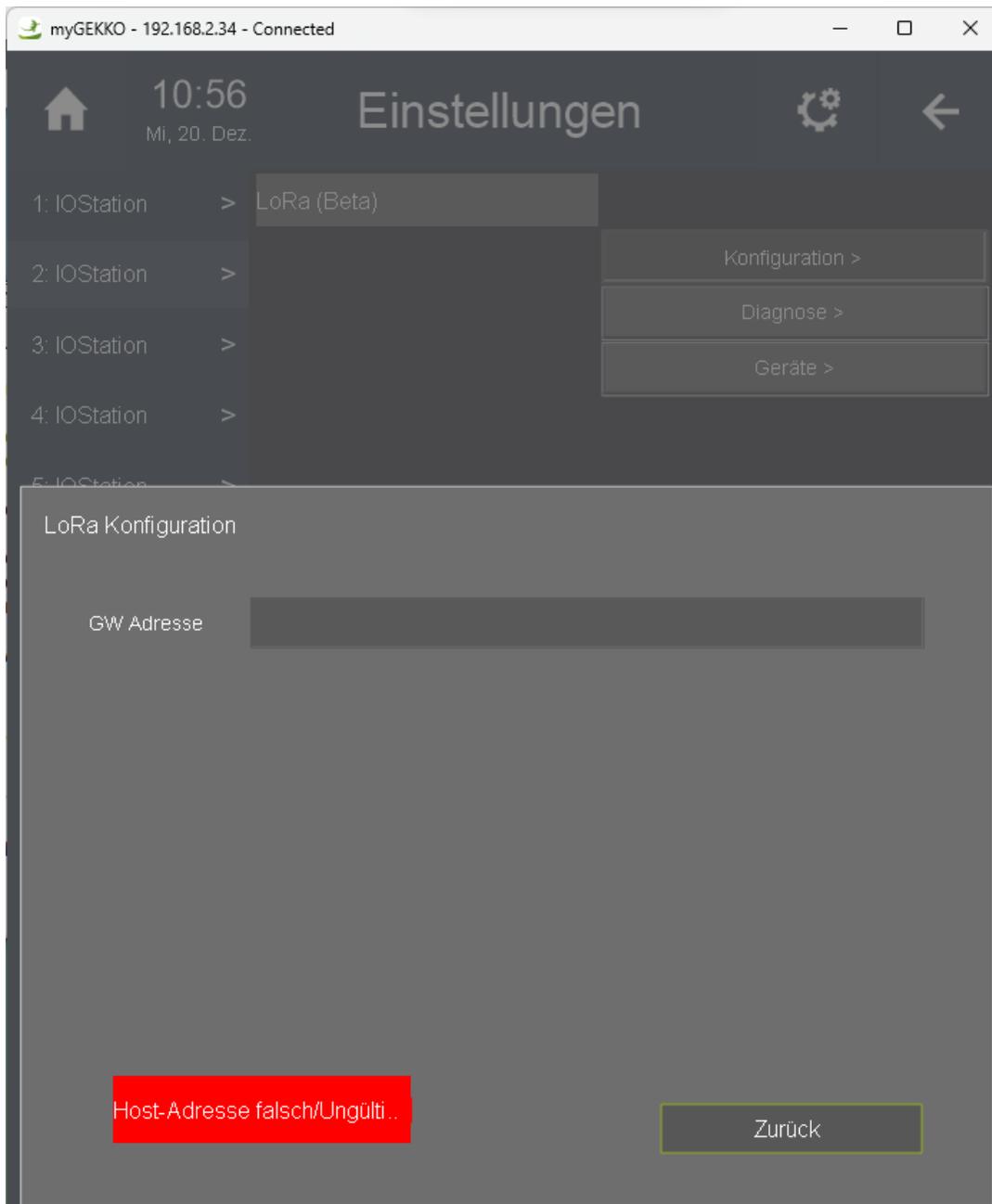




The following settings are available in the configuration menu:

- **GW address:** The IPv4 address of the MQTT Broker. It must be reachable from the myGEKKO controller.

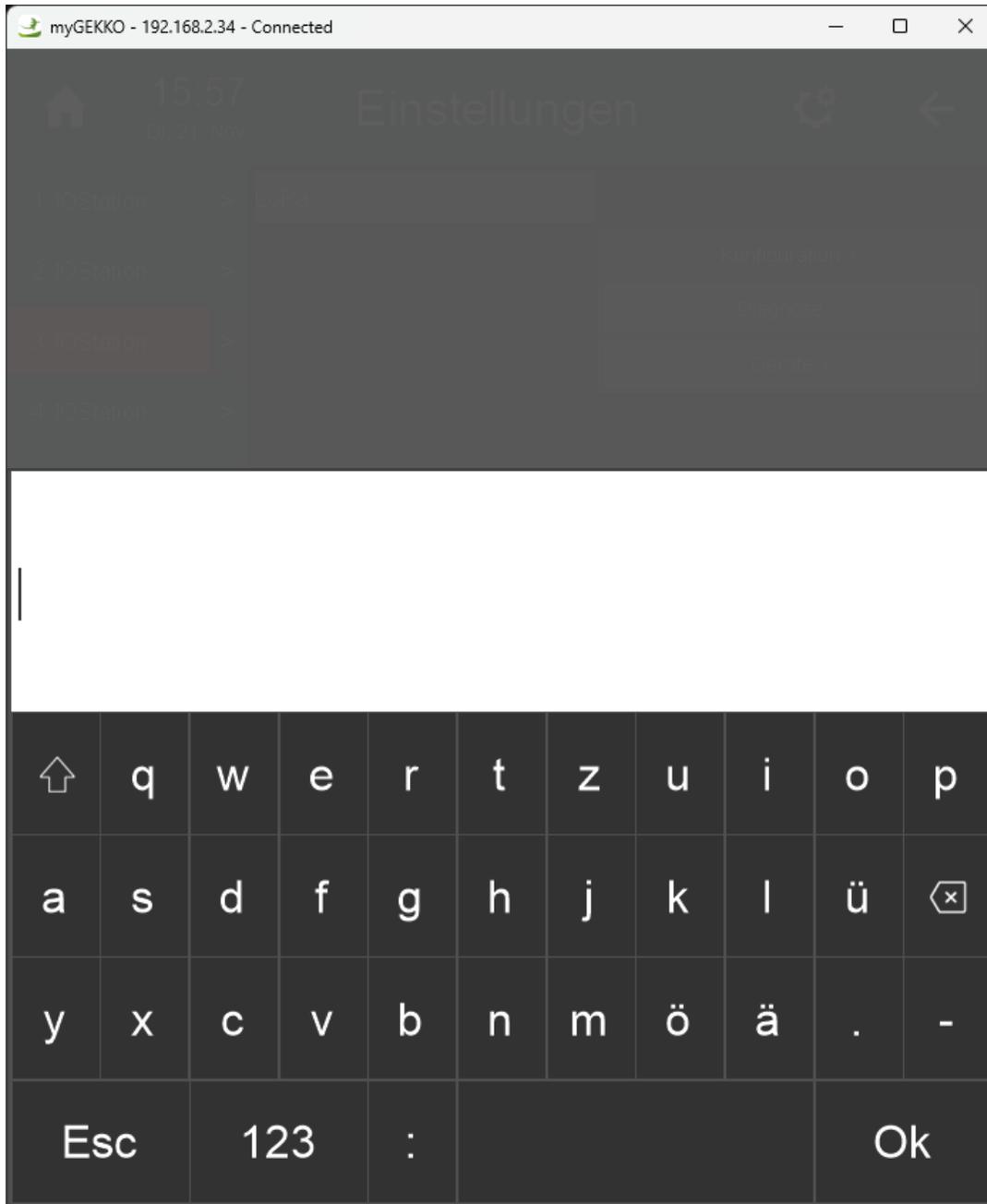




To start the configuration, we add first the MQTT Broker IPv4 address assigned during the MQTT Broker configuration process. **NOTE:** the password should have been provided to you after the installation of the MQTT Broker. If not, please contact the installer.

Please click on the "GW address" textbox, and a popup window with a keyboard will be shown:





Let's assume that our IPv4 address is 172.27.82.110. Please write carefully the IP address, being sure that there are no empty spaces at the end of the text.

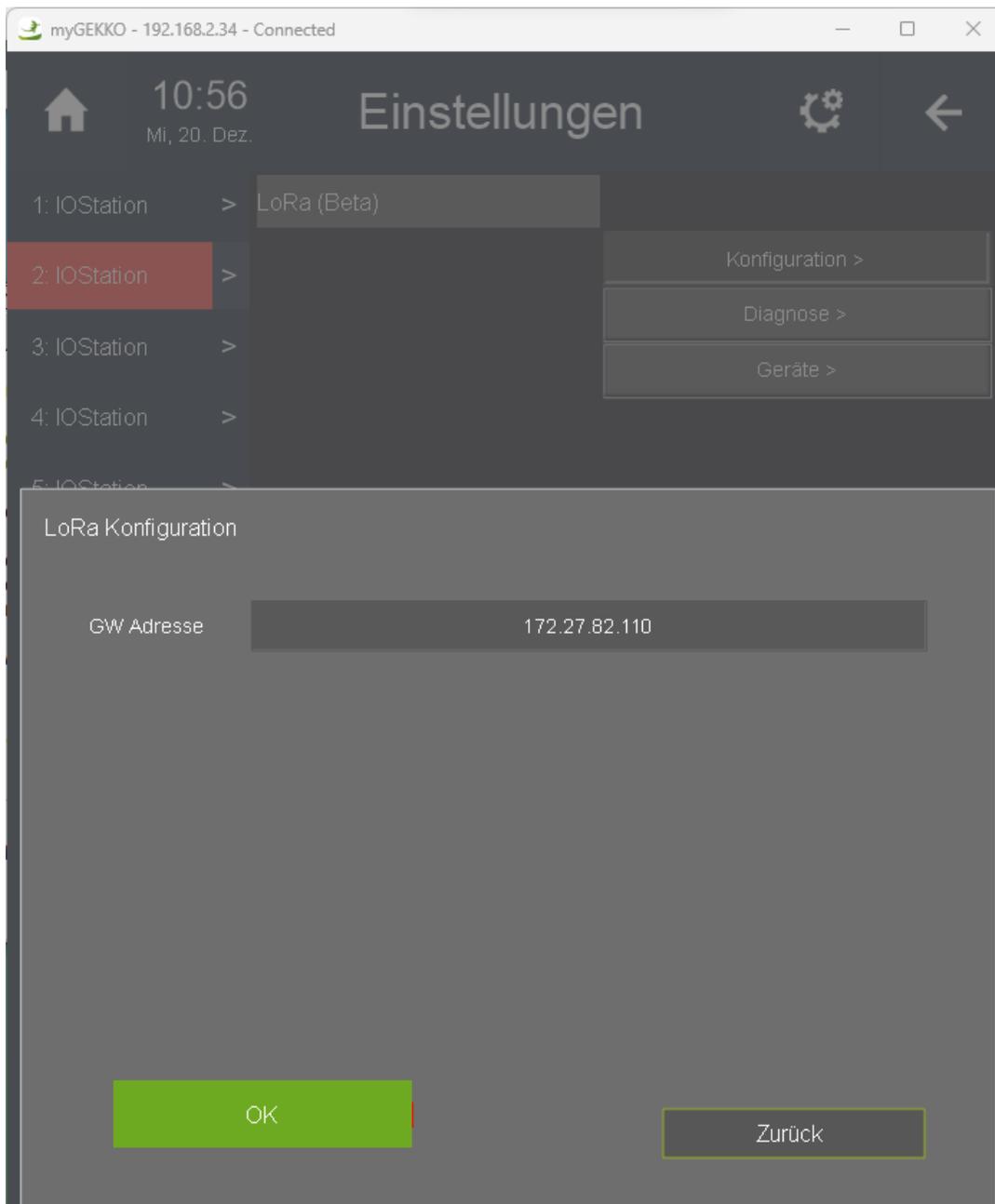




Once finished, please click on the "Ok" button to confirm it. You will be returned to the configuration menu. **NOTE:** if there is any mistake in the GW address, the IO-Station status will change to "Host address incorrect/Invalid certificate".

With this, the MQTT IO-Station is configured and ready to set the connection! It takes a few seconds until the connection process finishes... During that time, the status of the IO Station will be "No connection":

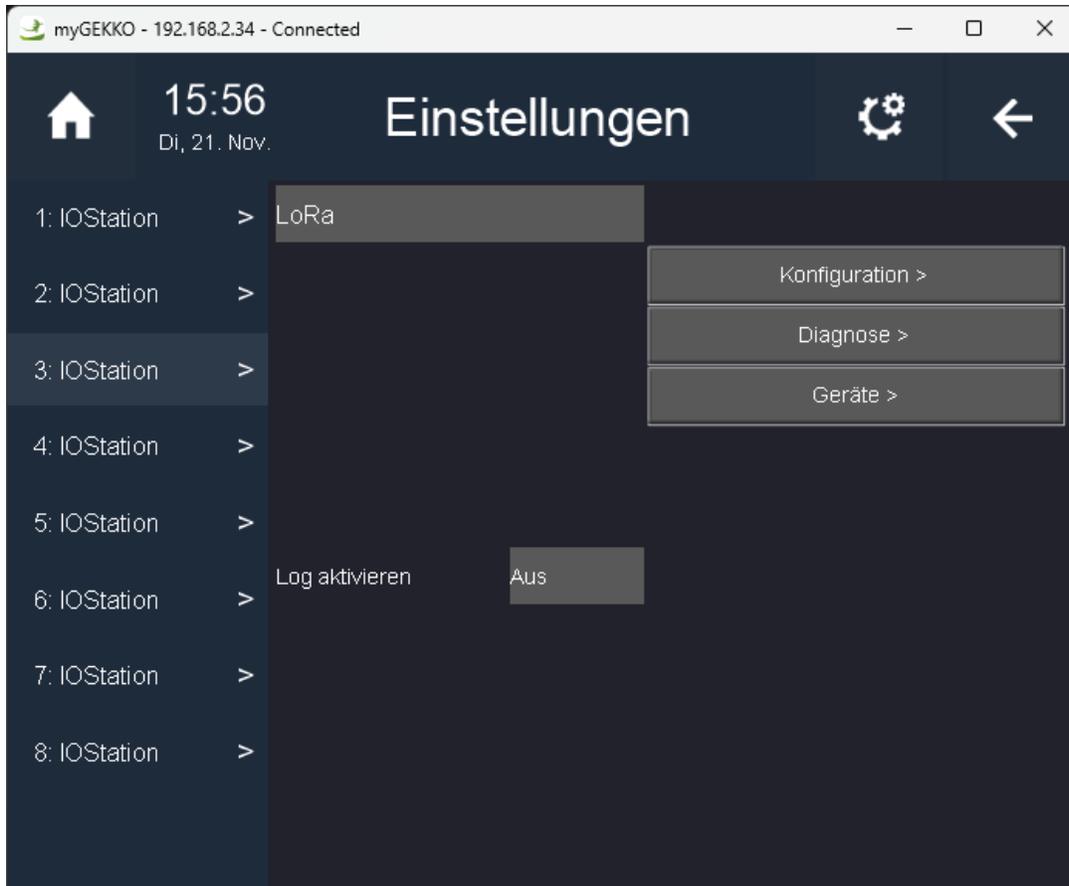




When the connection is successfully done, it will turn green with the message "OK" indicating that the connection was established.

If we click now on the "Back" button, we will go to the MQTT IO Station configuration screen, and we will see that the alarm is gone, and the IO Station is not red anymore.





Modifying parameters in an already configured MQTT IO-Station

If for any reason we need to change the configuration of the MQTT IO-Station, we just need to follow the same steps indicated in the previous section *"Configuring the MQTT IO-Station"*. The IO-Station will restart if it detects that something has changed.

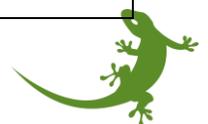
If everything goes well, then it will connect to the Broker. If not, we just need to read the connection status message to understand what is going on.

Connection status messages

The status field in the MQTT IO Station configuration menu informs about the connection status of the myGEKKO device with the MQTT Broker. The following table summarize the set of status in which the connection can be:



Status display	Status description	Possible solutions
Ok	The IO Station is connected and ready to receive messages	-
Not connected	The controller is not connected to the Broker	Enter the connection parameters and set the integration type.
No response	The broker does not provide a response to the connection request	Check the used broker for errors.
User/password incorrect	The entered password and/or username are incorrect	Checking the input fields and the broker authentication settings.
Host address incorrect/invalid certificate	The specified address cannot be reached	Check address for correctness. Check if the selected broker is active. Check the port used (by default: 1883) Check the certificate was successfully installed.
Invalid protocol version	The version of the communication protocol is incorrect	Contact the support department if this occurs.
Identifier rejected	The unique identifier of the connection was rejected	Contact the support department if this occurs.
Server not available	The server is reachable, but it is not operating normally	Contact the support department if this occurs.
User/password format incorrect	The username or password contains invalid characters.	Check the username and password that was written. Change the username and password in the server. Contact the support department if this still occurs.
Incorrect topic format		Contact the support department if this occurs.
Incorrect host format		Check the address for correctness. Contact the support department if this still occurs.
Incorrect integration		Contact the support



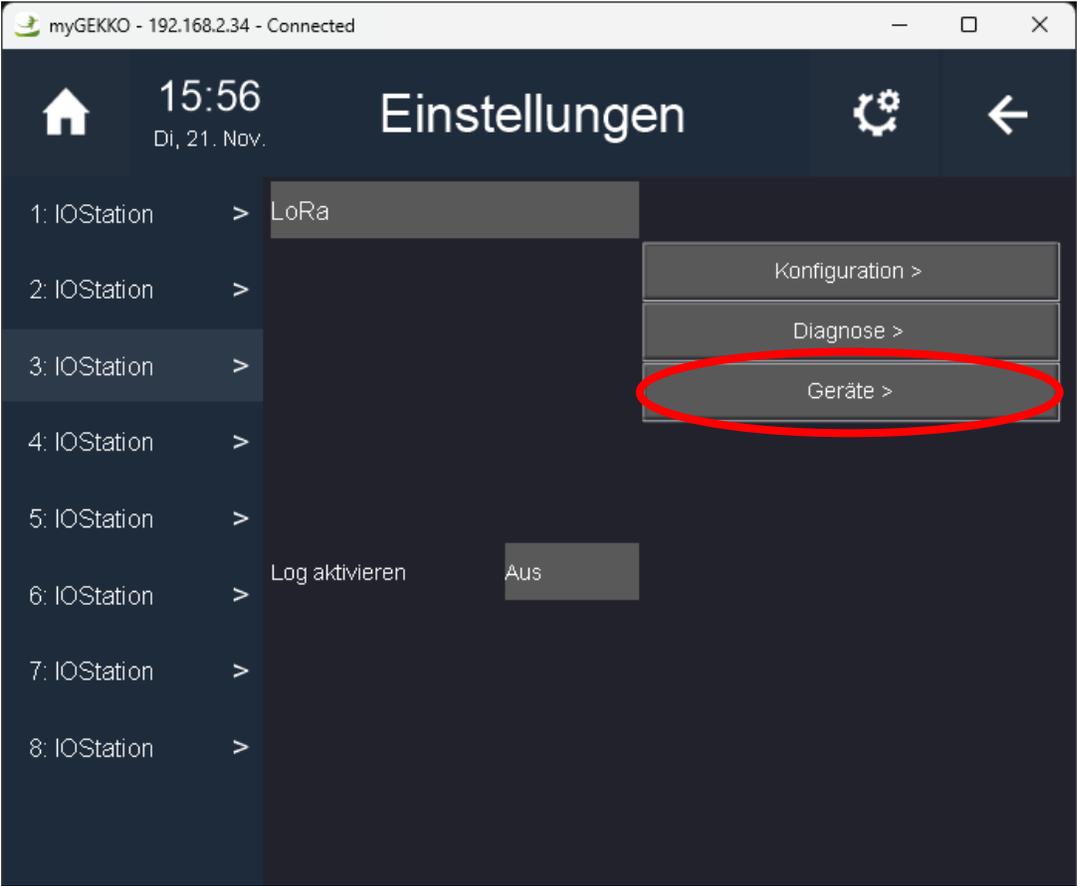
		department if this occurs.
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Management of the MQTT devices

myGEKKO IO Stations are bridges between the myGEKKO system elements and external sensors, thus allowing the connection between the real and digital world. In this section, the management of the real-world devices within the MQTT IO Station is explained.

