LOXONE

Datum: 2024-06-25
Ersteller: Stoll

These commissioning instructions serve to illustrate each step of the integration of the gateway.

The basis of this information was collected from plant integration in Germany, Bavaria.

This is a detached house with a Buderus Logamax Plus GB192-15 with integrated hot water storage, a heating circuit and a solar thermal system.

Logamax Plus GB192-15 (Boiler)

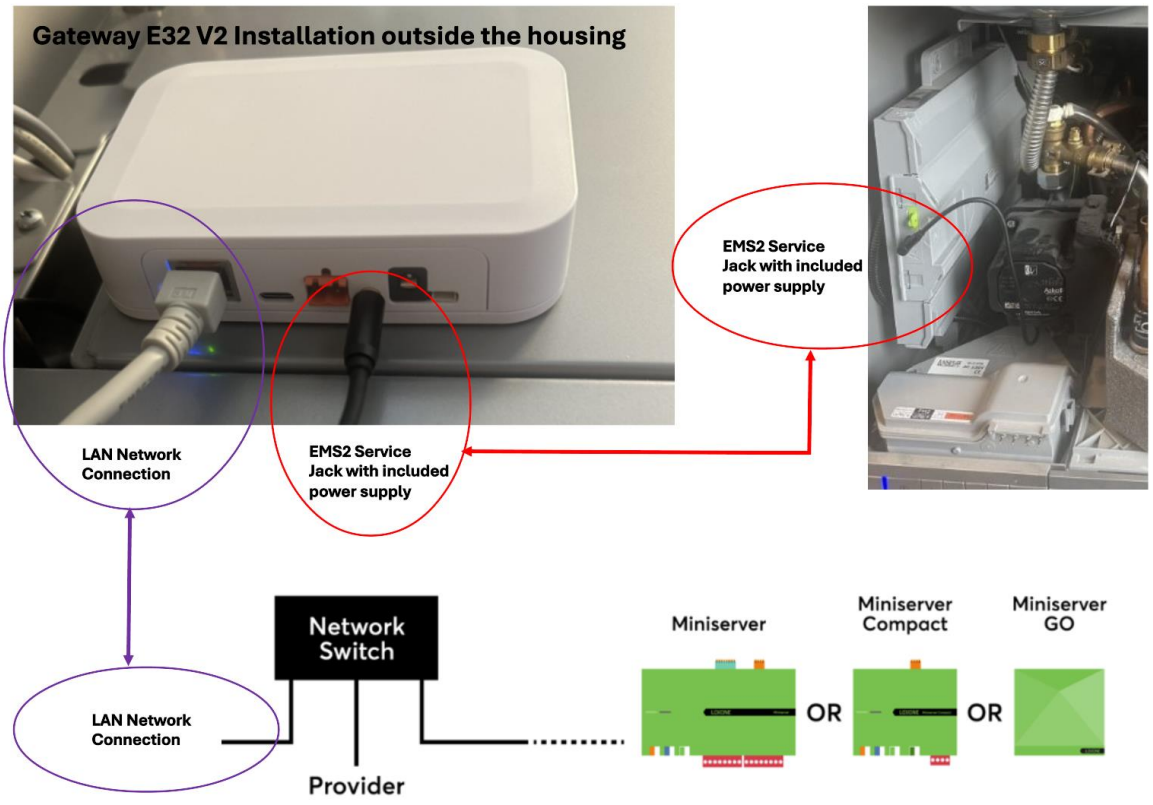
RC310 (Thermostat):

BBQElectronics has very good documentation:

- How does it work?
- Choosing between Gateways
- Compatibility List
- List of Parameters/Datapoints
- Manual English , Manual German , Manual Dutch
- Loxone Config Integration
- Assistance with errors during commissioning

Step 1: Gateway Installation

If possible, install the gateway on the outside of the boiler to avoid exposure to high temperatures and possible splashing water.



- Wifi is also possible,but should only be used if cable pulling is difficult.
- If your boiler does not have an EMS service socket or you want to install the EMS gateway elsewhere, you can also connect the EMS gateway to the EMS screw terminal in the boiler in parallel with the thermostat. In this case, the EMS gateway must be supplied with power via the optional external 12 V power supply unit.

- So if your boiler or heat pump has a service socket, you will need the optional EMS service cable. If your boiler or heat pump does not have a service socket or you want to use it now, you will need the optional power supply unit and an EMS screw terminal cable.

Important hints doing Installation and commissioning:

Switch off the boiler or heat pump. Plug the cable first into the gateway and then into the boiler or heat pump.

or the heat pump. Press the plug firmly into the plug or both sides. Switch on the boiler or heat pump.

If the gateway is connected correctly, it will start flashing slowly to indicate that it is working

and is searching for the EMS bus and the WLAN network.

Note: If you plug in or unplug the jack cable on the gateway first and not on the boiler side, it may cause a temporary short circuit of the boiler.

temporary short circuit of the boiler. It will then restart, which may result in clicking noises.

Tip: If you have a thermostat such as the RC310 and the display switches off when you connect the gateway via the service socket, swap the two wires on the thermostat.

RC310 Note: With almost all boilers, it does not matter which EMS cable you connect to which of these two connection pins, as the gateway has an internal correction circuit.

The Gateway has an internal correction circuit. However, with some boilers and, for example, if you have installed an RC310, the

the orientation does play a role. If installed incorrectly, the thermostat display will not show anything. If this is the case, simply swap

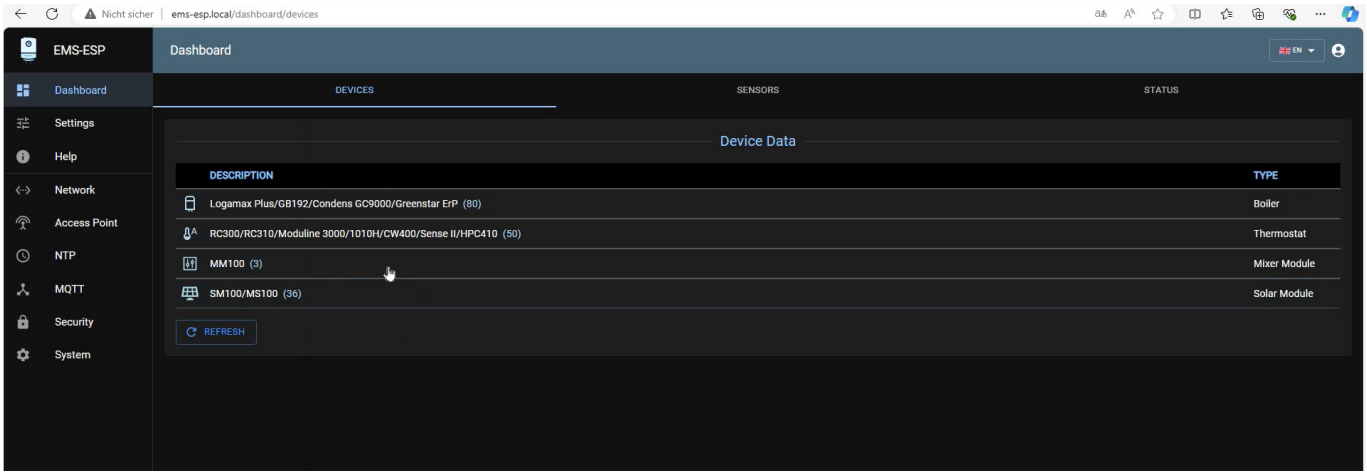
simply replace both EMS cables on the gateway (i.e. swap them, don't replace them). If this does not work,

replace the EMS cables on the thermostat.

Step 2: Gateway Commissioning

Use the integrated Webinterface of the Gateway:

With http://ems-esp.local or later with the IP Adress of the Gateway.



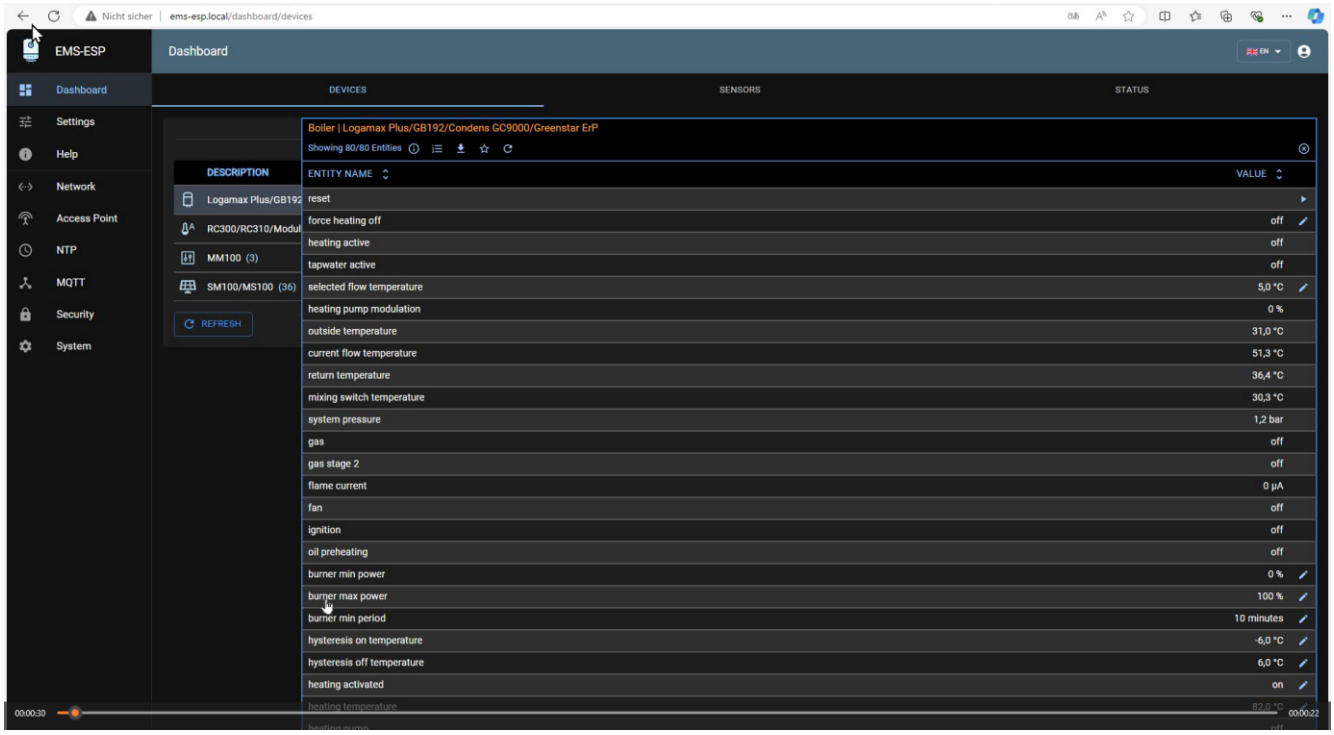
Why is the integrated Webinterface of the Gateway so important?