Adding new devices

Starting in the IO Station main screen, please click on the “Devices” button.



Then, the device manager will be shown. The device manager screen is divided into rows, where each row will belong to a device. In addition, each row has multiple fields, organized by columns. The meaning of the columns is:



- **Name:** the name that the user assigns to the device. For example: “Temperature sensor kitchen”. The maximum number of characters is XXXX.
- **ID:** the unique ID for each device. In this case, for MQTT devices will be the DevEUI of the device. **WARNING:** please carefully write the correct DevEUI in this field and take care if you copy-paste from a file. It may contain hidden characters thus making the DevEUI unusable. For example: 70B3D558100015E1. **NOTE:** the users can add the DevEUI using upper or lower case, and with or without ‘-’. The myGEKKO controller filters it and uses the right format.
- **Profile:** the profile associated with the device. A profile is a set of rules to understand the content of the device’s data package. Therefore, for each supported device in the myGEKKO controller, a profile can be found. For example, “enerthing enerSENSE CO2”. **WARNING:** the selection of a wrong profile for a sensor will lead to a malfunction of data extraction and, therefore, the acquisition of wrong data. This can be dangerous for the myGEKKO controller and the sensors/actuators connected to it.
- **BAT:** the actual battery level (if available) of the device, in “%”. If the sensor is not using batteries, “N/A” will be shown.
- **Info:** the current state of the device connection. It shows also the last time (time and date) that a message was received from the device. If the connection is good, it will show “Connected” with a green background. If something is not going good, the proper error message will be shown with a red background.

In addition, 4 buttons located at the bottom of the screen can be found. These buttons are:

- **Save:** save the current state of the device list.
- **Reload:** load the latest state of the device list that was saved.
- **GW configuration:** configure the MQTT Broker by using the current device list.
- **Back:** go back to the IO Station main screen.

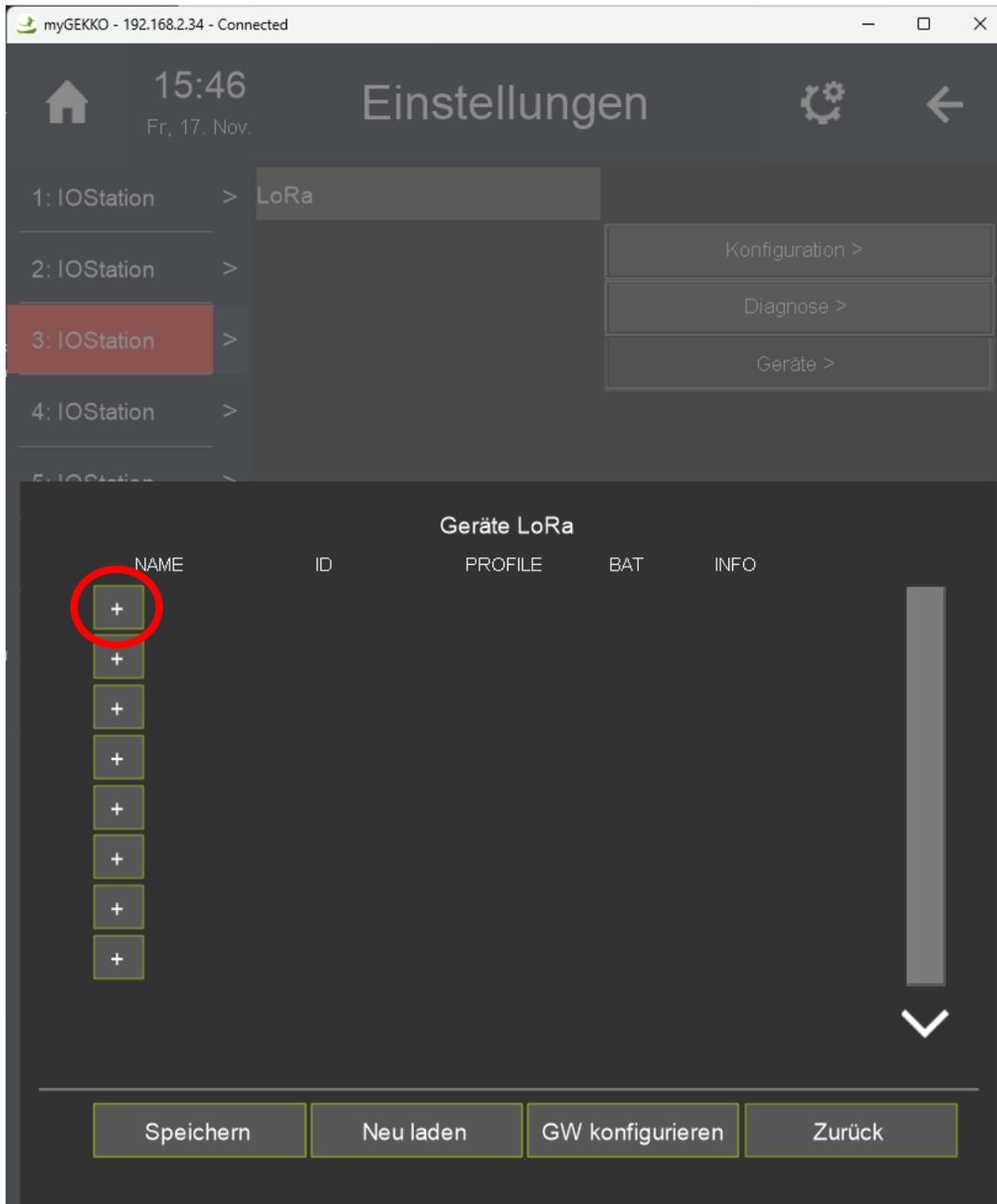
NOTE: it is recommended that, after every device that is either added or removed, the user clicks on the “Save” button to avoid loose information. If something happens in that moment, and the user did not save the latest changes, they will be lost.

WARNING: if the “Reload” button is pressed before the “Save” button, then the latest changes will not be saved, and the data which will be uploaded will be the last version of the devices list that was saved. The same behavior will happen if we click on the “Back” button.

NOTE: the Broker configuration button takes the latest version of the device list that was saved by the user. That means that the user should 1) first click on the “Save” button to save the latest version, and 2) second click on the “GW configuration” button to send the devices’ information to the MQTT Broker. The same concept applies when the user delete a device.

To add a new device, please click on the “+” icon located on the left side of the screen, in any of the free entries. For example, in the first row.





A popup screen will appear, including the needed fields to be filled with the new device information. This screen has 5 text fields which must be filled up to add a new device. These fields are:

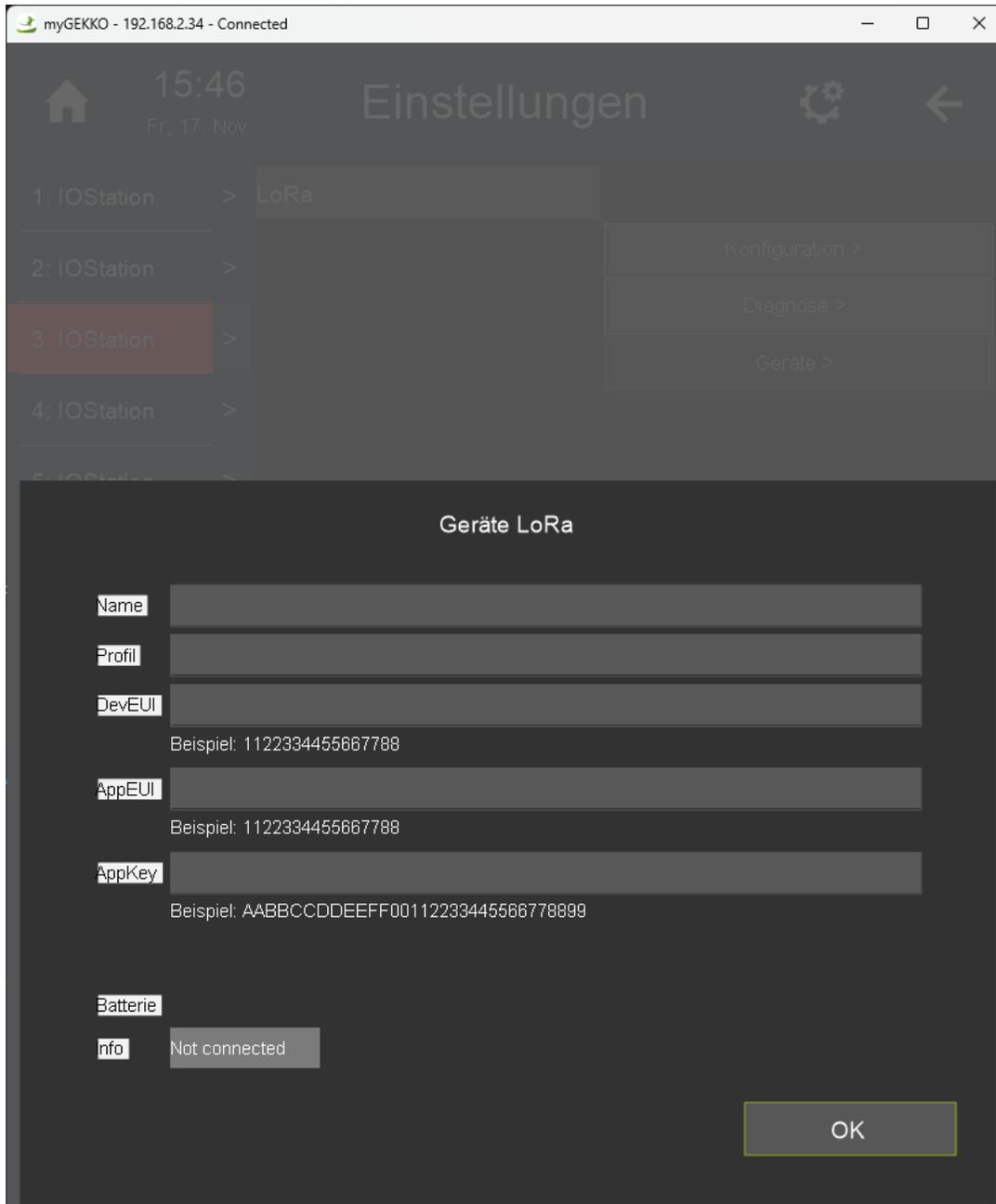
- **Name:** the name associated with the device.
- **Profile:** the profile, within the list of supported profiles, associated to the device.



- **DevEUI:** the DevEUI provided by the manufacturer. The supported format is, for example, 1122334455667788, instead of 11-22-33-44-55-66-77-88. And letters must be uppercase.
- **AppEUI:** the AppEUI provided by the manufacturer. The supported format is, for example, 1122334455667788, instead of 11-22-33-44-55-66-77-88. And letters must be uppercase.
- **AppKey:** the AppKey provided by the manufacturer. The supported format is, for example, 112233445566778899AABBCCDDEEFF, instead of 11-22-33-44-55-66-77-88-99-AA-BB-CC-DD-EE-FF. And letters must be uppercase.

The first step is to click in the text field of “Name”. Then, a popup screen will be shown.



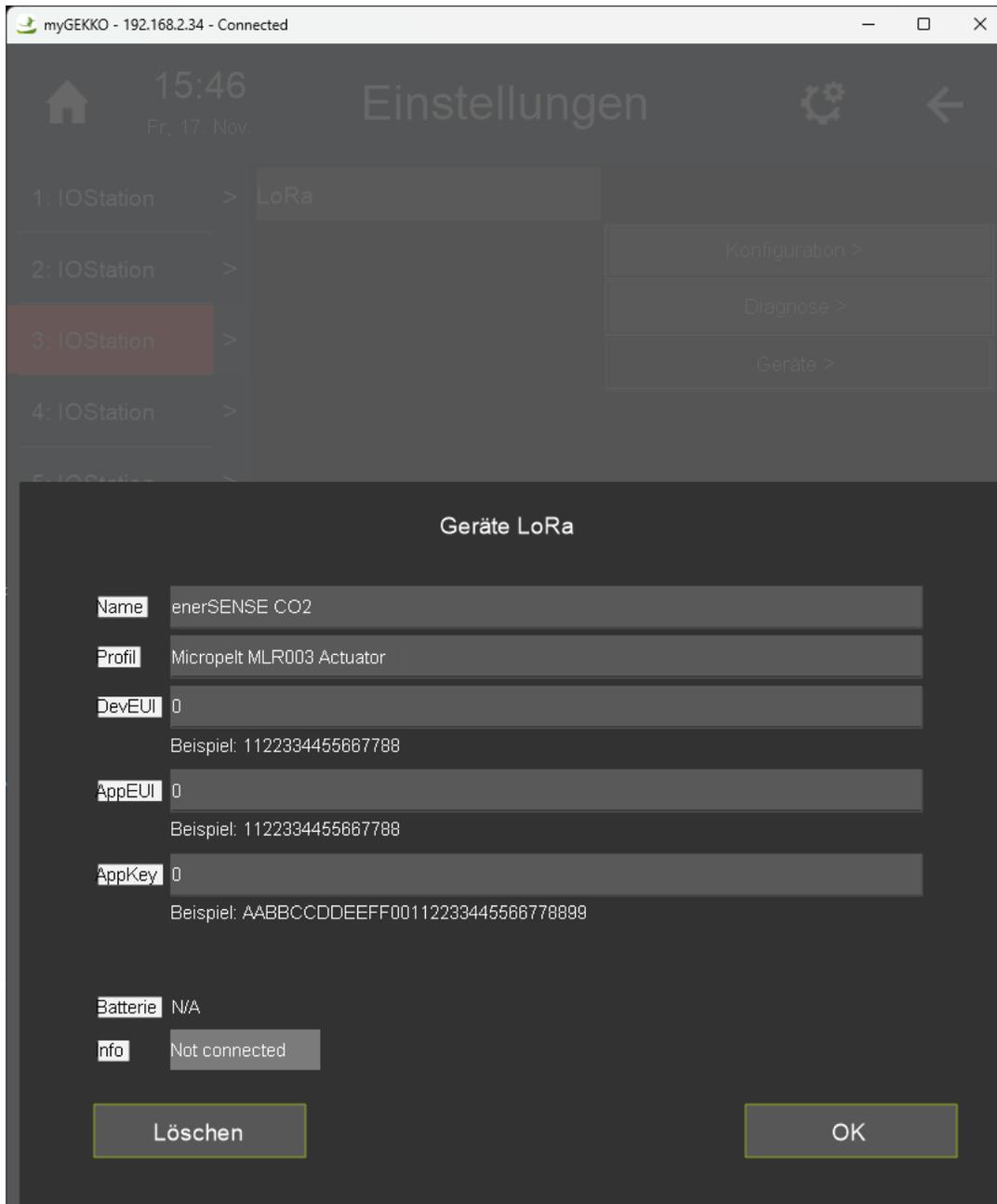


There, a self-described name is recommended to be added. In our case, and since we are adding a sensor from Enerthing, called enerSENSE CO2, we will call it "enerSENSE CO2". Click on the "OK" button to confirm the name.

(IMAGE)



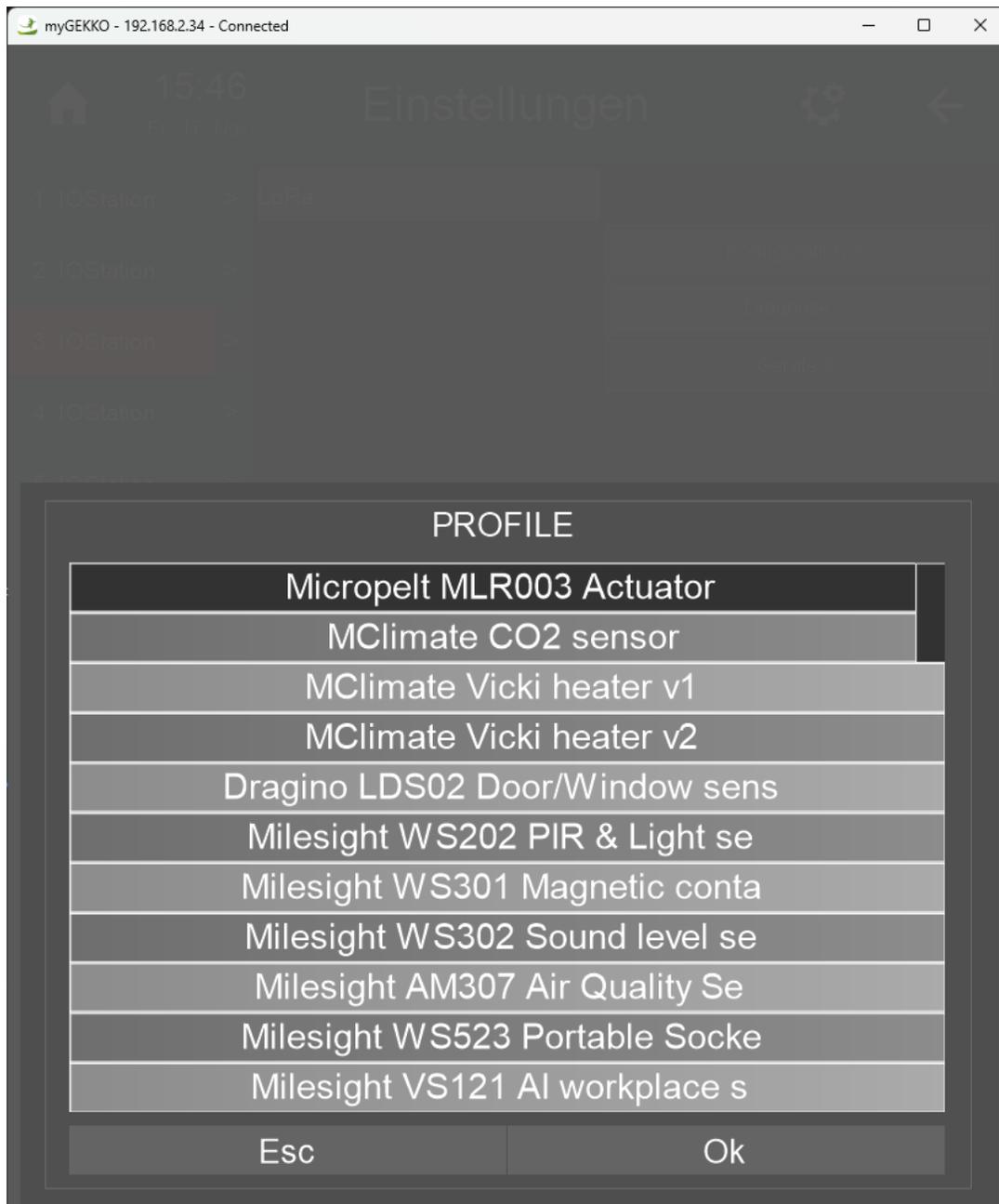
As soon as a name is introduced, the "Profile" field is automatically initialized with the first available profile. In this case, the "Micropelt MLR003 Actuator". This avoid to have initialized devices without a associated profiles.