- To check which datapoints are available on the system, of course **this differs from system to system!**
  Each hydraulic system is individual depending of the used devices and extension modules!
  Boilers and heat pumps are identified as "Boiler”
  Control units such as the RC 310 are identified as "thermostat"
  Mixer modules such as the MM100 as "mixer"
  Solar modules such as the SM100 as "solar"
  These abbreviations are very important later in the Loxone Config and for querying the available parameters and write commands.
- Make network settings. Use a fixed IP adress.
- The bus connection between the modules and the devices can be checked and adjusted.
- Firmwareupdates & Diagnosticfunctions

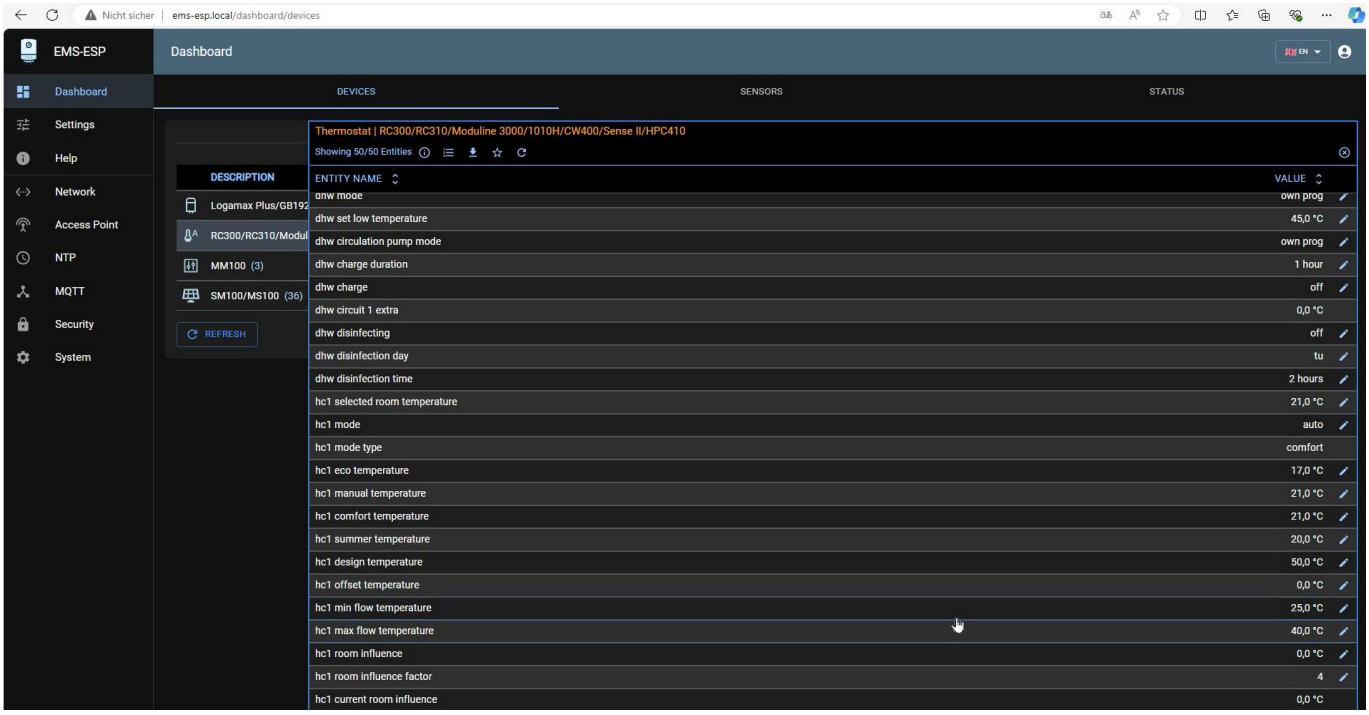
Hint:

Please note that the settings shown may also differ from device to device! This is just one example of our successful integration!

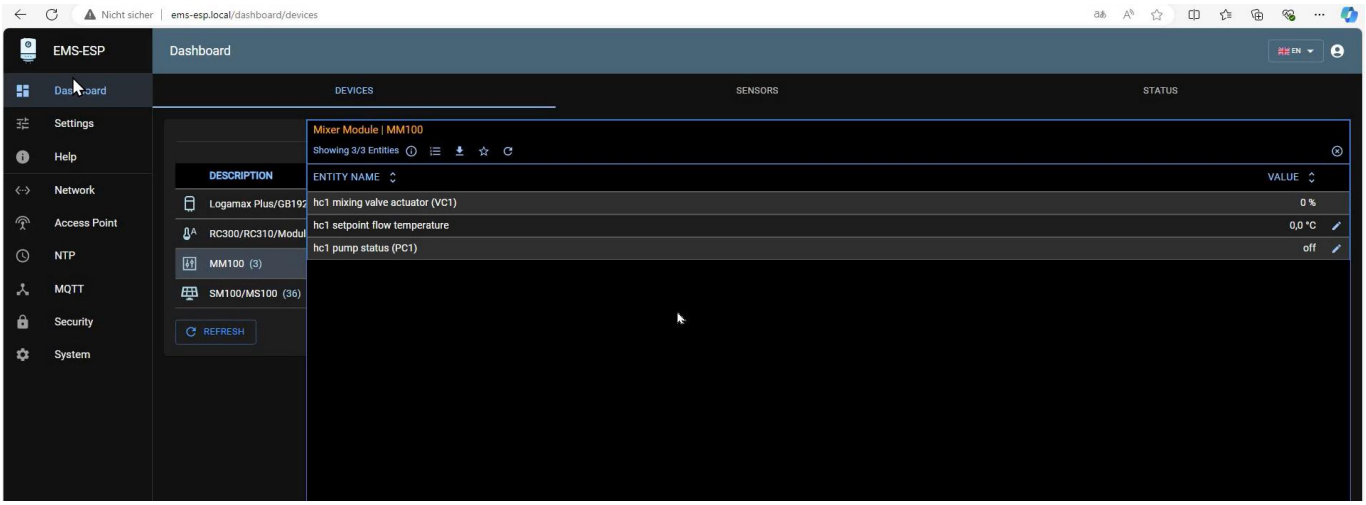
Example datapoints Boiler: (Logamax Plus GB192)