Since the sensor that we are including is not the Micropelt MLR003 actuator, we need to change and select the correct profile. To do that, please click on the "Profile" text field. In this case, a popup screen is shown containing a list of the available profiles to be selected in the myGEKKO

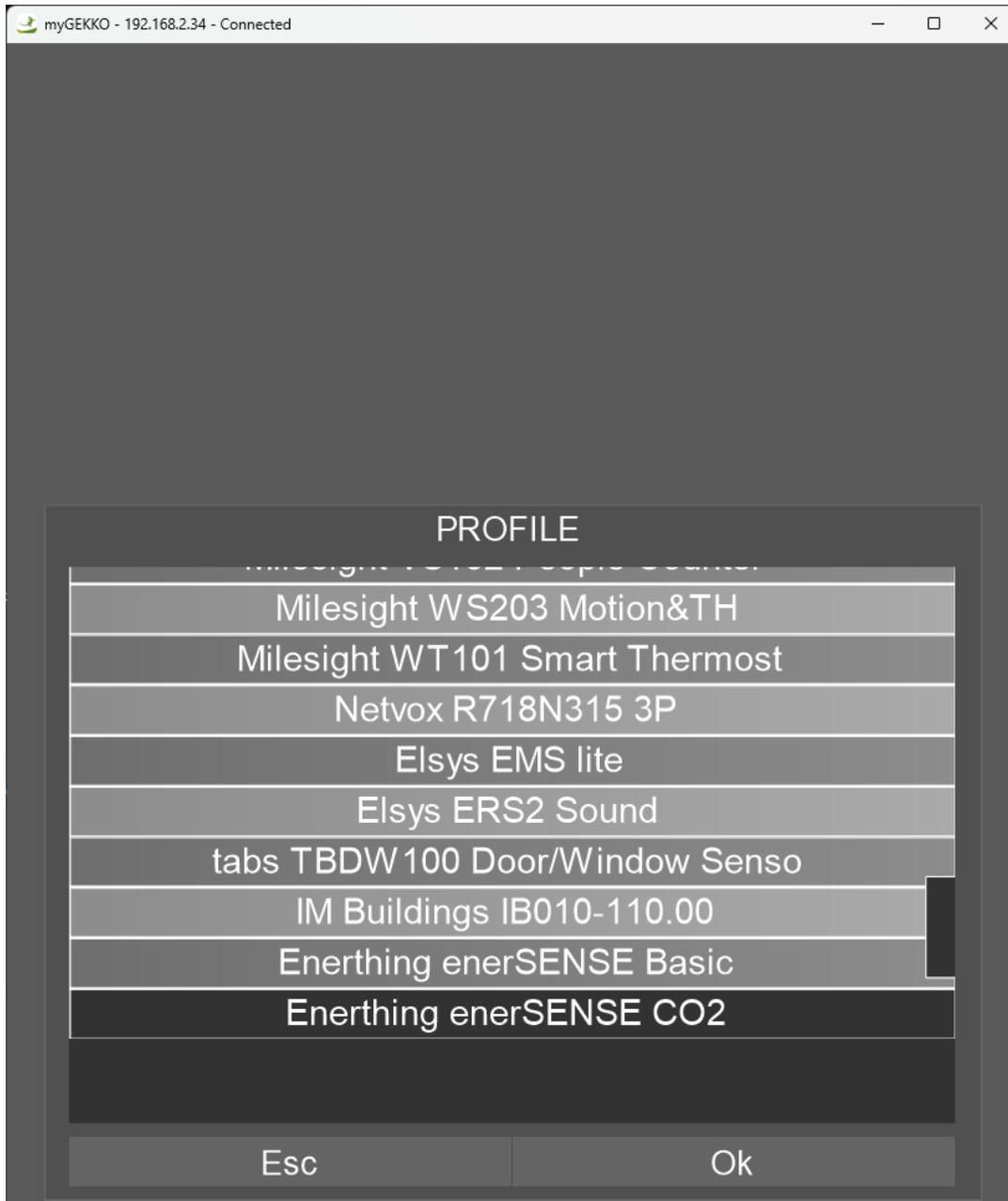


controller. This is, a list of supported devices into the controller. **NOTE:** if you acquired a device which is not shown in that list, please contact to our support team.



Scroll down until you find the correct profile. In our case, the correct profile would be “Enerthing enerSENSE CO2”. Click on it, and then click on the “OK” button. **NOTE:** the correct profile to be selected will be indicated in the delivery note when buying a device directly to myGEKKO. If a device is not bought directly to myGEKKO, please check the documentation of the MQTT supported devices that you can find here.

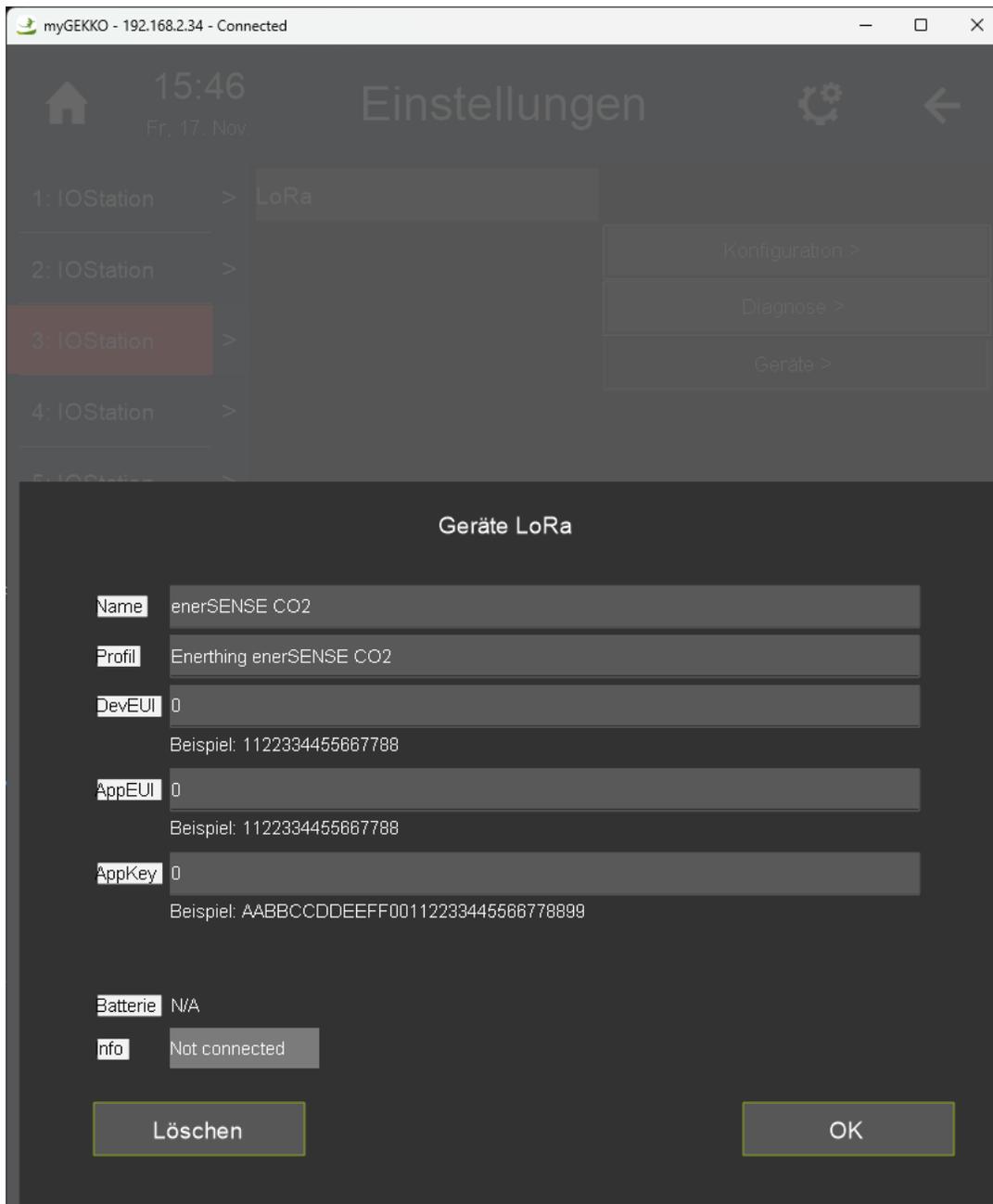




Then, the popup screen will be closed, and the device menu is shown again. **WARNING:** please make sure that the "Profile" field now shows the profile that you just selected.

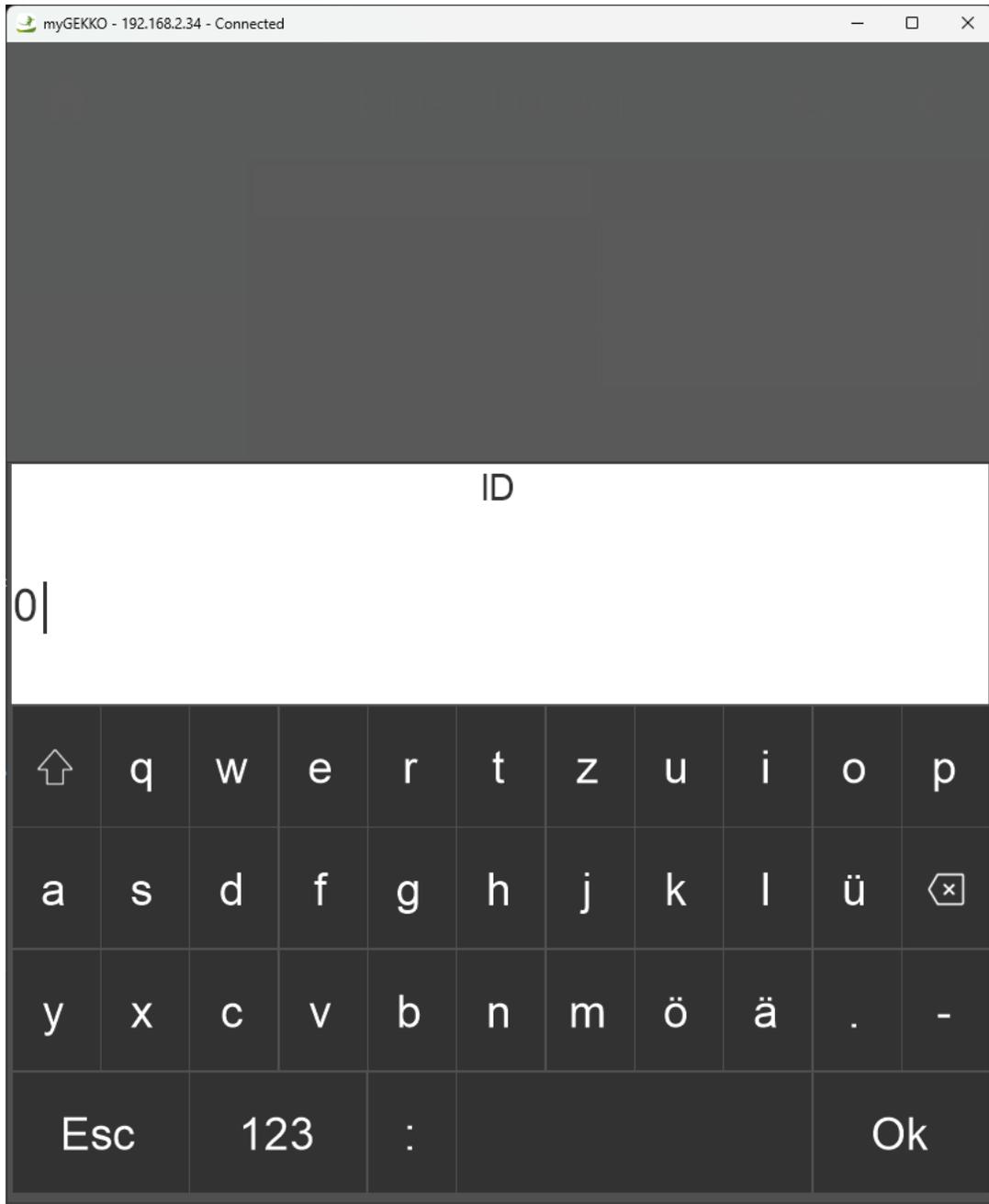
After giving a name and selecting the device's profile, it is time to add the device credentials, provided also when buying the device. We will start by introducing the DevEUI of the device. Click on the DevEUI text field.





A popup screen will appear with a text field including the character "0".





Please delete the character "0".





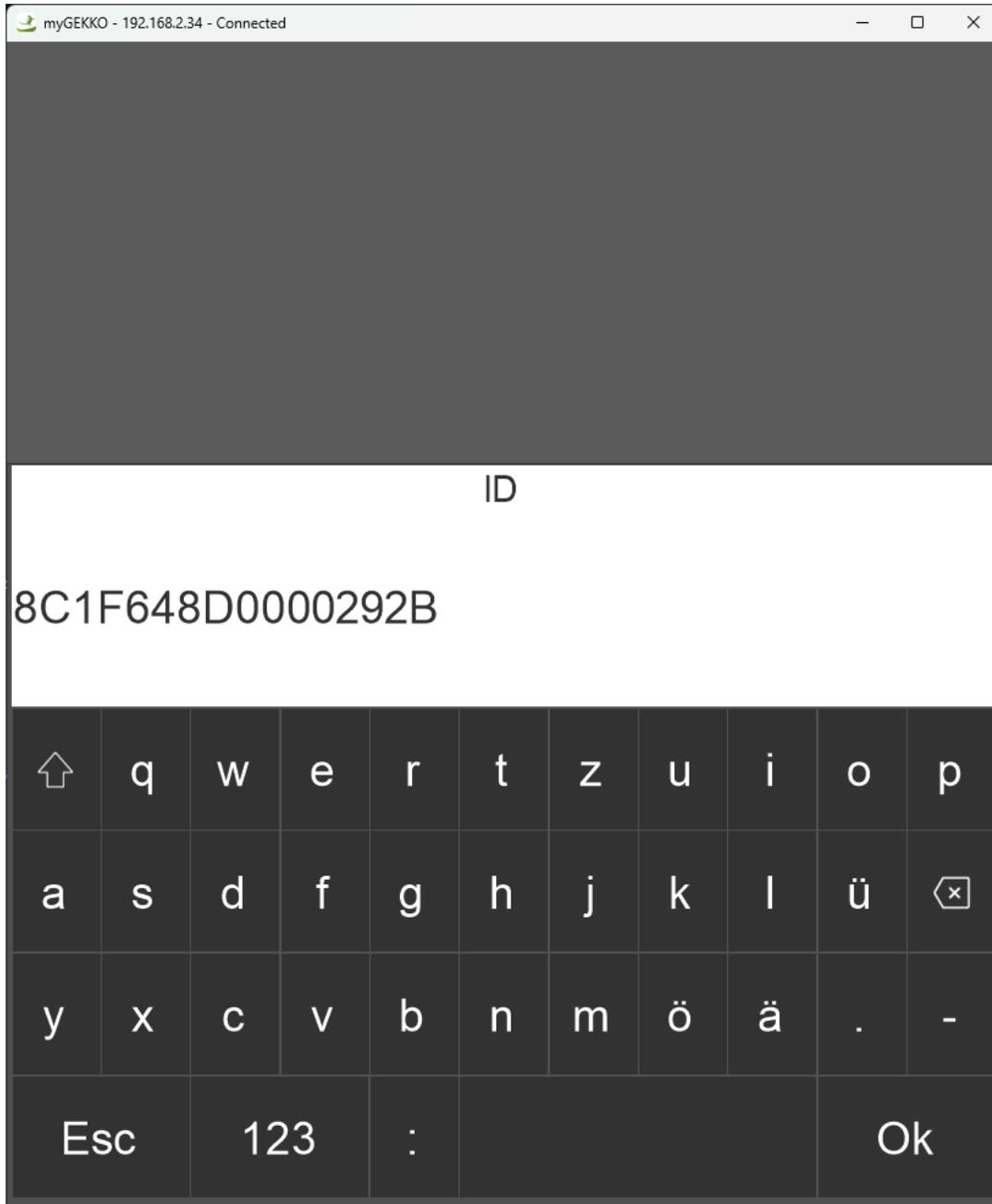
And then write the DevEUI associated to the device. As indicated before, it is important to write the DevEUI respecting the correct format. Otherwise, the system will not work properly. For example:

- 11AA22BB33CC44DD → correct.
- 11aa22BB33cc4dd → incorrect.
- 11-AA-22-BB-33-CC-44-DD → incorrect.

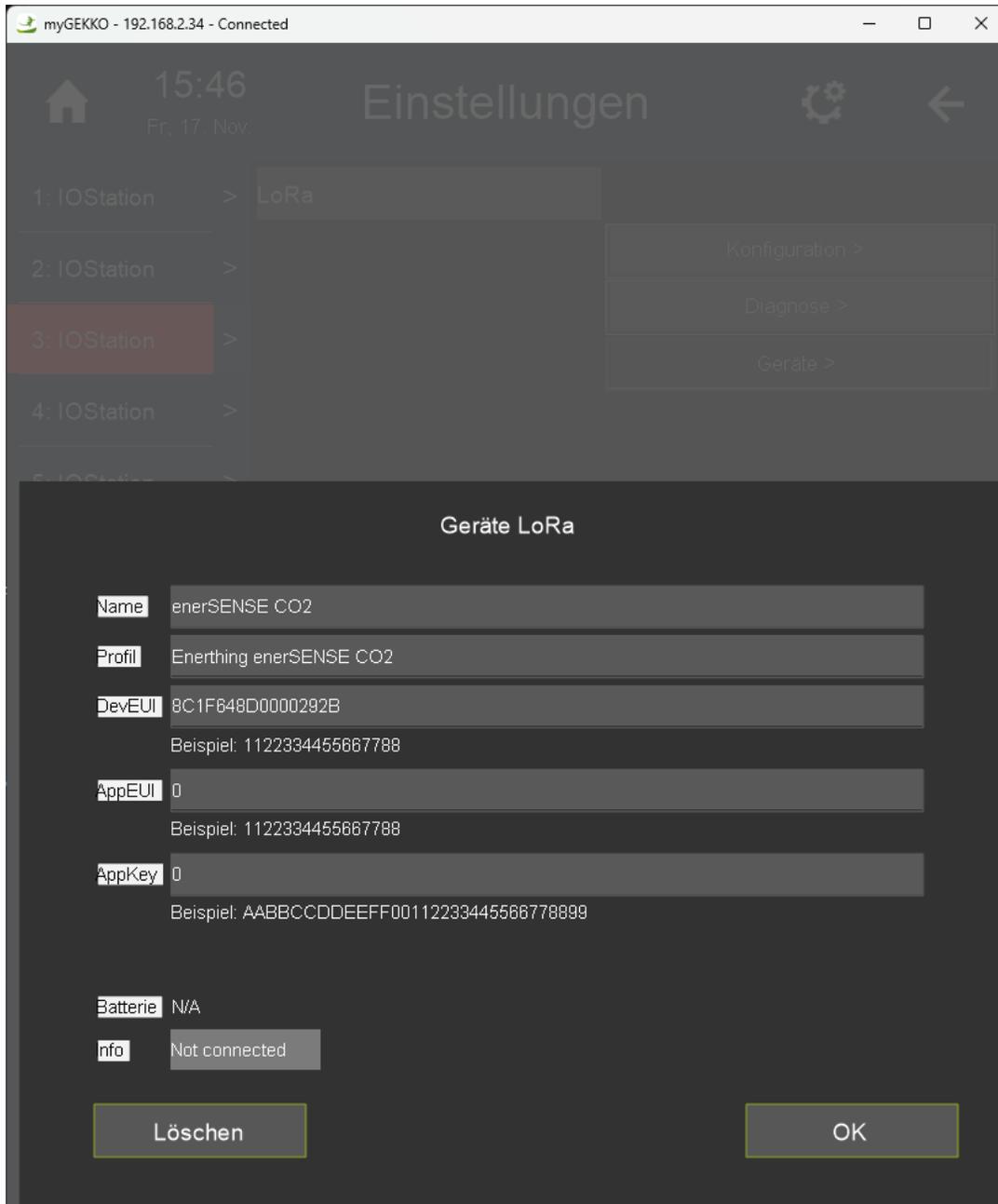


WARNING: to also avoid the inclusion of hidden characters, we recommend to manually write the DevEUI. The copy&paste process could add these hidden characters which are completely invisible for the user, but not for the software.

After texting the DevEUI, please click on the "OK" button.