Example datapoints thermostat: (RC310)



Example datapoints mixer module: (MM100)



Example datapoints mixer module: (SM100)

LOXONE

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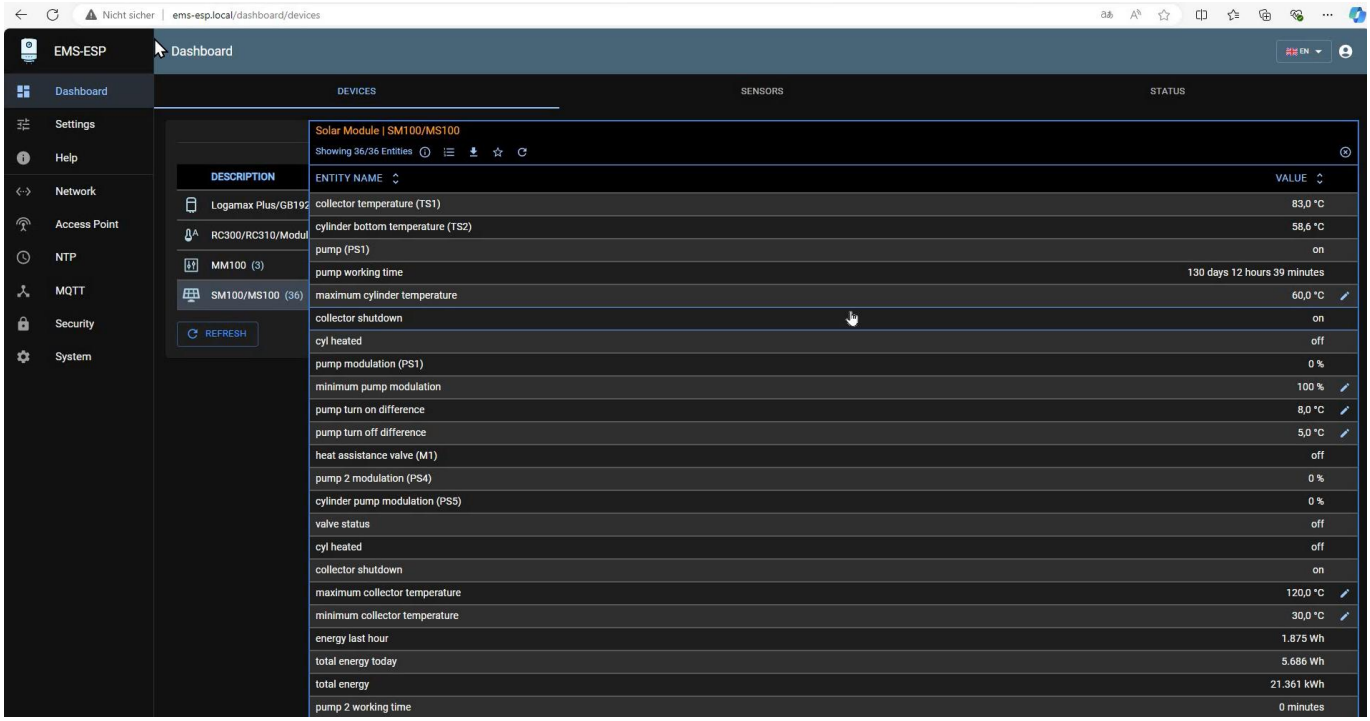
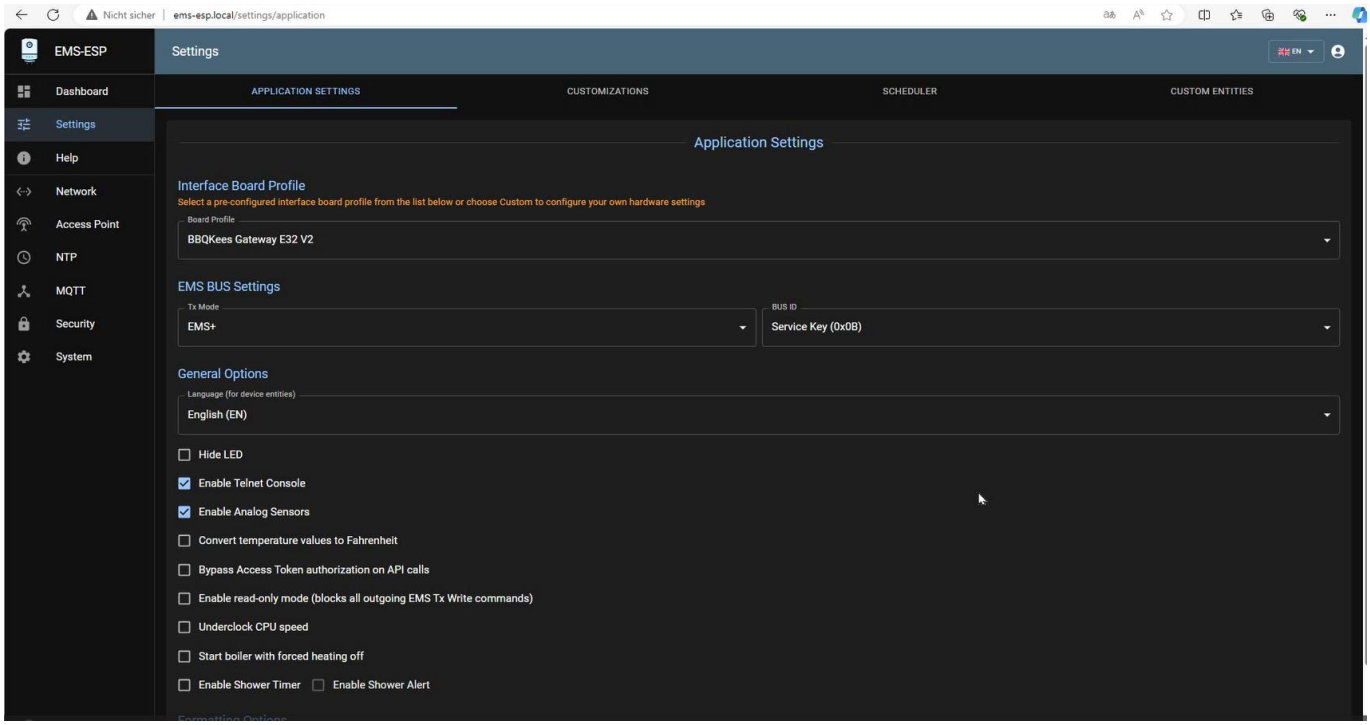


General Settings / Bus Settings:



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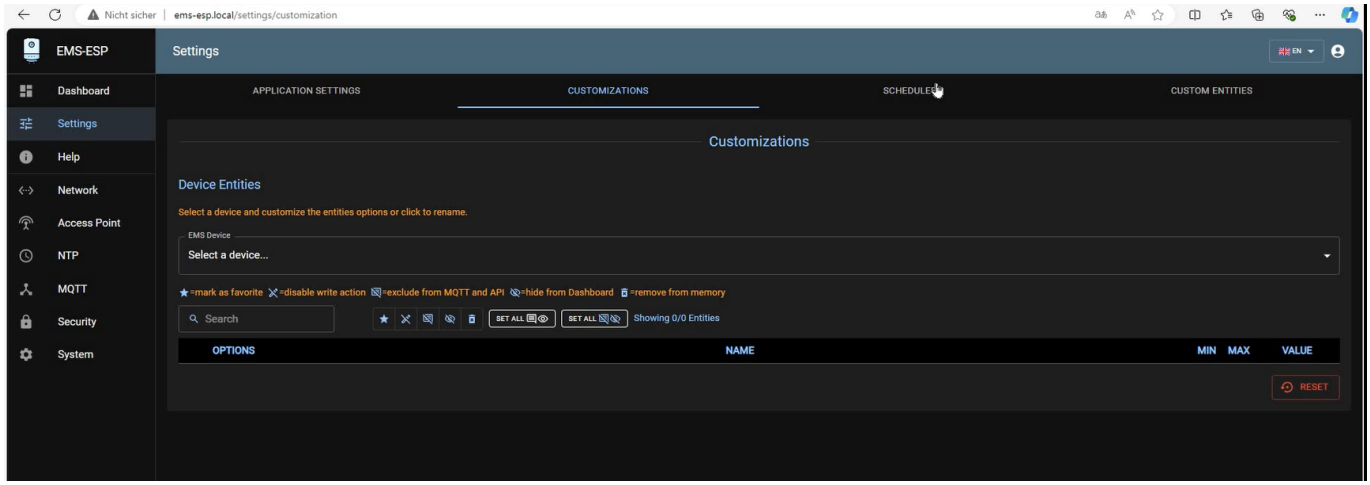