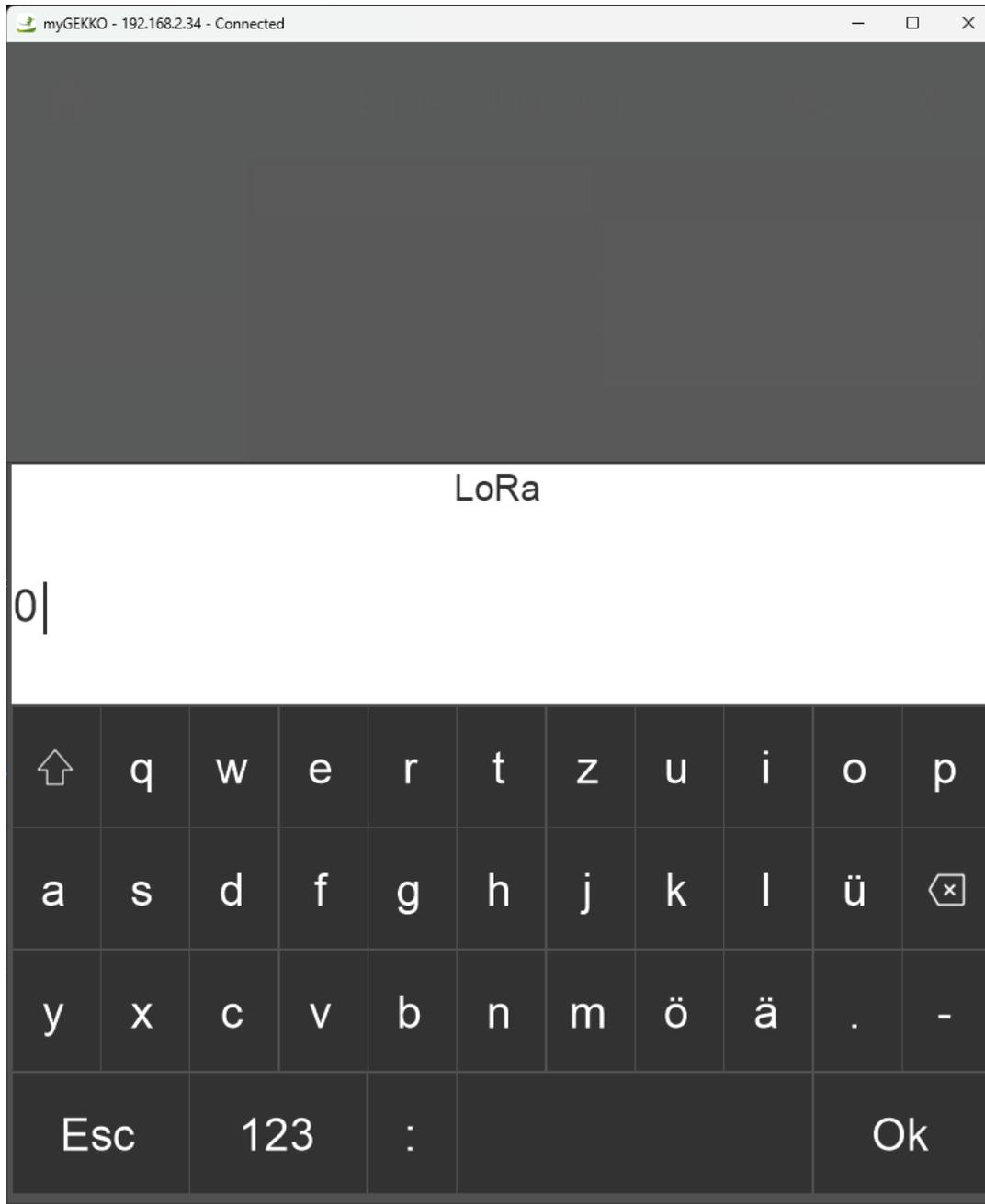


Once again, please check in the device screen that the just added DevEUI information is correct after clicking on the “OK” button.



Repeat the same process to add the AppEUI information. Click on the AppEUI text field to open the popup screen. The character “0” is shown.

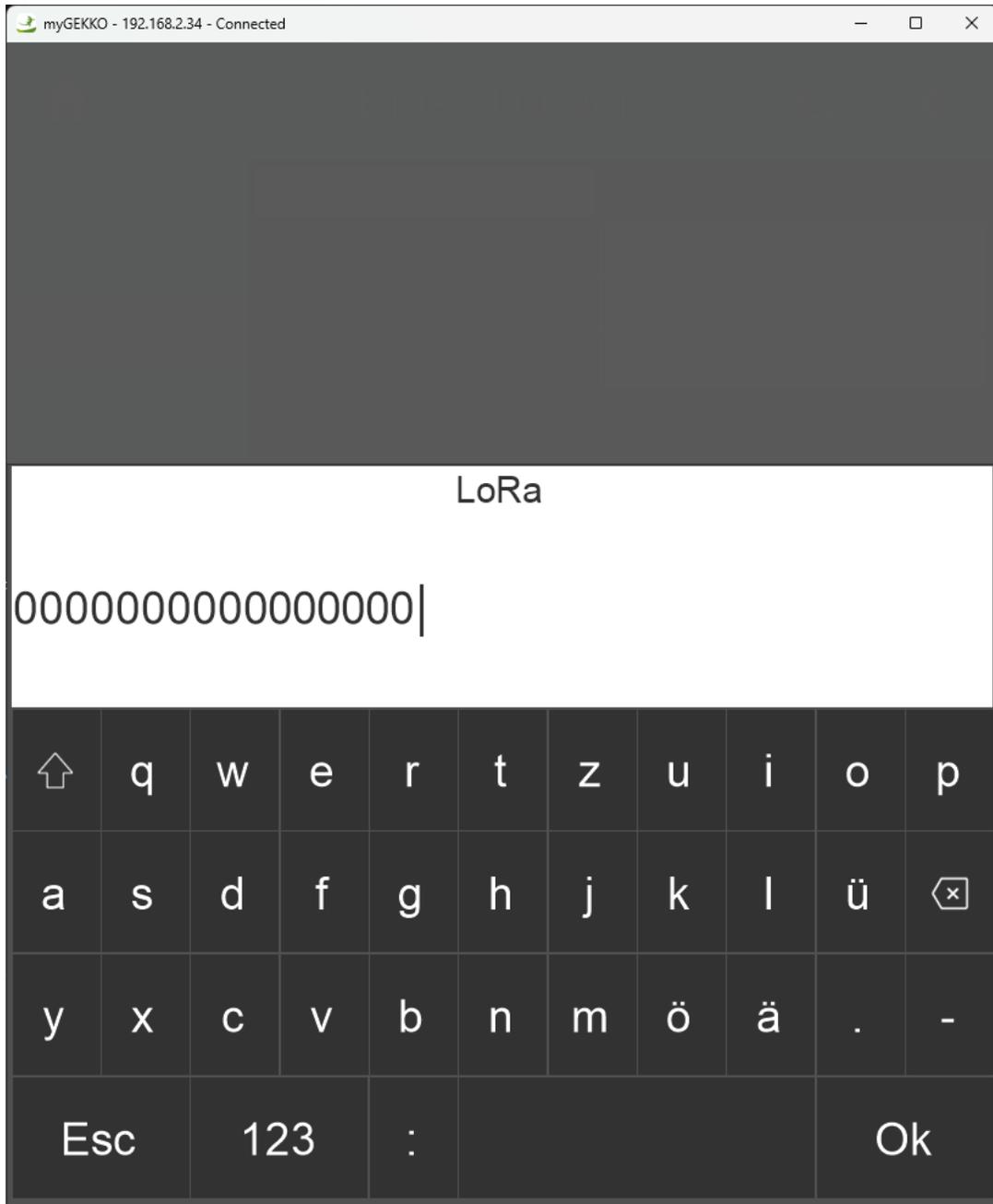




Please remove it and write, using the correct format, the AppEUI information associated with the device and provided when buying it. For example:

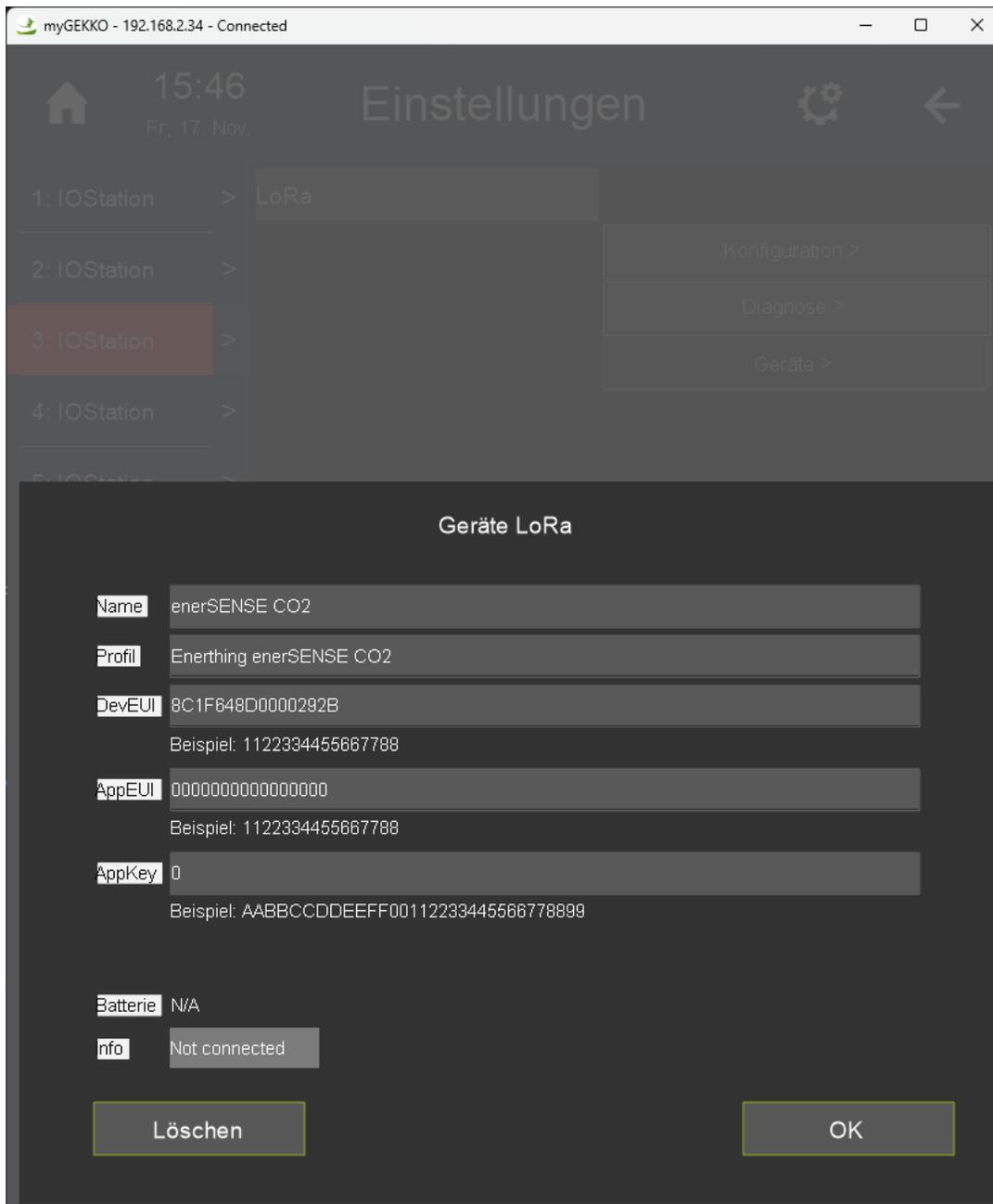
- AppEUI: 0000000000000000





Click on the “Ok” button to confirm the AppEUI. Finally, to add the AppKey, please click on the text field of the AppKey.

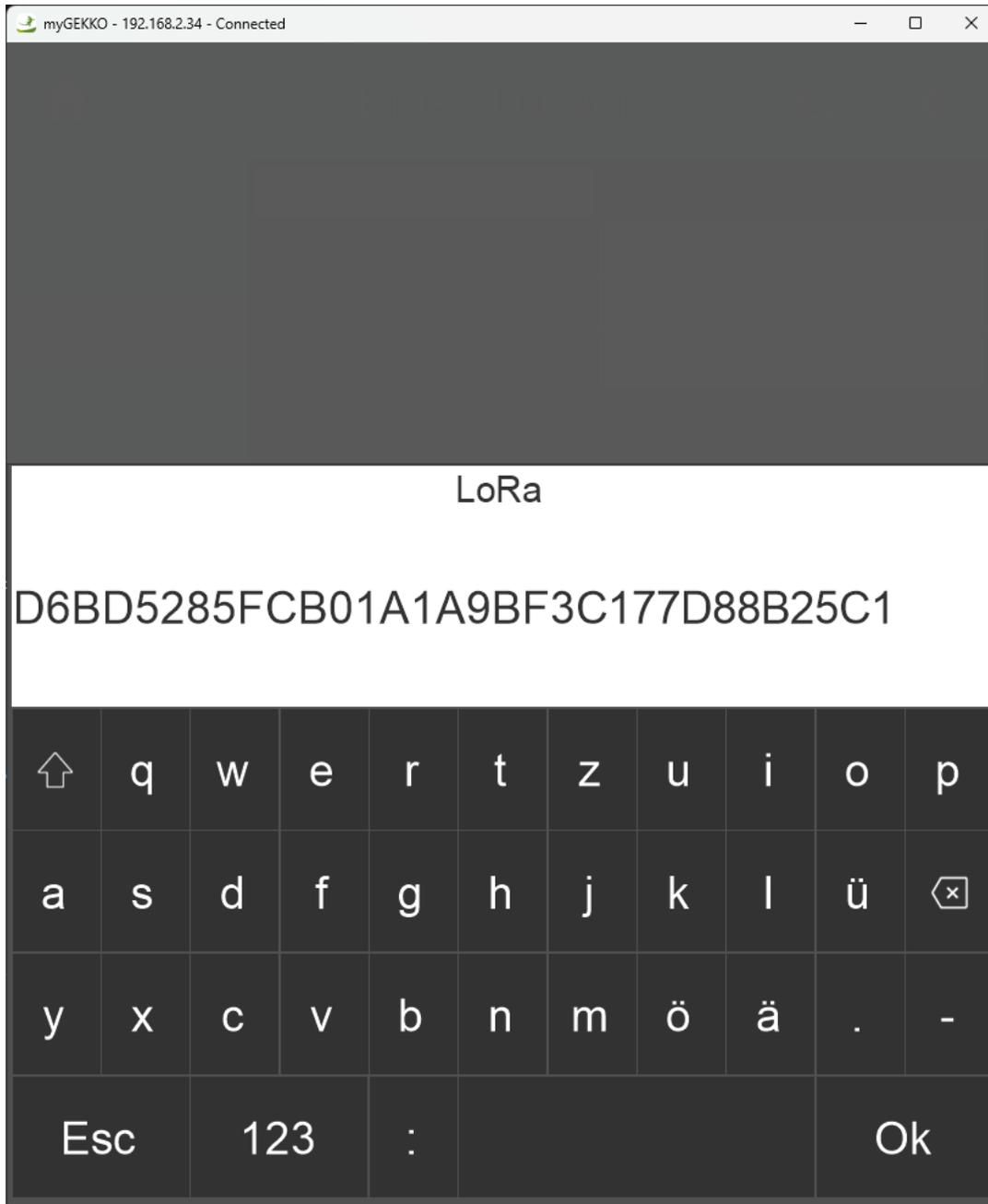




A popup screen will appear containing a text field with a 0. Please remove the 0 and write the correct AppKey of the device that was provided when buying it. For example:

- AppKey: D6BD5285FCB01A1A9BF3C177D88B25C1

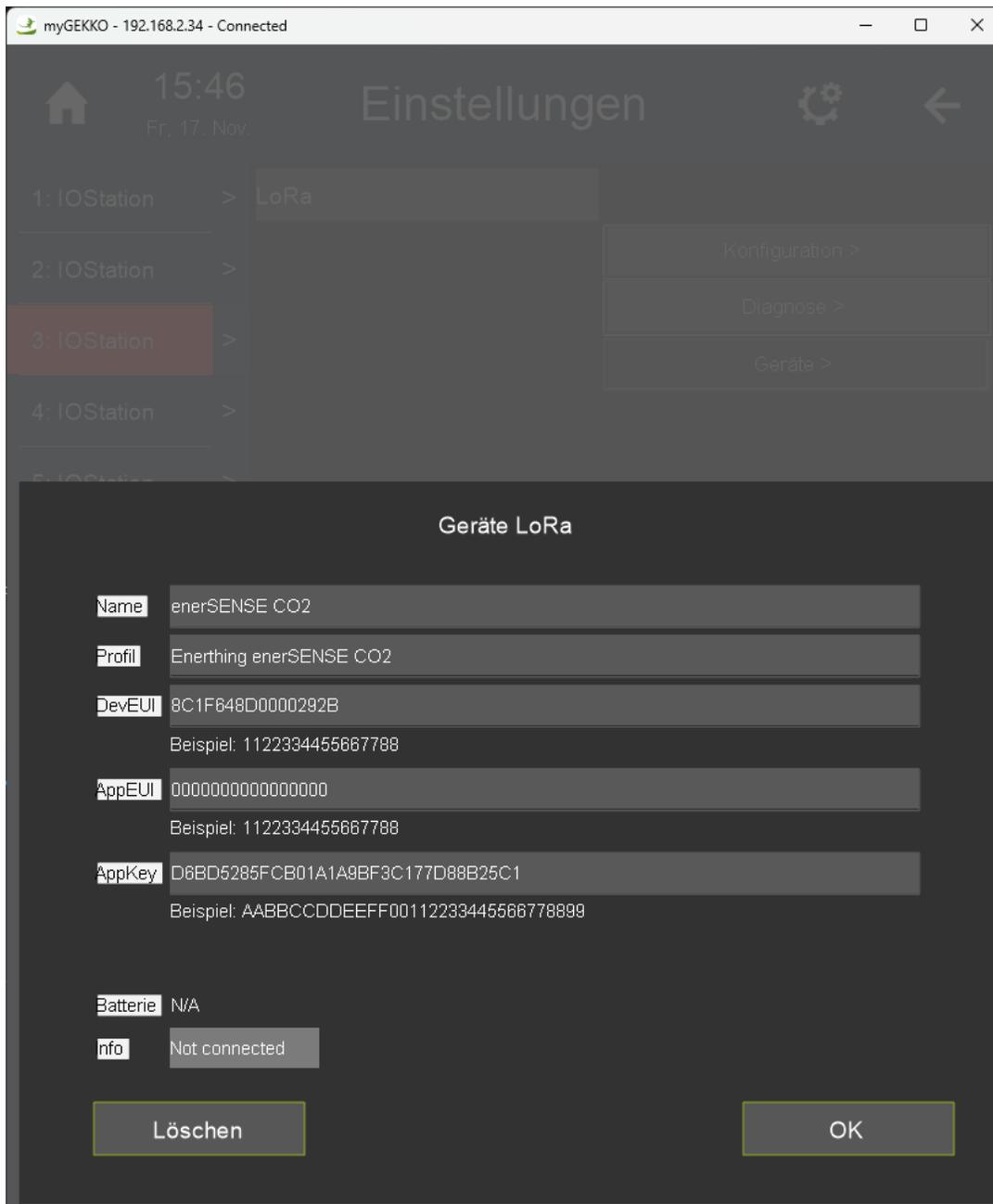




Click on the “OK” button to confirm the AppKey. Now, after writing all the sensor’s information, giving it a name, a associating a profile, the configuration is finished! Please click on the “OK” button to close the device info screen.

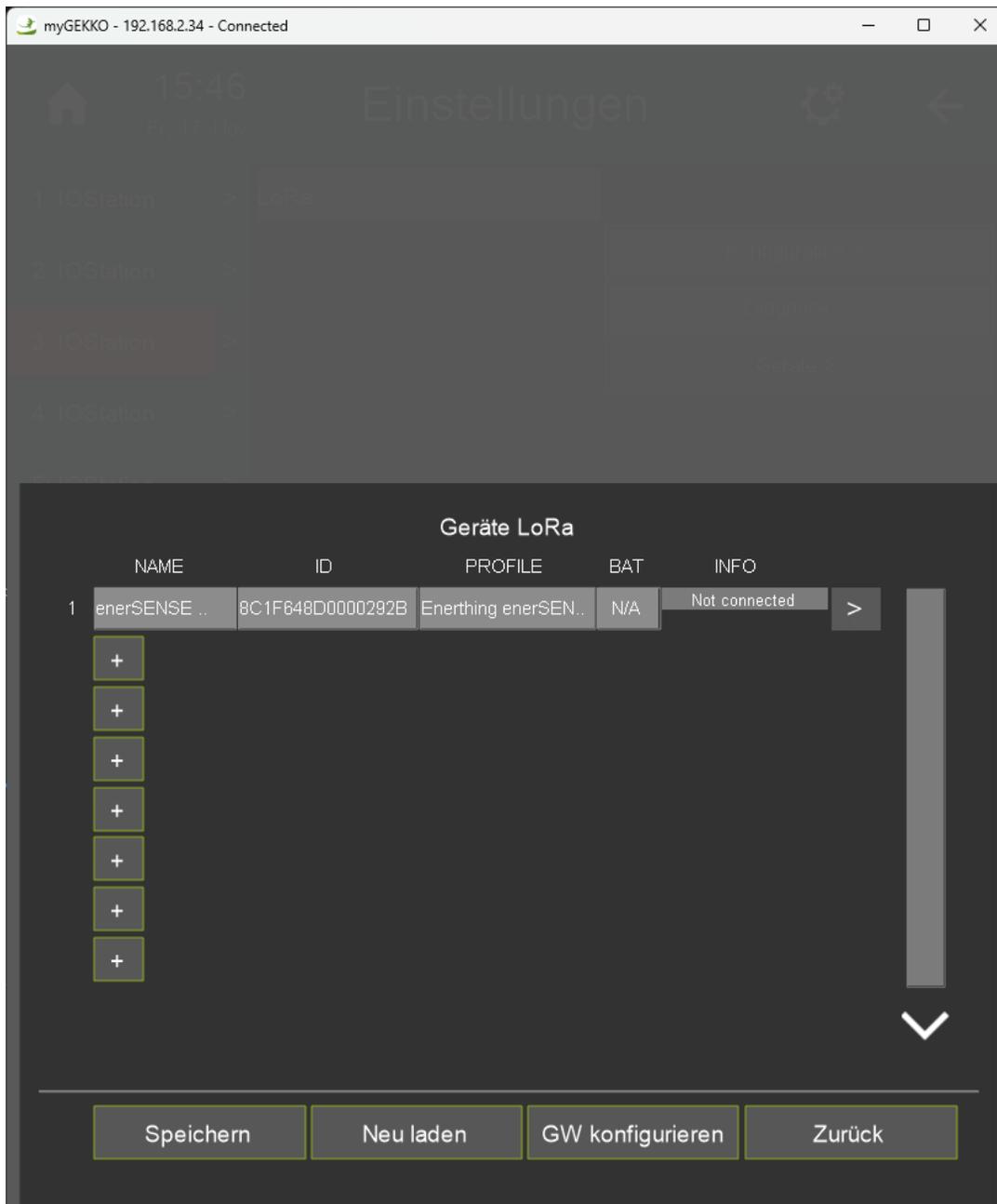
WARNING: as it was said before, device’s information is now introduced but not saved. If the controller is switched off, the just introduced information will be lost.





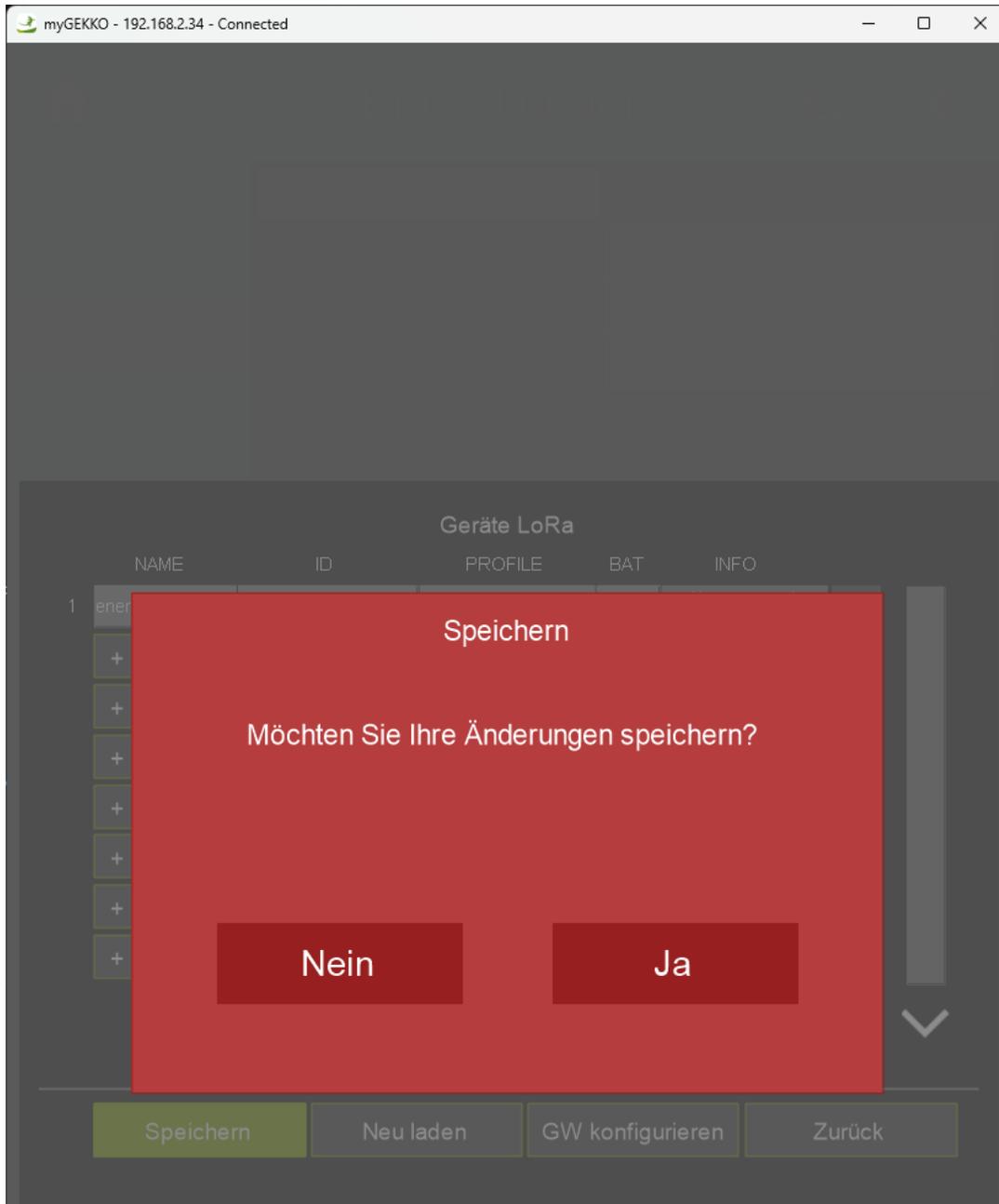
After clicking on the “OK” button, we go back to the IO Station device manager. Now, the just added device is shown. The “INFO” column indicates “Not connected” since we have not saved the new device. To do that, please click on the “Save” button, located at the bottom left corner of the screen.





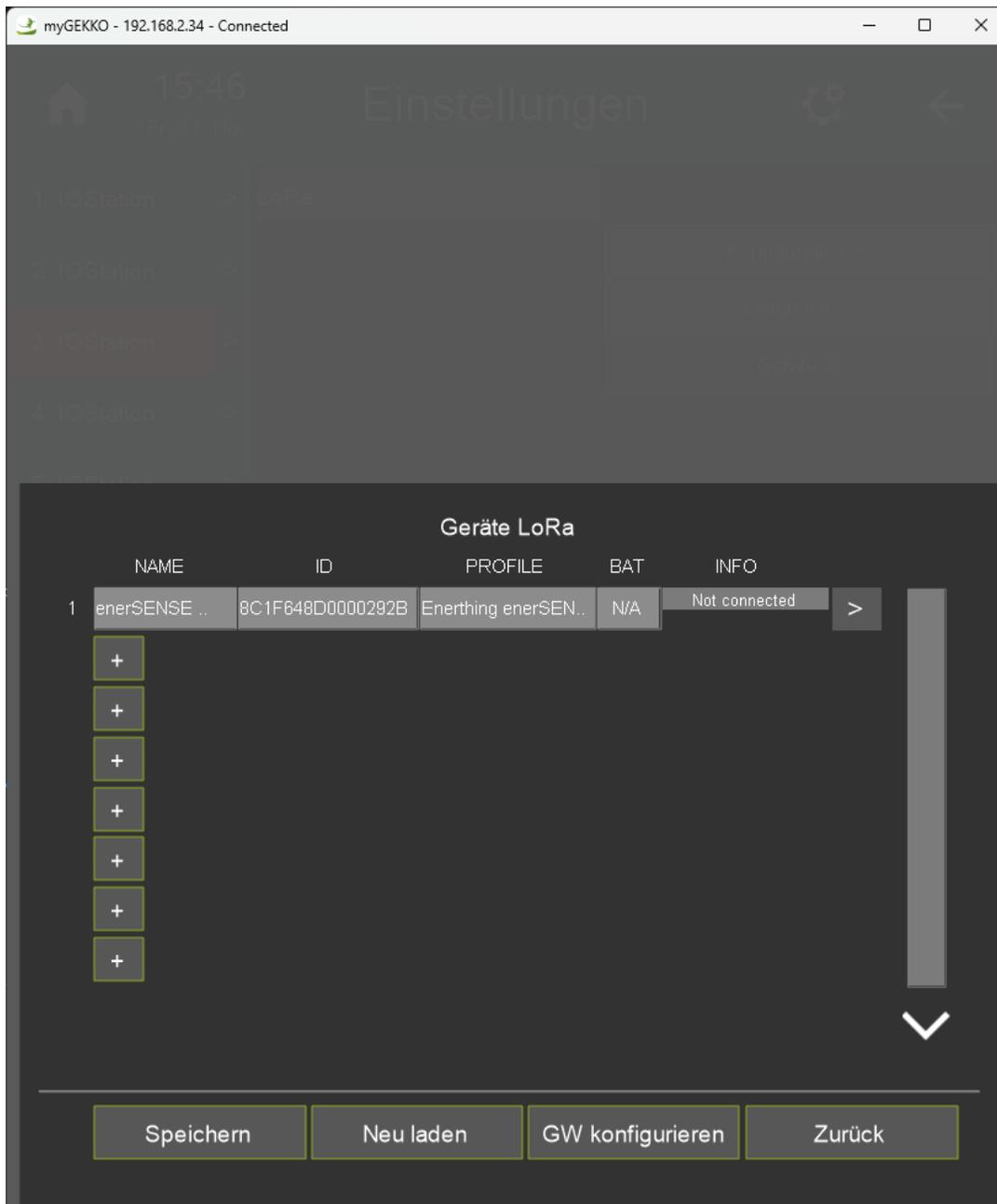
Another popup screen will appear asking if we are sure that we want to save the new device list. If we are not sure and we want to check again the new device, you can click on "No", and the popup screen will be close, redirecting to the device manager automatically. If you are sure, please click on "Yes".





Then, the "Save" button will remain with a green background for a few seconds, meaning that the saving process is being executed. When finished, the device manager will look like this:



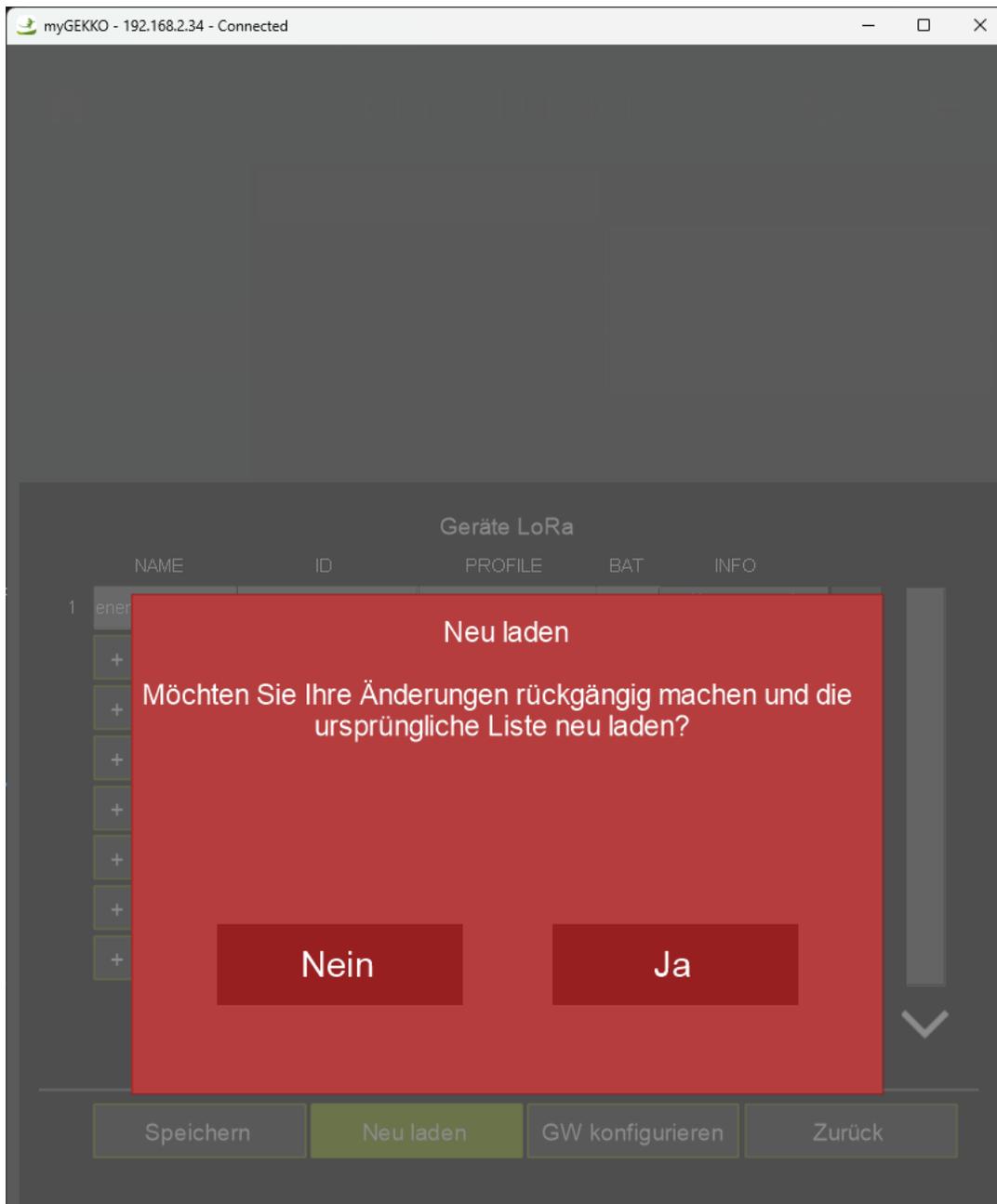


The "INFO" column will be still in the "Not connected" state since no packages have been received yet. Do not worry, as soon as the first package arrives, the "INFO" column will be updated.

To ensure that the device was successfully saved and stored in the device list with the correct configuration, we can click on the "Reload" button. This will force the system to clean the device manager screen, open the internal device list and show what is written there.



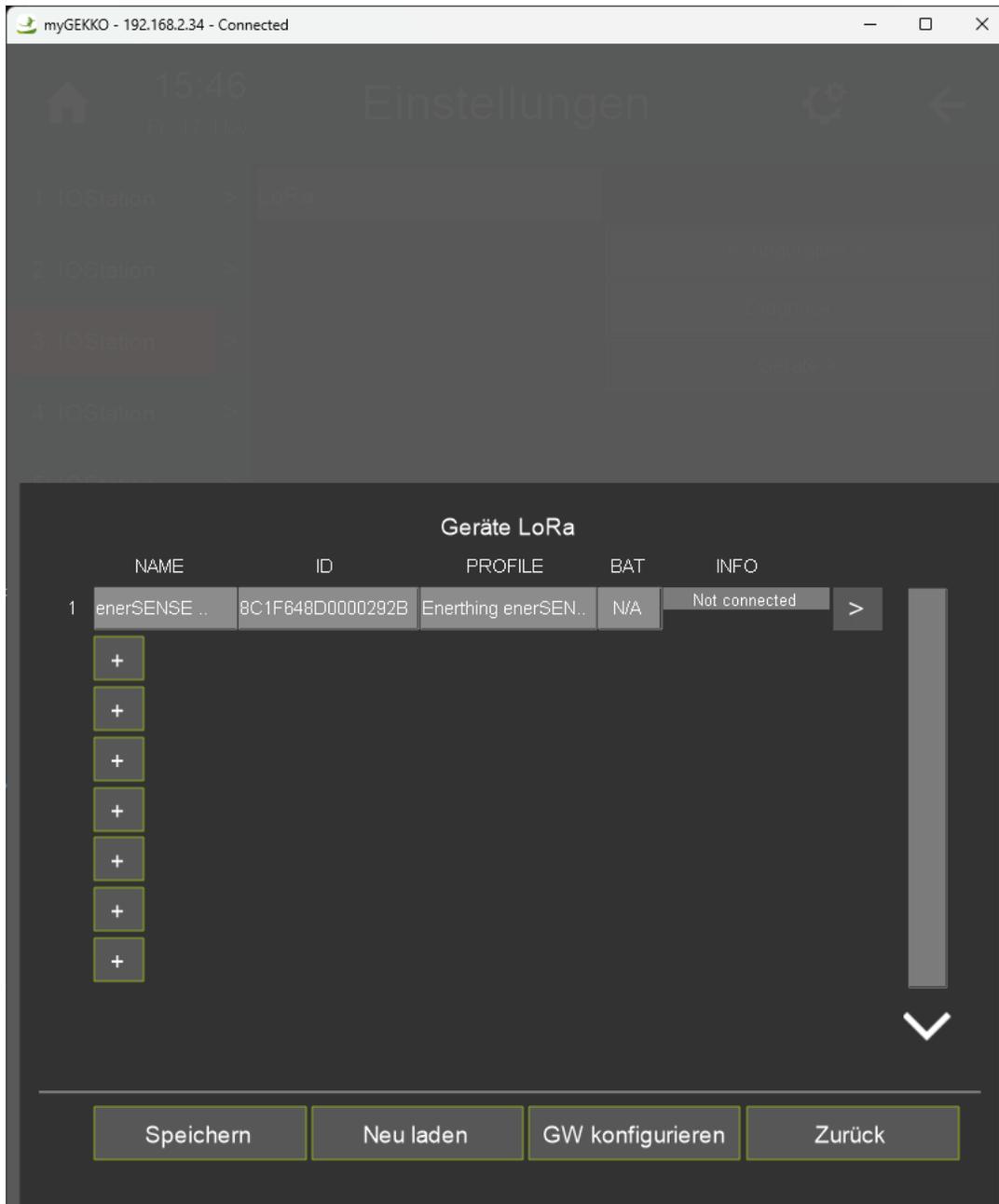
After clicking on the "Reload" button, please confirm that by clicking on the "Yes" button in the new popup screen.



After a few seconds, where the controller is processing the device list, all the devices stored in the internal device list are shown.



If the device that we just added is shown again, that means that the adding process was done good. However, if the device is not shown now, that means that something was wrong in the process, and the you have to start from the beginning.



As last step, we would need to click on the “GW configuration” button to also add this device to the Broker configuration in order to enable the direct communication between the MQTT Broker and the device. **This process can take between 5 and 10 seconds**, so we need to wait patiently without interacting with the myGEKKO controller.



WARNING: please note that the user should not click on the “GW configuration” button every time a device is added to the list. The use of this button should be done when the entire list of devices is complete. This means that, if we want to add 5 devices, first we should add the 5 devices (for sure clicking on “Save” every time we add a new device), and then click only once in the “GW configuration” button.

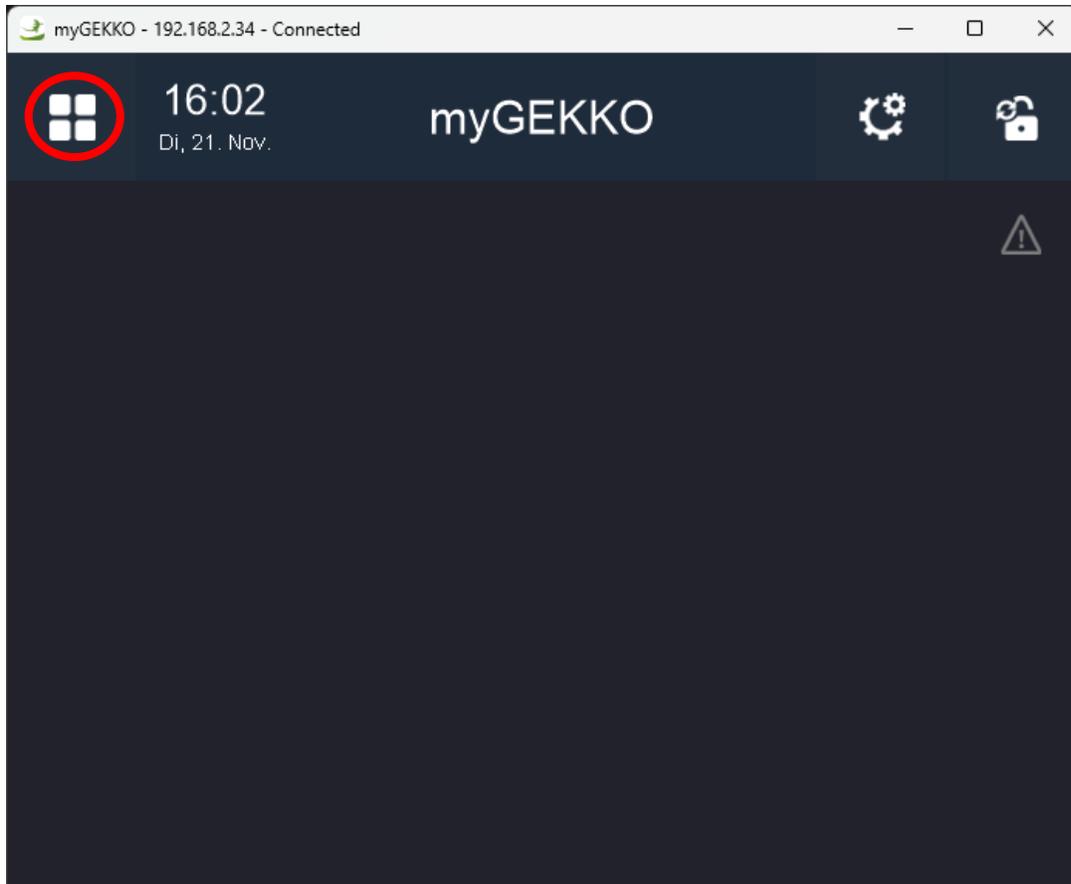
At this point, the addition of a new device is finished, and the device’s IO signals are ready to be used within the system elements.