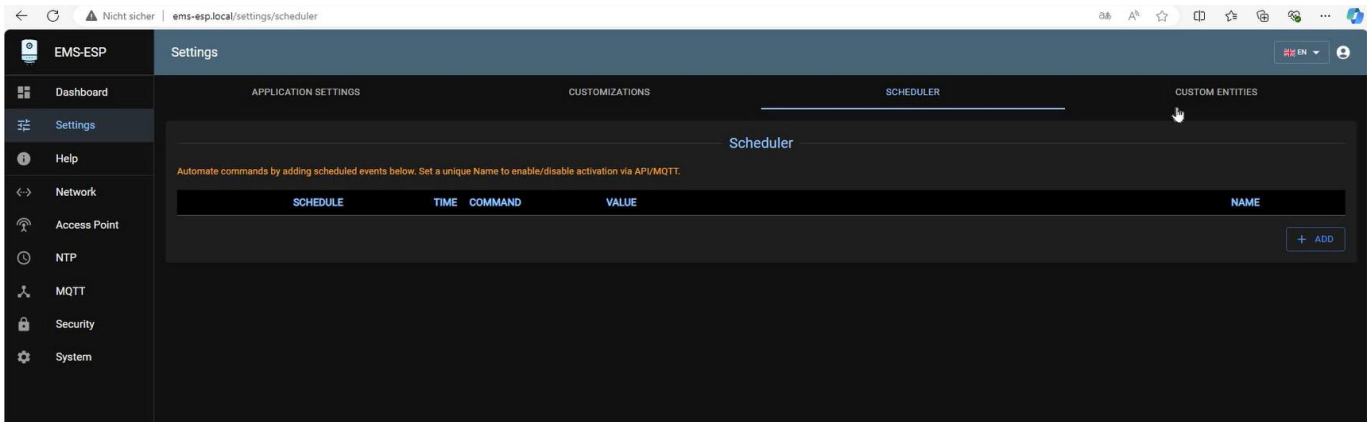

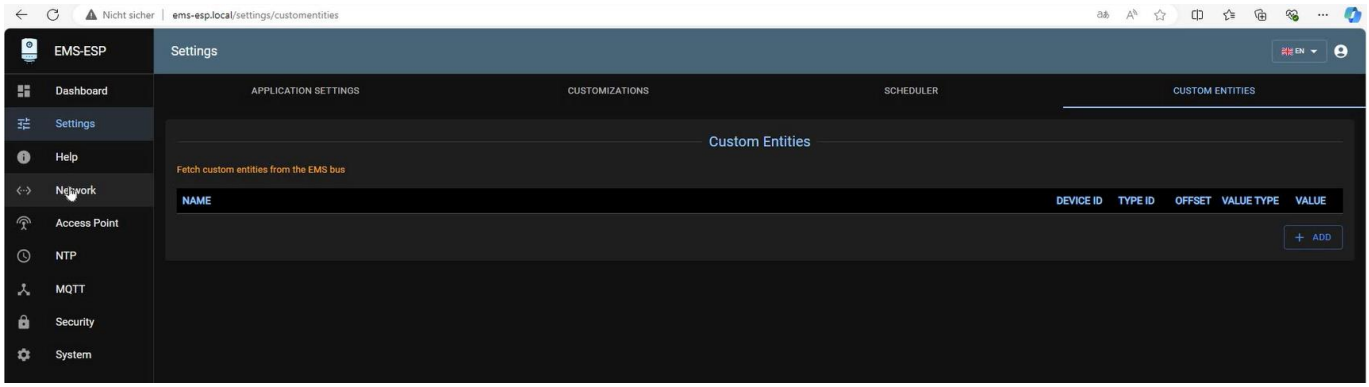

Network Settings: Very Important --> Use a Fix IP Adress Reservation in the router & the Webinterfacesettings!