Using the device’s IO signals within the system elements

The idea behind adding devices is to use their IO signals within the system elements as source of data or as an actuator controller. In this section we will see how to connect system’s elements’ signals with IO signals from devices from the IO station.

Starting from the main screen, click on the Menu button (square button on the top left corner of the screen):





Then, the system menu will be shown. For this example, a "Room control" system element will be created, where we will need the temperature, humidity, and air quality data inputs. Therefore, we click on the icon of the "Room Control".



myGEKKO - 192.168.2.34 - Connected

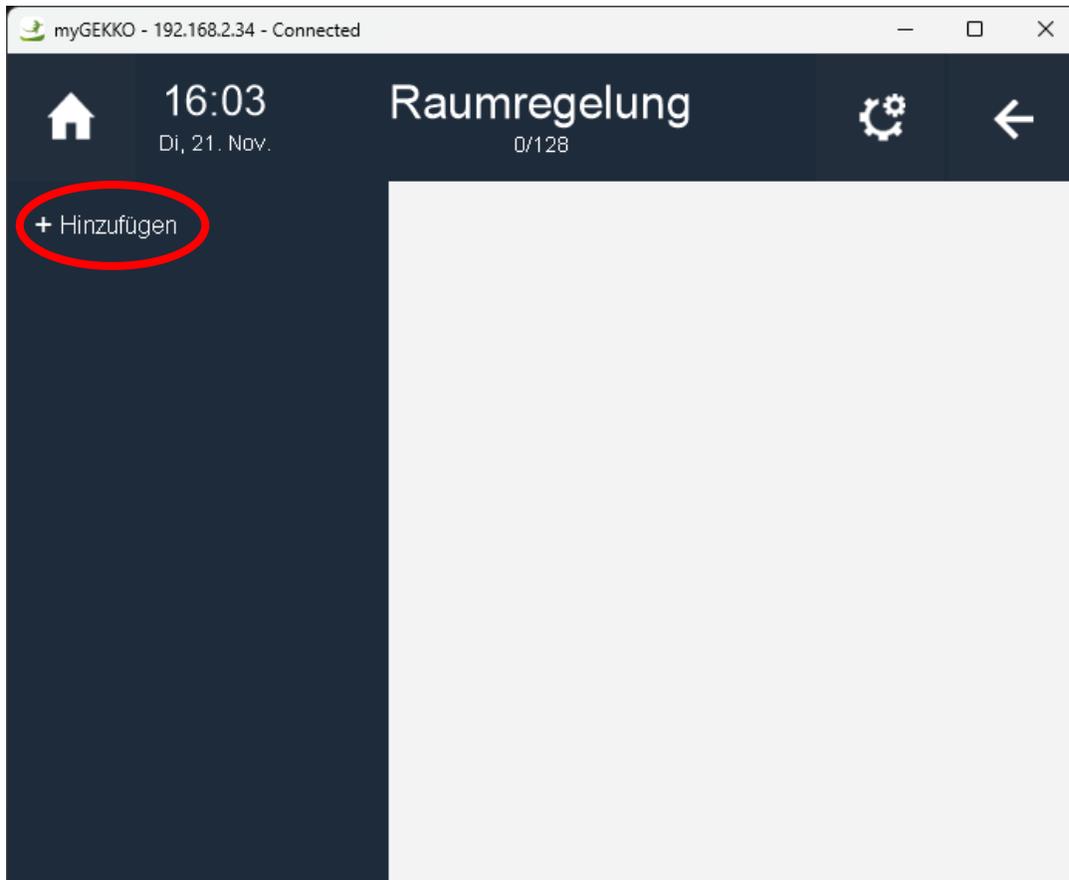
16:03
Di, 21. Nov.

Systeme

Licht	Jalousie	Lüftung	Gerät/Steckdose
Raumregelung	Zutritt	Alarmanlage	Musik
Video	Logik	Wetter	Alarm
Mail/Sms	E-Mobil	Energiemanager	Energiezähler
Uhren	Aktionen	Räume/Bereiche	Analyse
Sauna	Schwimmbad	Klimaanlage	>



The Room control manager is then shown. First step is to create a new page (if needed) by clicking on the left menu, on the “Add” button:



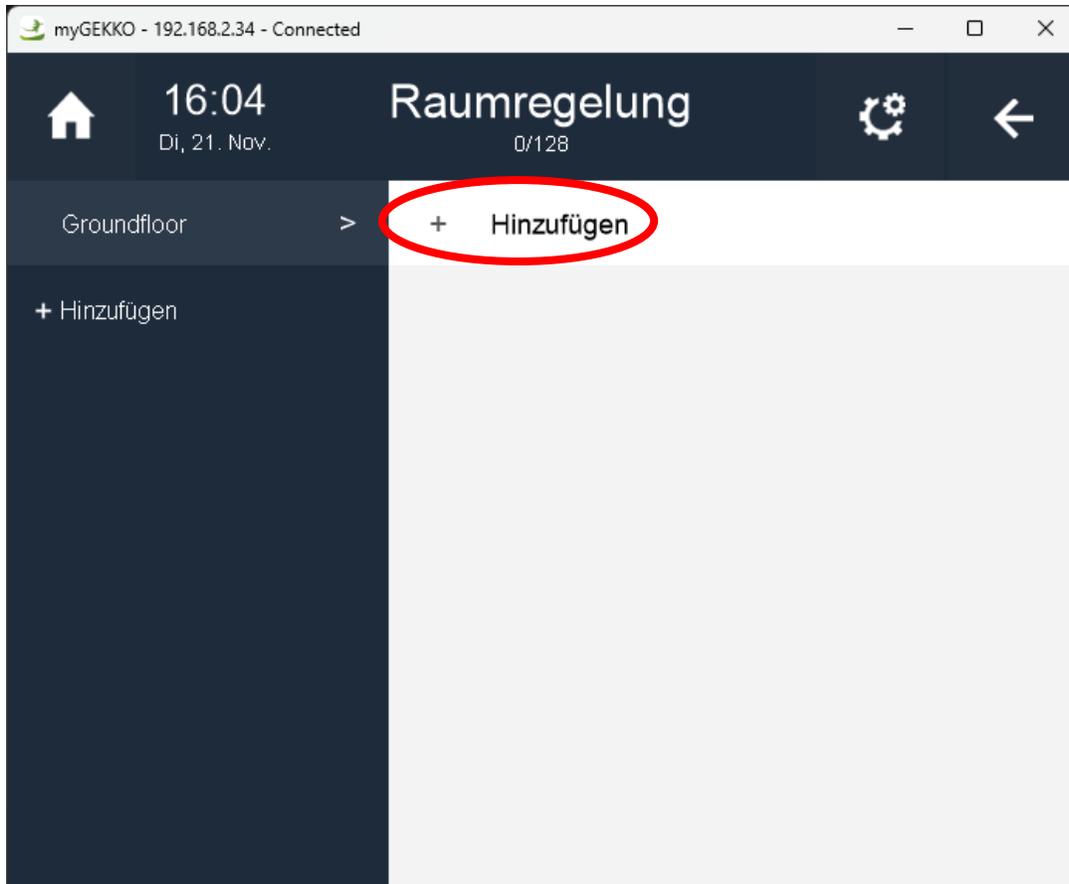
For this new page, we will give the name of “Ground floor”. Click on the “Ok” button to confirm it.





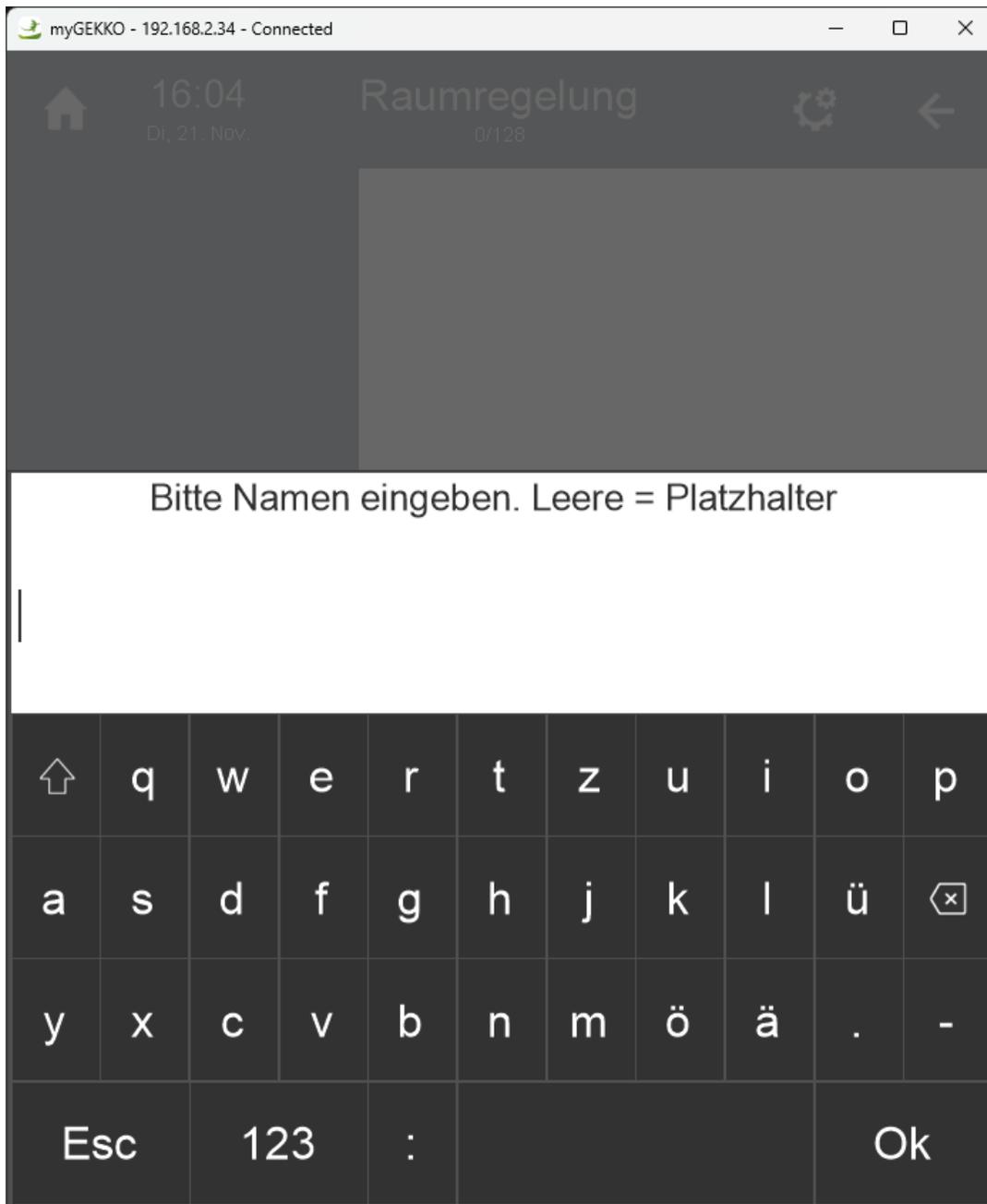
After creating the page, we can create a new system element of the room temperature control by clicking on the right button "Add".





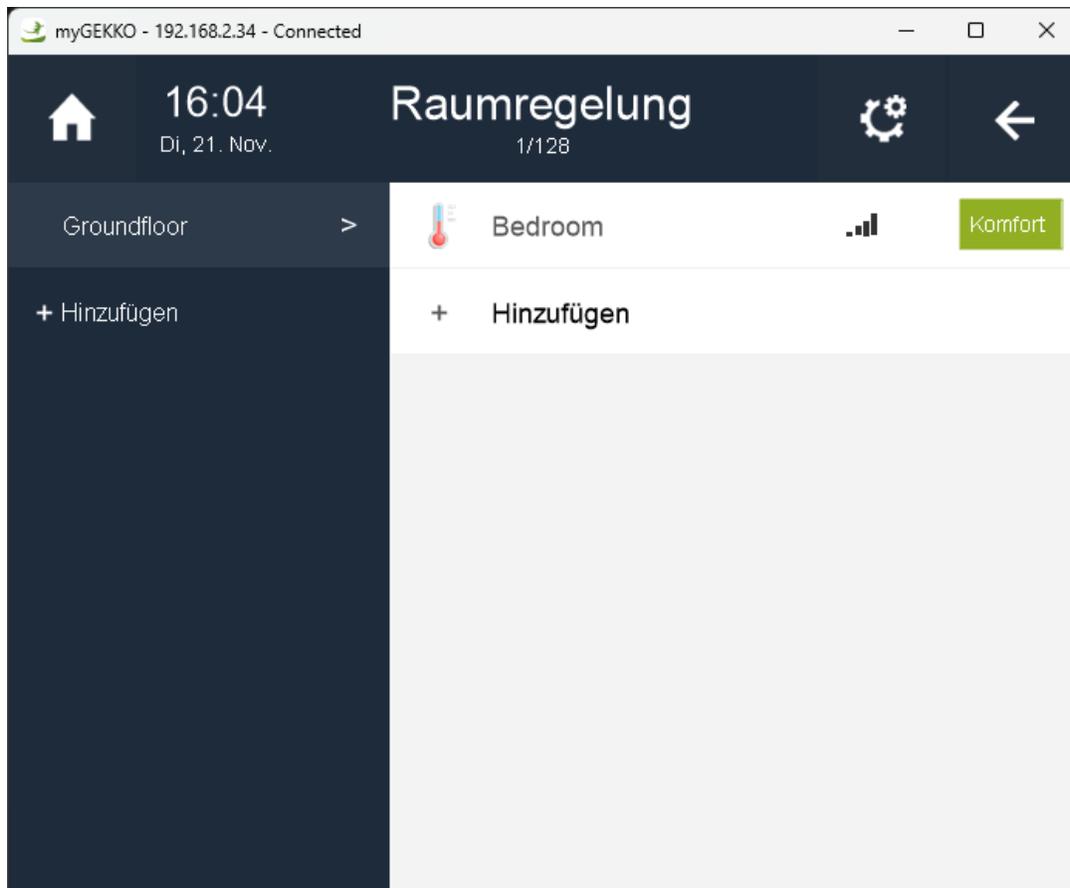
One more time, we give a name to this new system element. For example, "Bedroom". Click on the "Ok" button to confirm it.





At this point, the myGEKKO controller viewer should look like this:





This screen is not showing too much information since we did not configure any sensor to acquire the temperature of the room. It only shows the working mode, set to "Comfort". Please click on the element to see more details.

After clicking on the element, the room control screen will be shown. This screen will show you the temperature set point and also the opening level of the heating valve, among other things.



myGEKKO - 192.168.2.34 - Connected

16:04
Di, 21. Nov.

Raumregelung

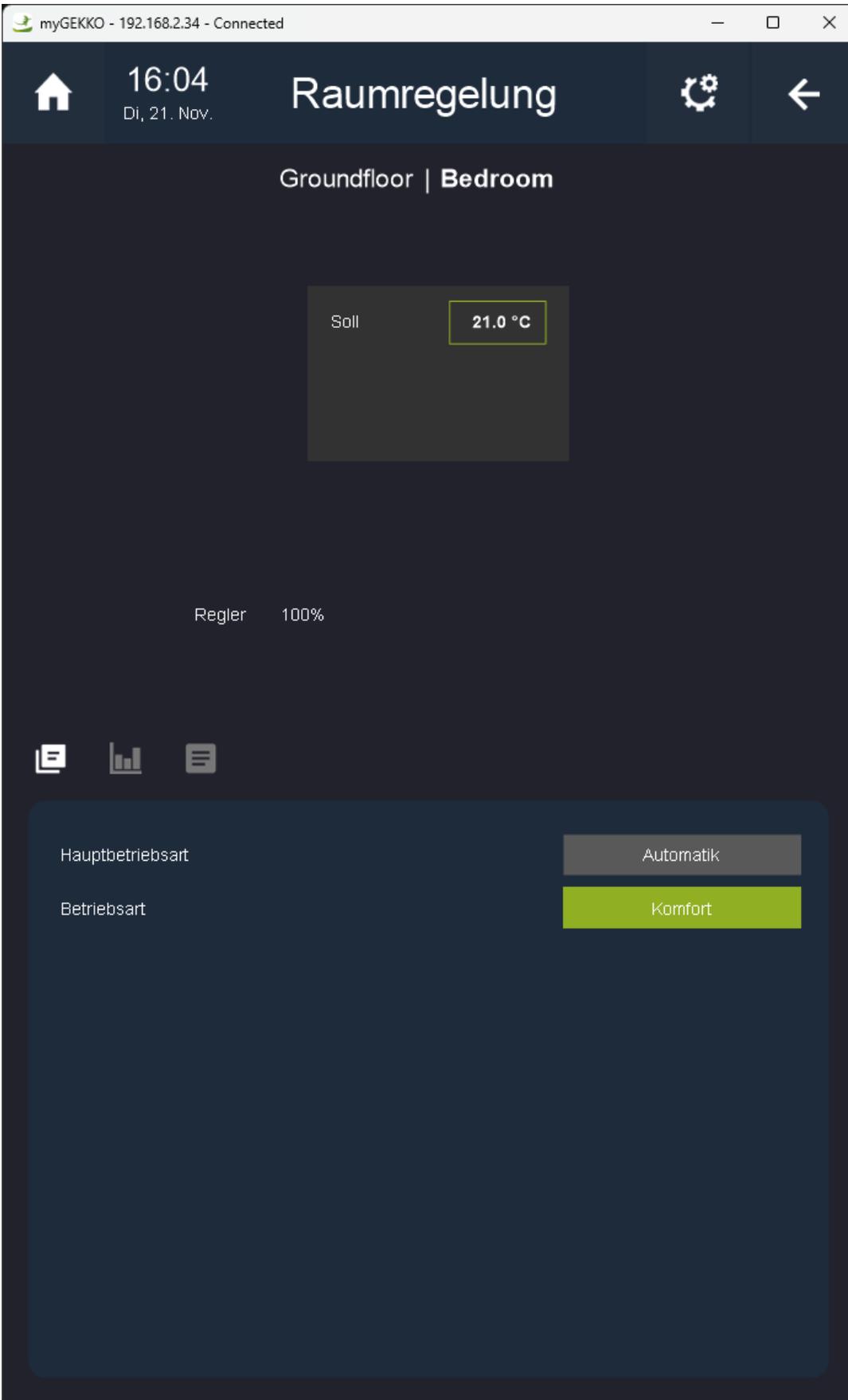
Groundfloor | **Bedroom**

Soll **21.0 °C**

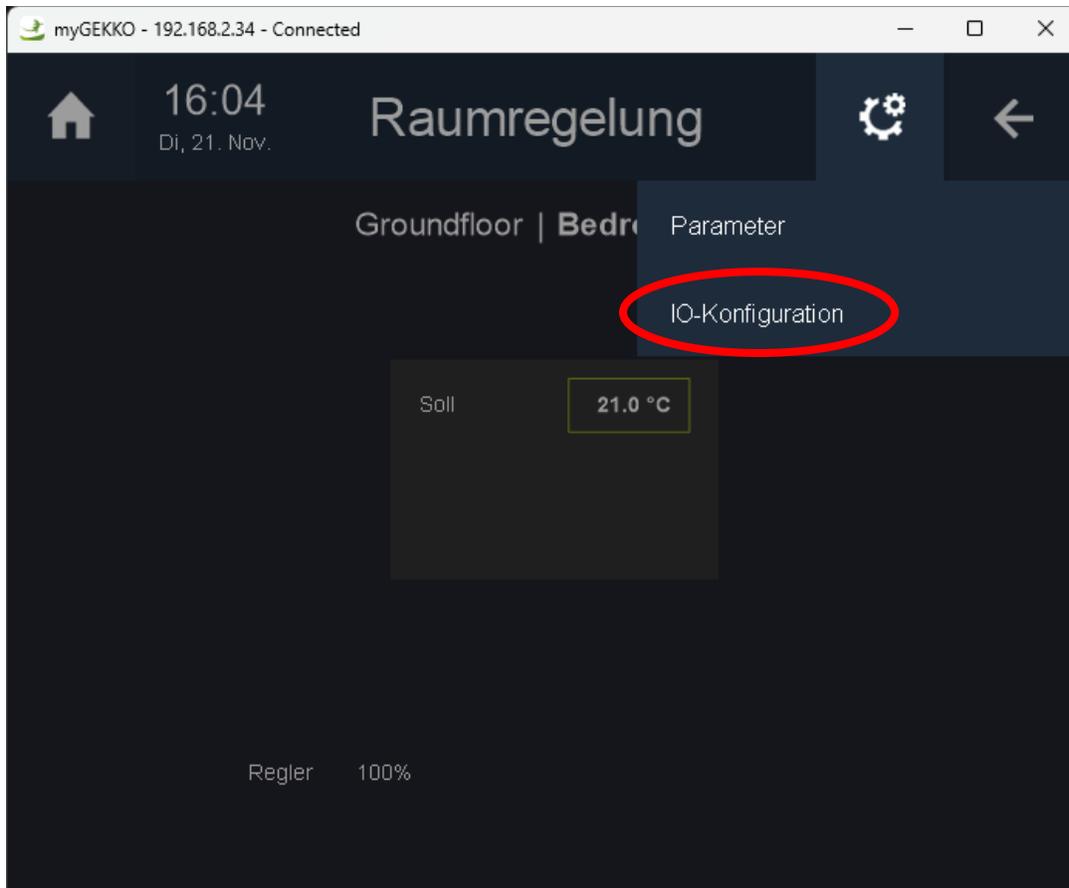
Regler 100%

Hauptbetriebsart **Automatik**

Betriebsart **Komfort**

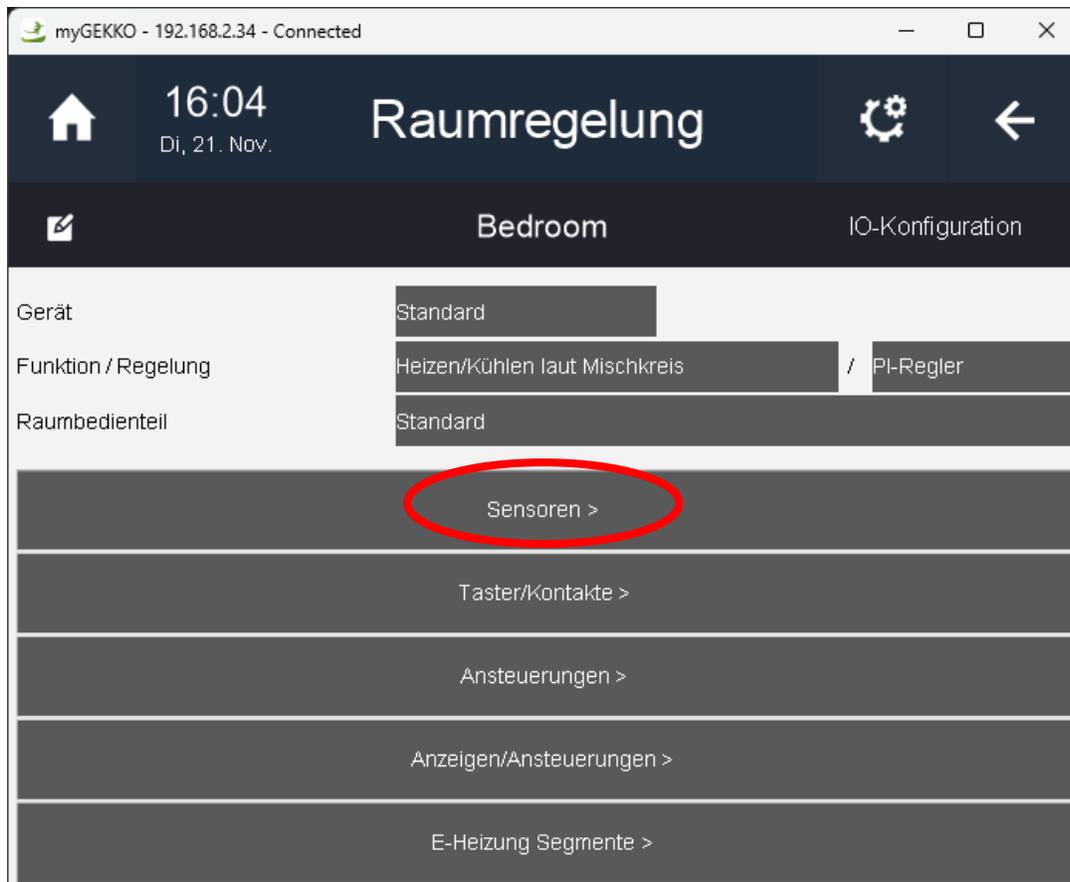


If we want to use the data provided by the MQTT sensor which we just included in the MQTT IO Station we need to link the IO signals of the sensor with the IO variables of the system element. To do that, please click on the “Configuration” button located on the top right corner of the screen. In the small popup that will appear, please click on the “IO configuration” option to open the IO manager.



In the new screen, please click on the button “Sensors”. Since we want to get the data from the temperature sensor.

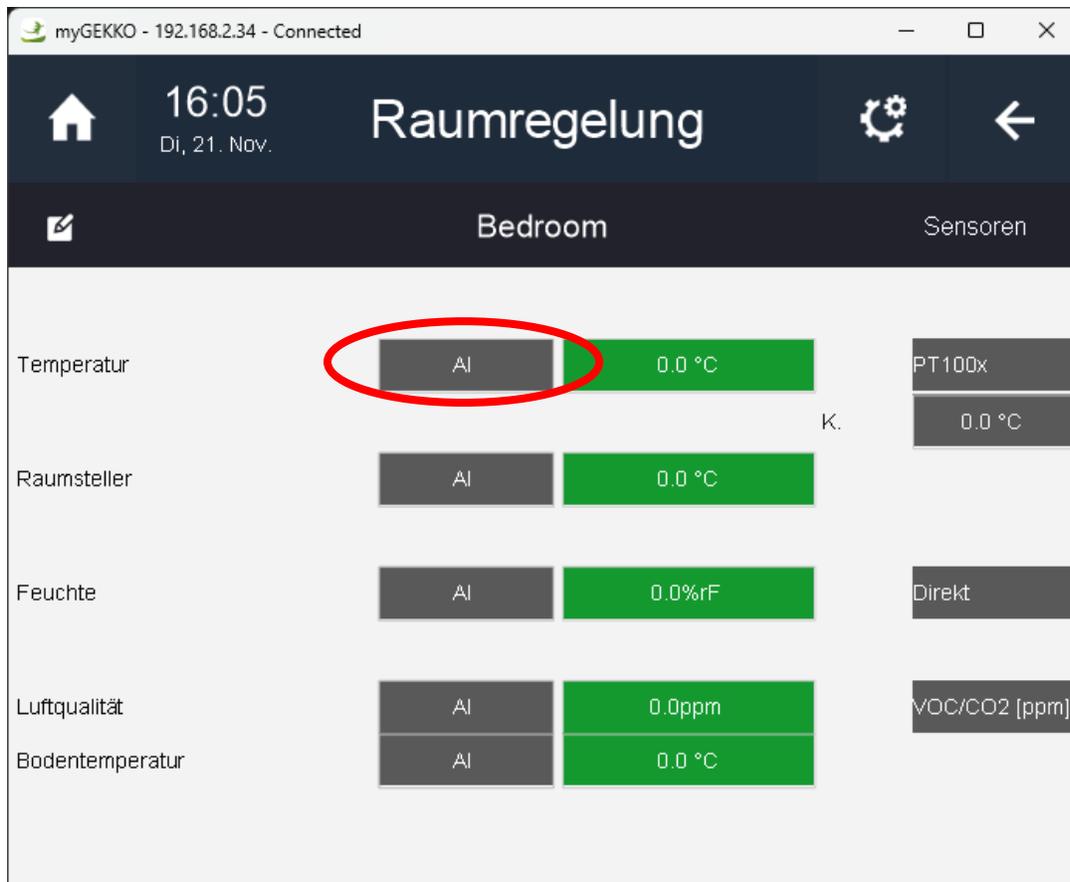




Then, a new screen will be shown with a list of input signals which can be obtained from sensors, like “Temperature”, “Humidity”, “Air Quality”, etc. We can know that those signals are input signals because they all show the letters “AI” inside a button, which means “Analog Input”. In case that the signal is an output, it will show “AO”, which means “Analog Output”.

Next step is to click on the “AI” button associated with the “Temperature” IO signal:





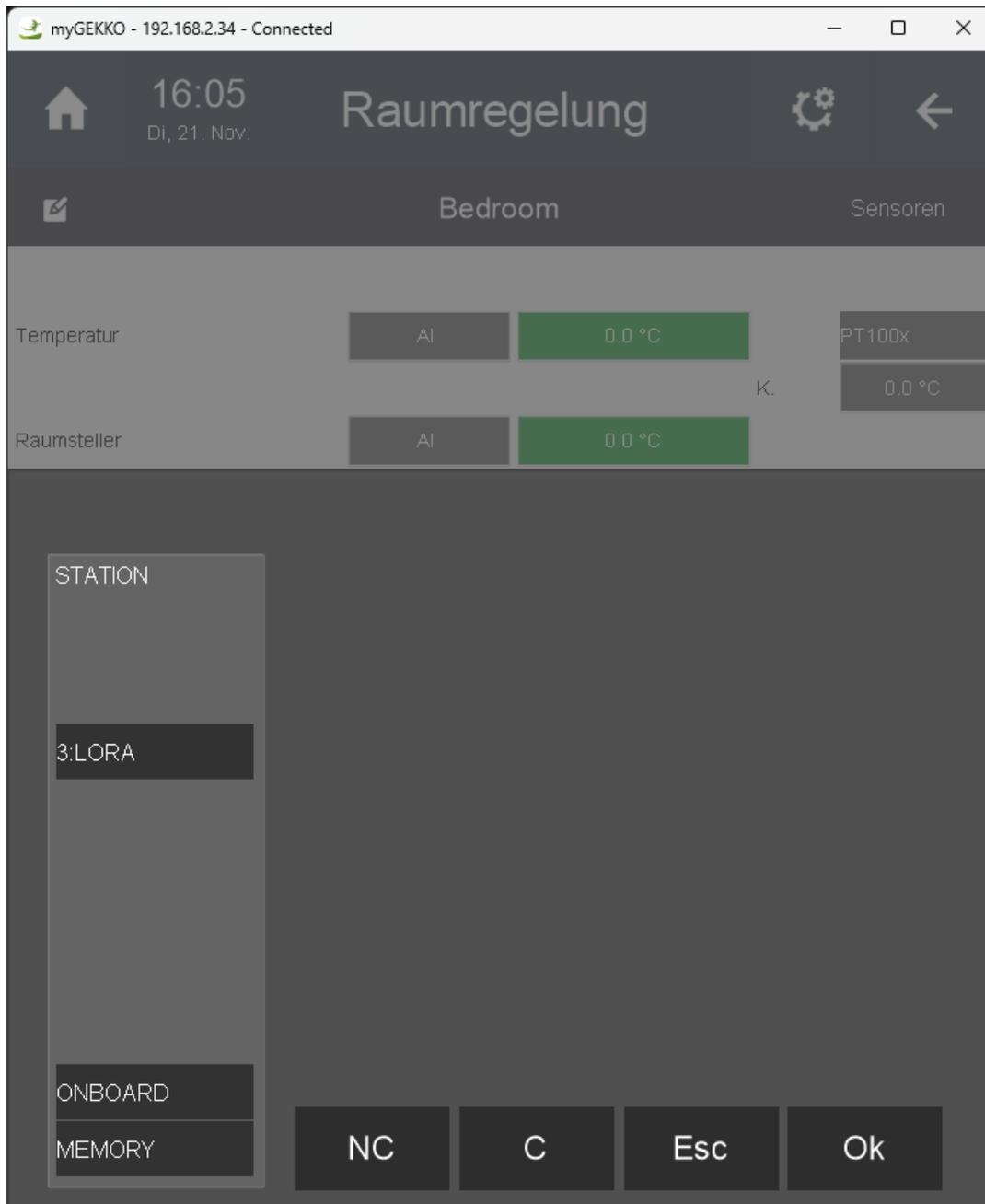
A popup screen will appear, which can be split into three different columns:

- The IO Stations list: it shows the list of available IO Stations, where the user can select the IO Station where the target device was included.
- The device list: it shows the list of available devices that are connected to the IO Station selected in the previous column.
- The IO signals list: it shows the list of available IO signals that the device selected before can provide. **NOTE: if in the IO manager it was written "AI", only input signals will be shown here. On the other hand, if in the IO manager it was written "AO", only output signals will be shown.**

At the beginning, only the IO Station list is shown. The rest of the columns are dynamically shown according to what the user selects.

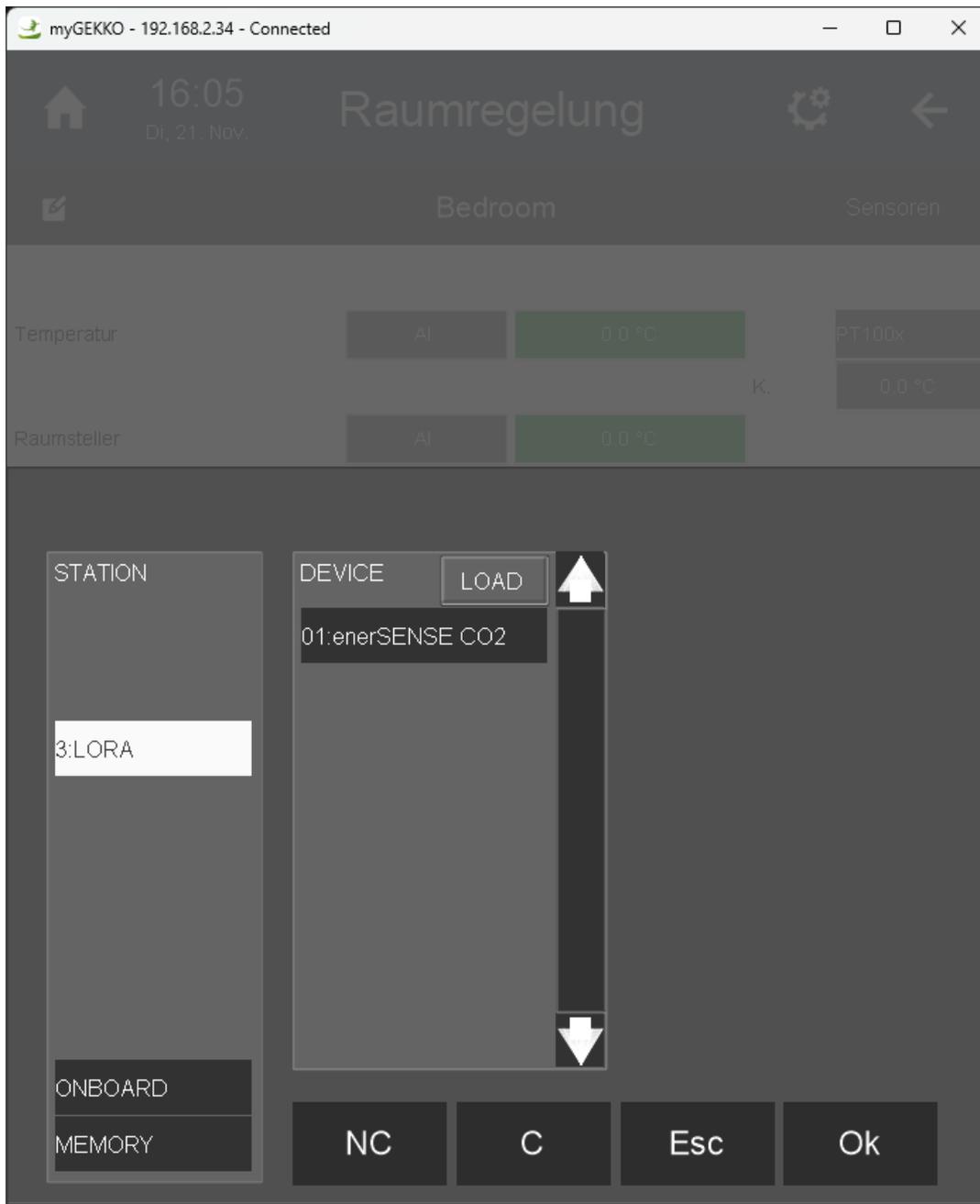
Therefore, in the IO Stations list, we must select the MQTT IO station which was configured before. In our case, the IO Station number 3. Click on it to move forward:





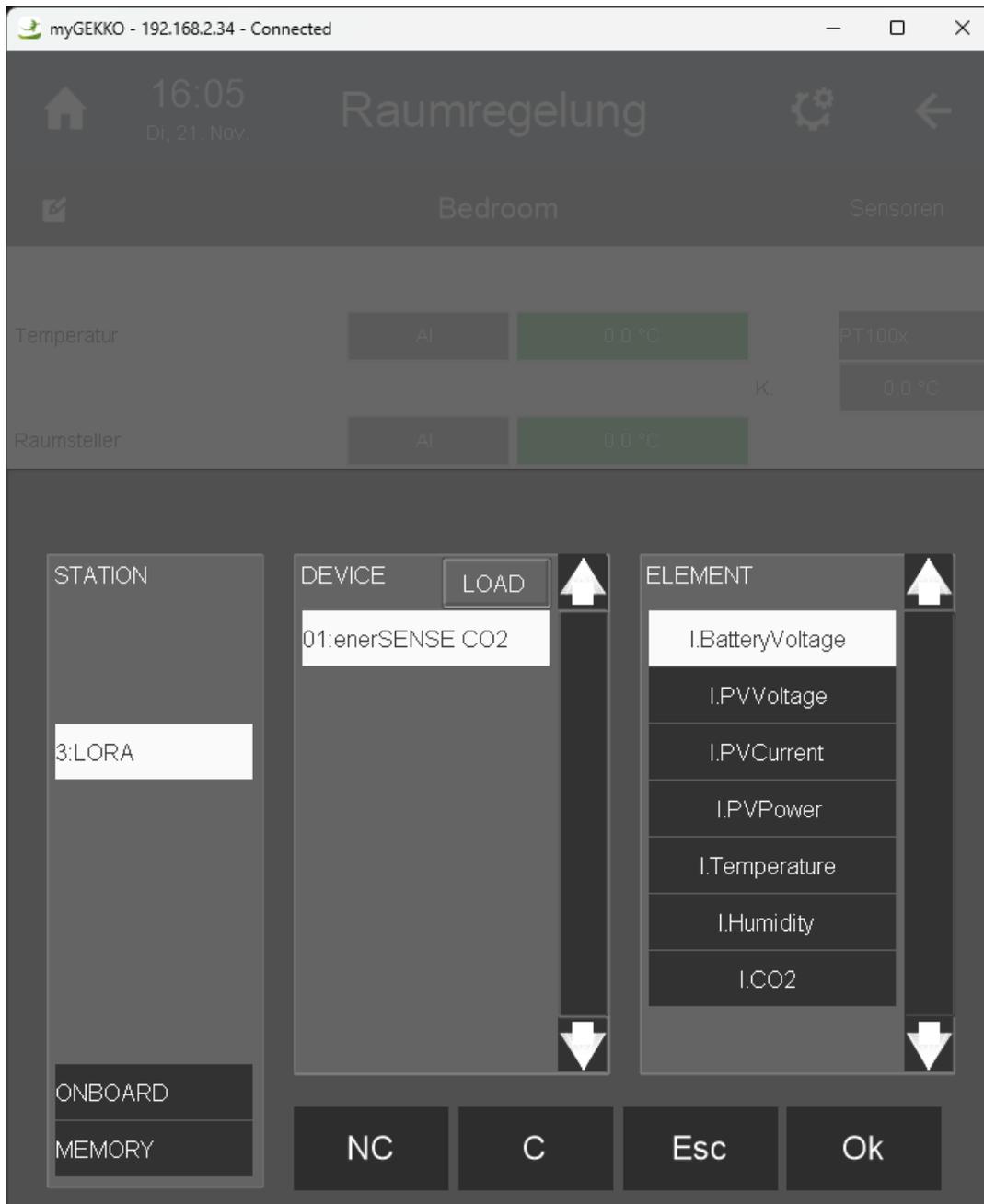
After selecting the IO Station, the device list is shown. Only one device is listed since we only included one device. Then, we must click on the device to see the input signals that it is providing us. **NOTE:** we are always talking from the point of view of the myGEKKO controller. When we say "input signal", it means a signal/data that is being received by the myGEKKO controller from an external source. However, for the device point of view, it will be an output.