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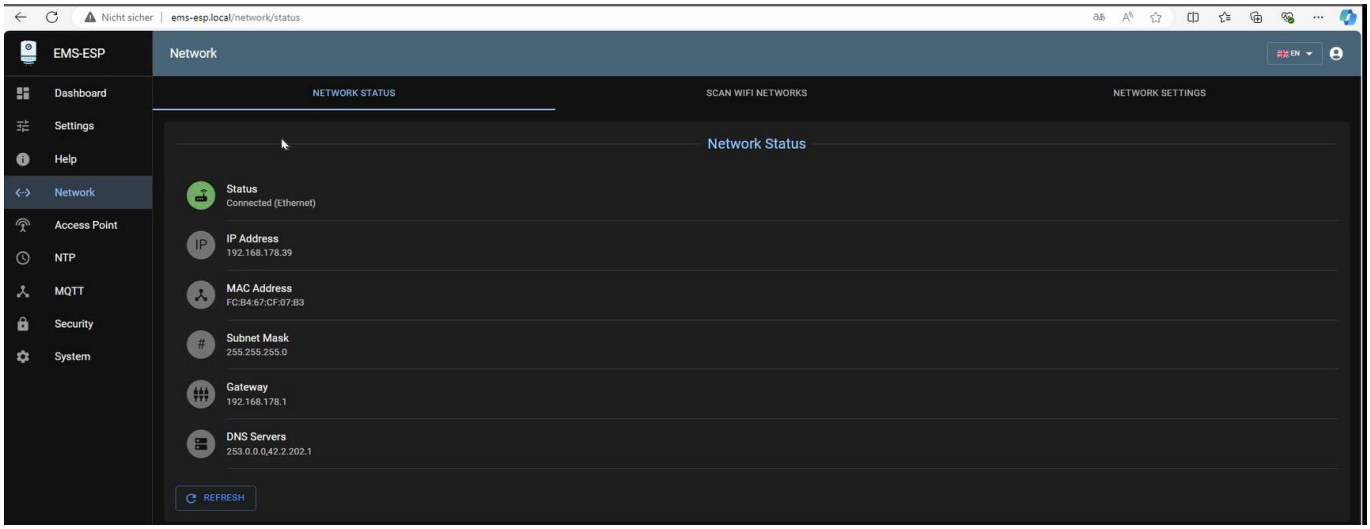
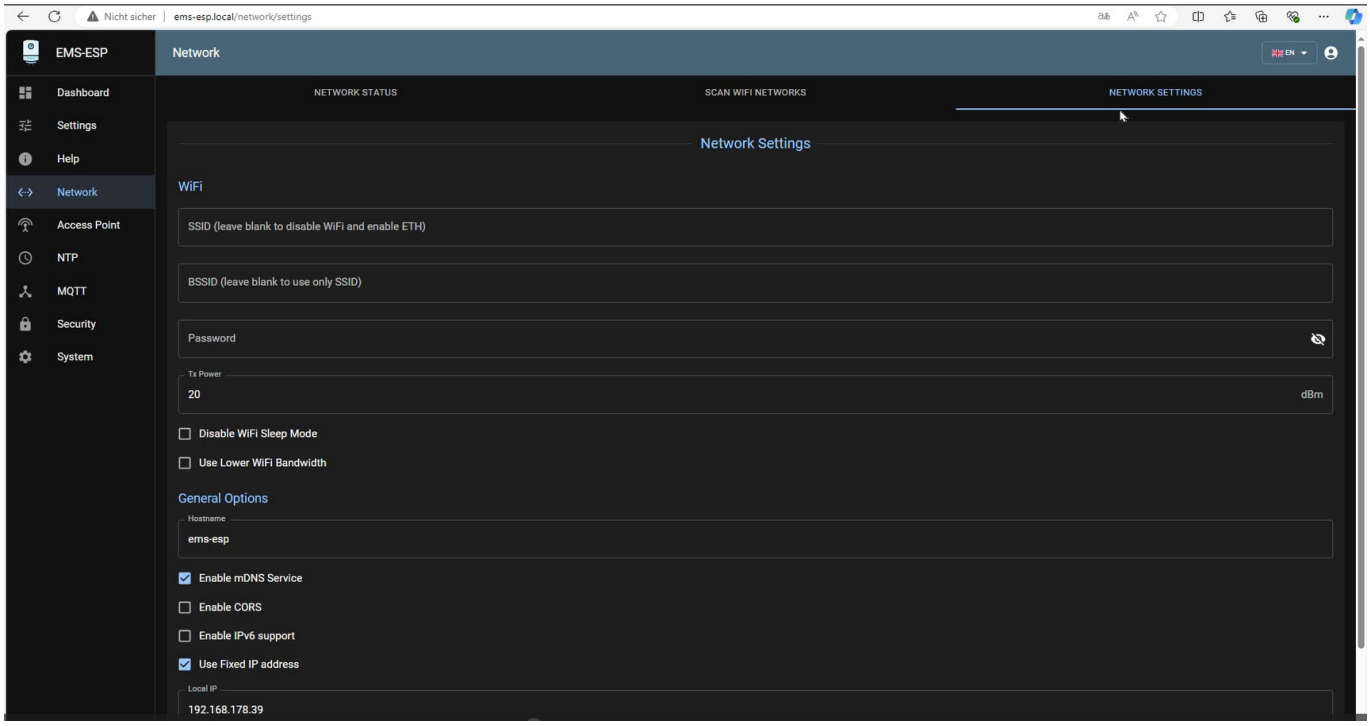
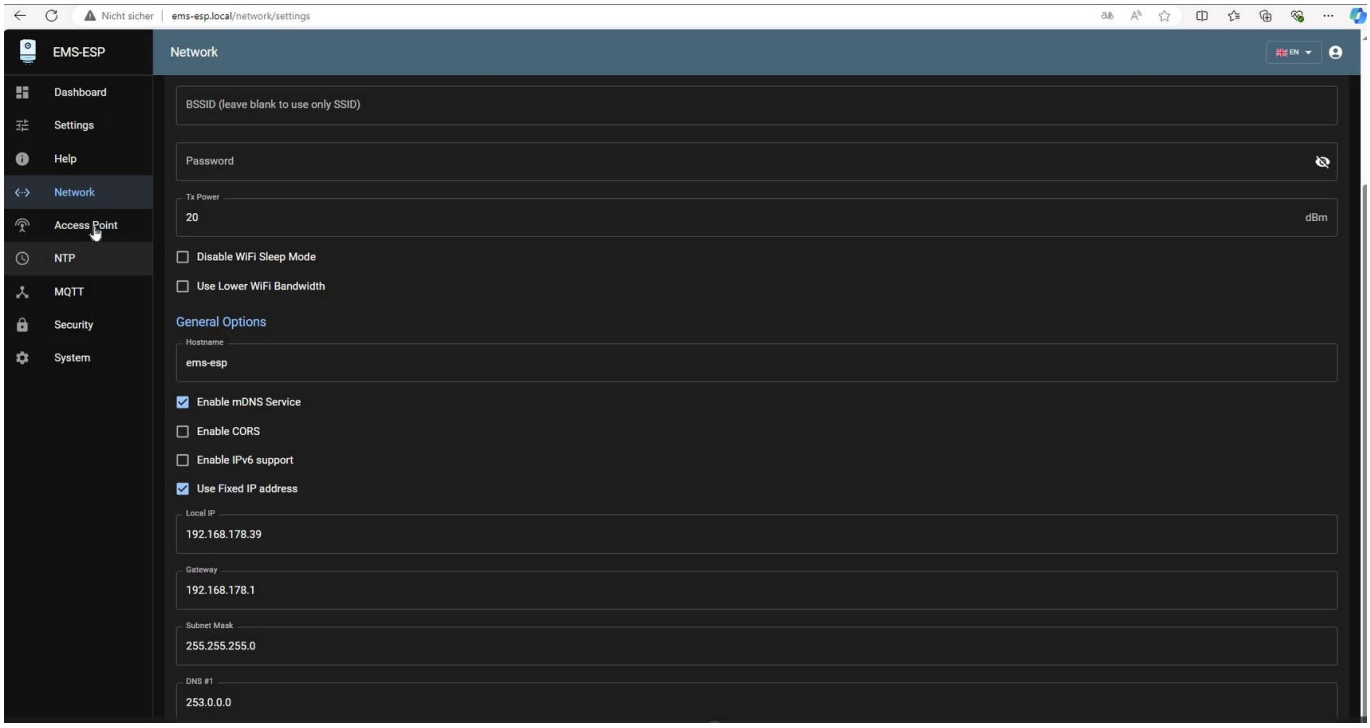
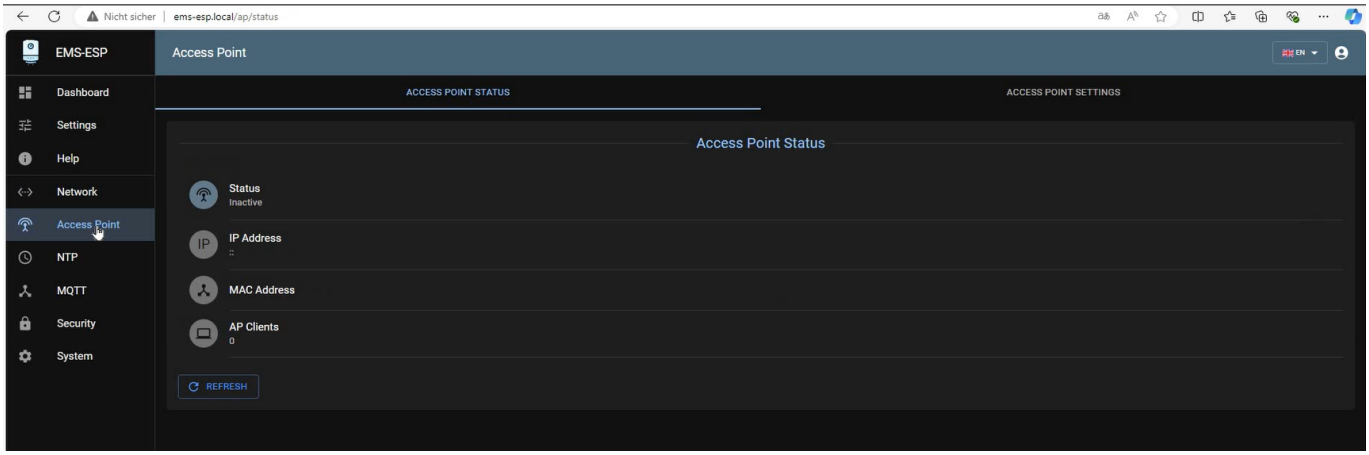