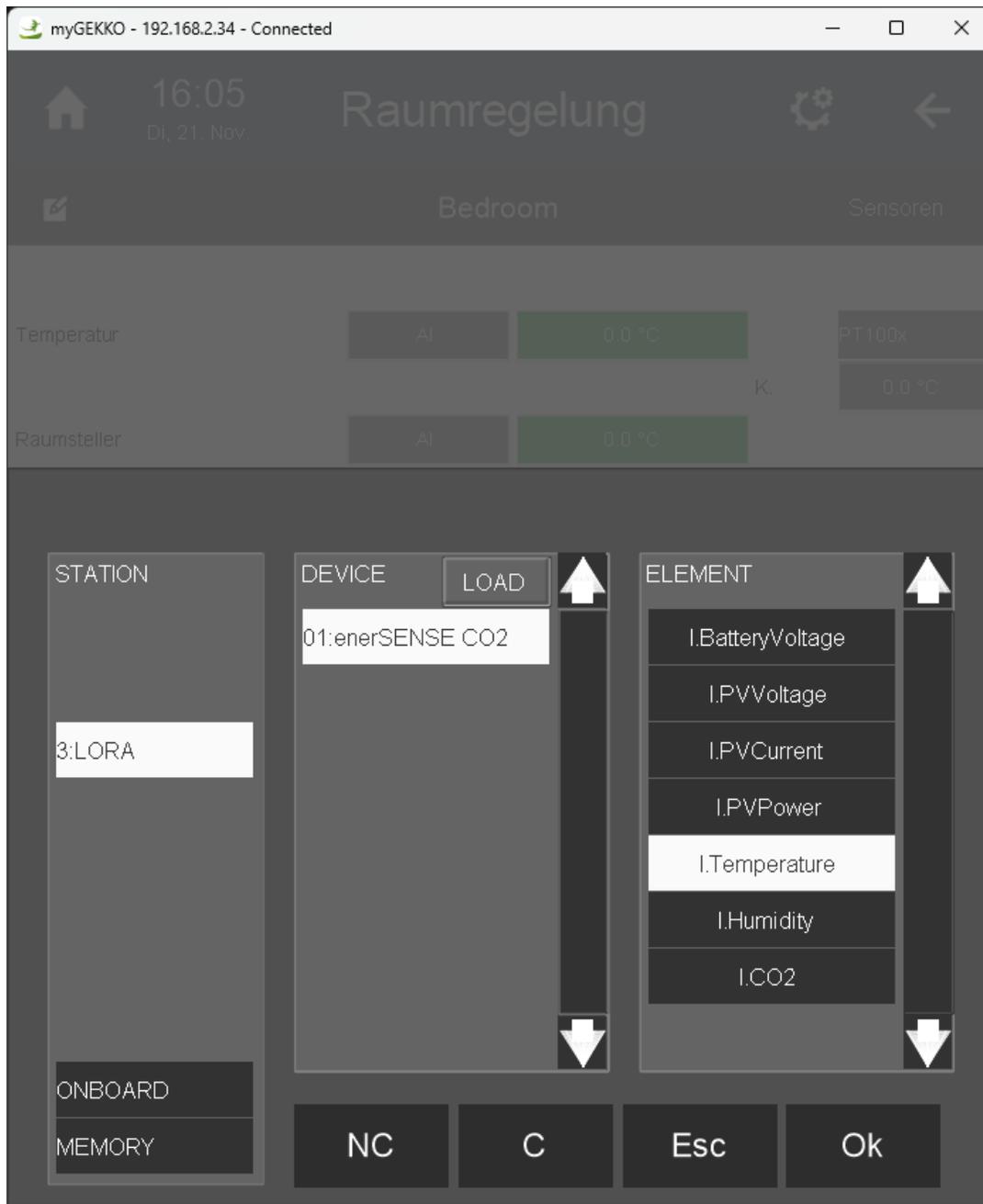
Finally, the list of input signals is shown. Please click on the target input signal, which in our case is the "***I. Temperature***".





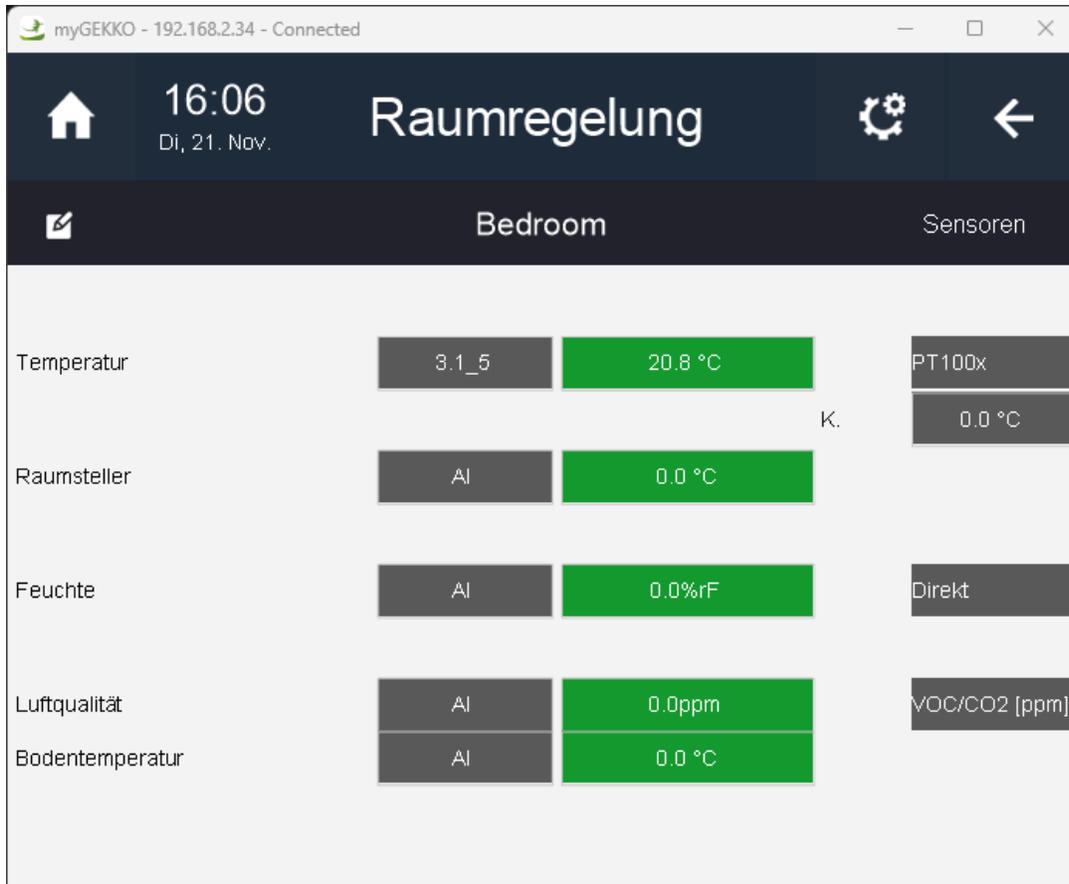
Note that the selected signal has a white background to clearly show the user what was its selection. Once we are sure that we did it good, please click on the “Ok” button to confirm the selection.





At this point, the selection button of the "Temperature" signal change from "AI" to "3.1_5", which means that the selected signal belongs to the 3rd IO Station, 1st device, 5th position. In addition, the value changed from 0.0°C to 20.8°C, which is the first value sent by the sensor. **NOTE: when a signal is selected, it takes the null value for a short period of time, to then change to the by default value, set by the myGEKKO controller. In case of the temperature, it is 20°C. This value will remain until a real value is sent by the sensor. The reason behind this is to avoid the raise of alarms while we wait for a real value.**





Please click on the “Back” button (left arrow located at the top right corner of the screen) to go back to the room control screen. Back there, now we can see the sensory information from the temperature sensor.

The valve position is now set to 0% since the measured temperature is 20.8°C and the setpoint is set to 21°C. Therefore, the controller thinks that it is not needed to open the valve.



myGEKKO - 192.168.2.34 - Connected

16:07
Di, 21. Nov.

Raumregelung

Groundfloor | **Bedroom**

Soll	21.0 °C
Ist	20.8 °C

Regler 0%

Hauptbetriebsart: Automatik

Betriebsart: **Komfort**



At this point, we could repeat the same process to set get humidity or the air quality within the room control system element.

In general, the process described above is valid for any sensor that we may need to use. It will depend on the selected sensor and the system element to which the sensor's signals must be linked.

A list of the supported MQTT sensors can be found here. This document explains, device by device, the device's IO signals, their default values, ranges, etc. Summarizing, all we could need to add and use a device along with the myGEKKO controller.

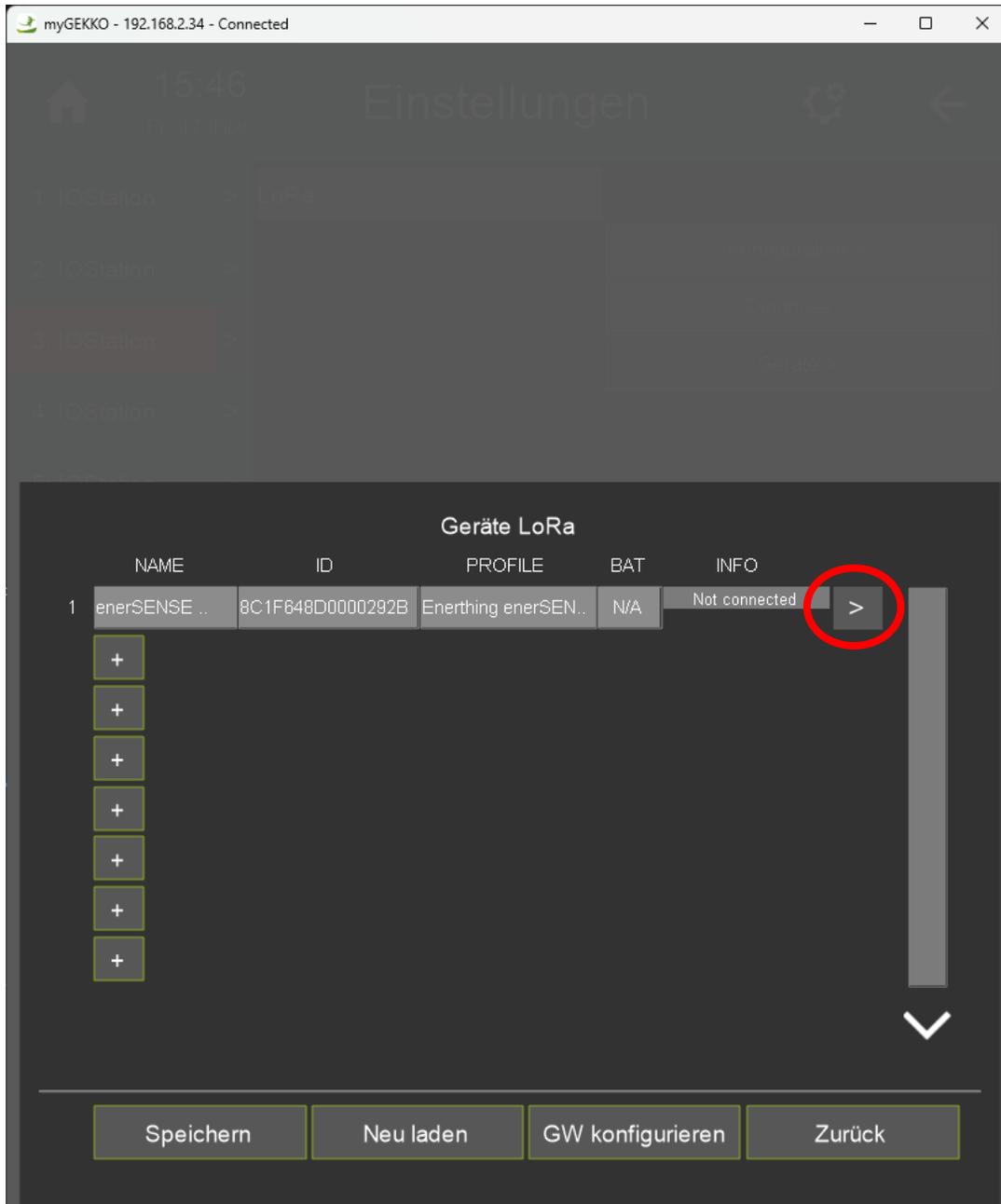
For any suggestion related to the supported devices, like the addition of a new device, please let the support team know.

Modifying parameters in an already existing MQTT device

It could happen that, after adding a new device, we discover that one of the parameters was wrong, or simply we do not like the name. In that case, it would be nice to know how to change the parameters of a device from the device list.

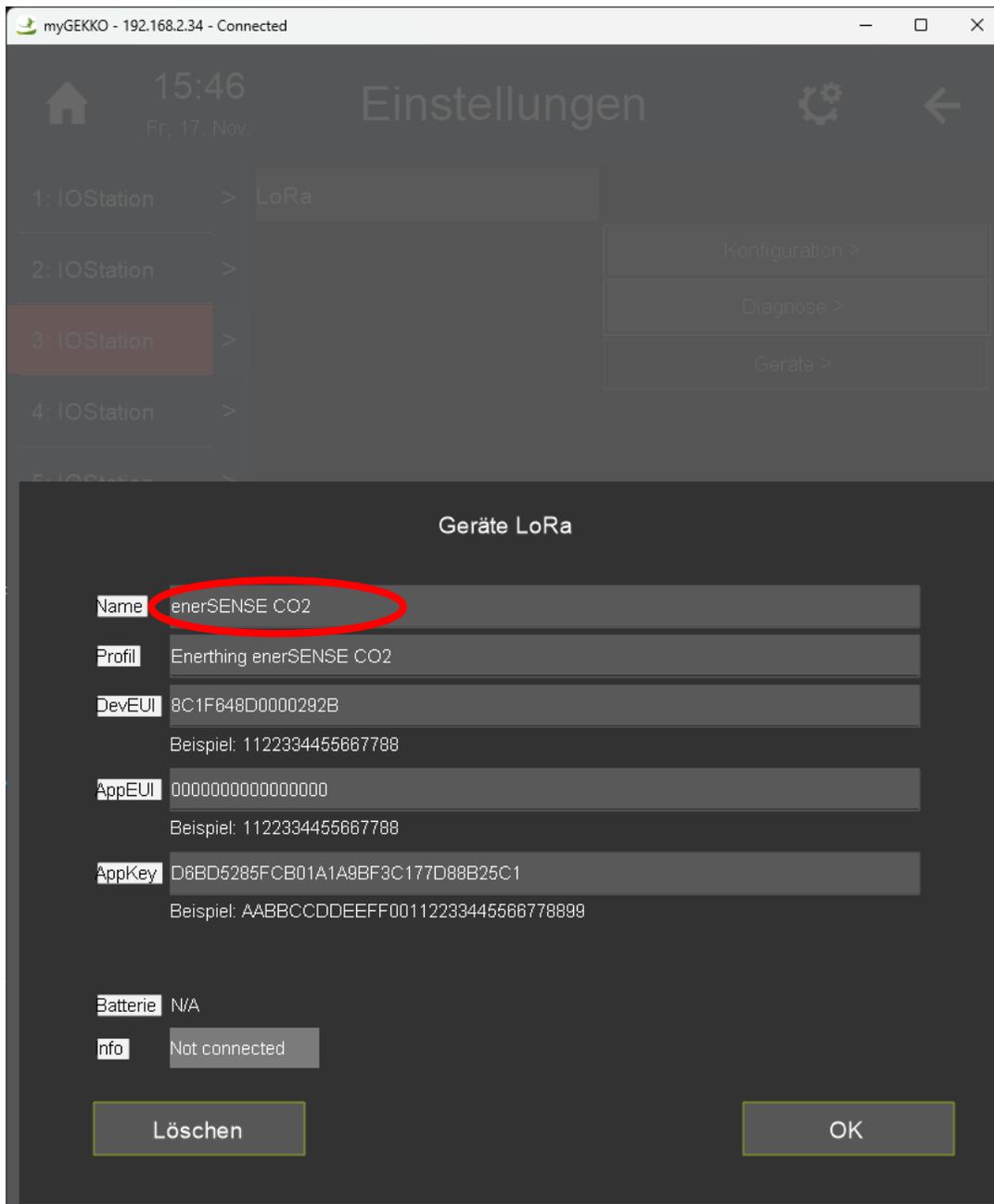
Let's assume that we are already in the MQTT IO-Station's device list's screen. After identifying the device which has to be modified, we have to click on the ">" button located at the right side of the screen, in the same row of the device.





A popup screen will be shown containing the device's information. To modify one of the parameters, we just need to click on the field that we want to modify. For example, the name:





ADD PICTURE OF THE POPUP WITH THE OLD NAME

PICTURE OF THE POPUP WITHOUT THE TEXT

PICTURE OF THE POPUP WITH THE NEW TEXT



PICTURE OF THE DEVICE INFO WITH THE NEW NAME

PICTURE OF THE DEVICE LIST WITH THE NEW NAME

Removing existing devices

myGEKKO - 192.168.2.34 - Connected

15:46
Einstellungen

1. IOStation ...
2. IOStation ...
3. IOStation ...
4. IOStation ...

Geräte LoRa

	NAME	ID	PROFILE	BAT	INFO	
1	enerSENSE ...	8C1F648D0000292B	Enerthing enerSEN...	N/A	Not connected	>

+
+
+
+
+
+
+

Speichern Neu laden GW konfigurieren Zurück



myGEKKO - 192.168.2.34 - Connected

15:46
Fr, 17. Nov

Einstellungen

1: IOStation > LoRa

2: IOStation >

3: IOStation >

4: IOStation >

5: IOStation >

Konfiguration >

Diagnose >

Geräte >

Geräte LoRa

Name enerSENSE CO2

Profil Enerthing enerSENSE CO2

DevEUI 8C1F648D0000292B
Beispiel: 1122334455667788

AppEUI 0000000000000000
Beispiel: 1122334455667788

AppKey D6BD5285FCB01A1A9BF3C177D88B25C1
Beispiel: AABCCDDEEFF00112233445566778899

Batterie N/A

Info Not connected

Löschen

OK



myGEKKO - 192.168.2.34 - Connected

15:46
Fr, 17. Nov.

Einstellungen

1: IOStation > LoRa

2: IOStation >

3: IOStation >

4: IOStation >

5: IOStation >

Konfiguration >

Diagnose >

Geräte >

Geräte LoRa

NAME	ID	PROFILE	BAT	INFO
+				
+				
+				
+				
+				
+				
+				
+				

Speichern Neu laden GW konfigurieren Zurück



Q&As

- *"I enabled and configured the MQTT IO Station, but the connection is not established. What is wrong?"*
 - Check that the MQTT Broker is connected to the power supply.
 - Check that the power supply button is pressed.
 - Check that the MQTT Broker is physically connected to the myGEKKO controller via Ethernet.
 - Check that the IPv4 address of the Broker in the configuration screen matches the IPv4 address provided with the MQTT Broker.
 - Check that the network configuration of the Ethernet port in the myGEKKO controller has not been changed and matches the original configuration.
- *"I unboxed my new device, connected the battery, and switched on. However, I did not receive any data at the myGEKKO controller".*
 - Check that you installed the batteries correctly.
 - Check that you pressed the correct button. Sometimes there are more than one.
 - Check that the device is within the MQTTWAN coverage range or that the signal is powerful enough.
 - Check that the Broker is connected to the myGEKKO controller and powered on.
 - If the device's manufacturer provides a mobile app, please use it to connect to the device and check what is the internal status of the device.



Useful links and bibliography



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