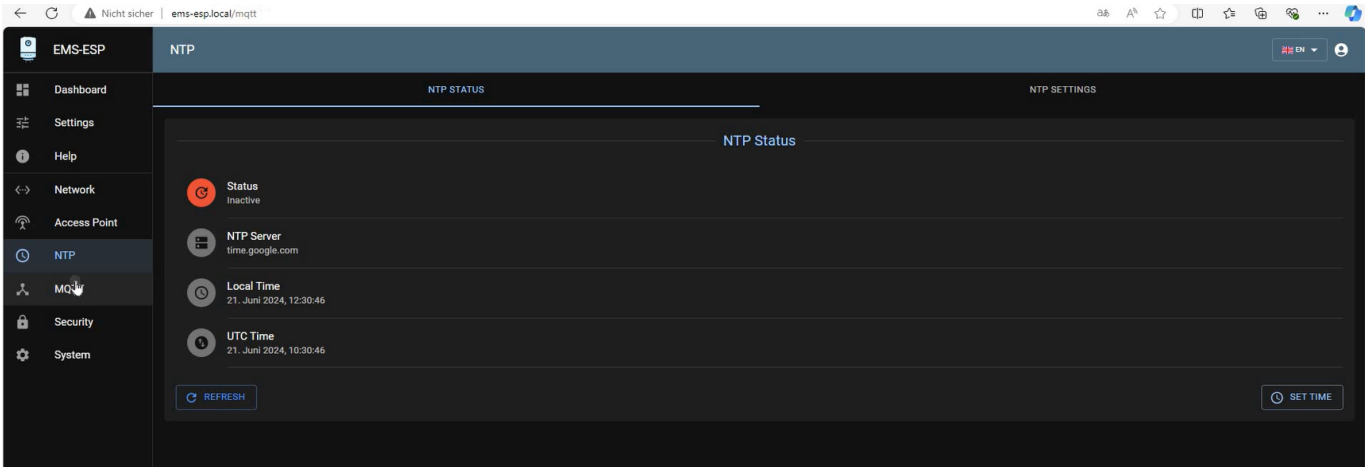




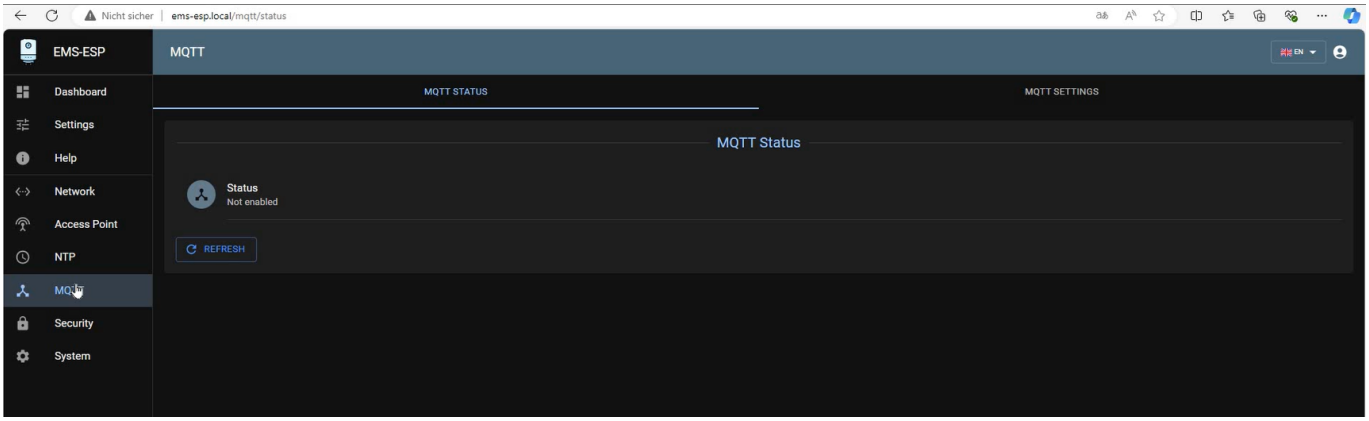
Acces Point Settings: Not necessary in our example



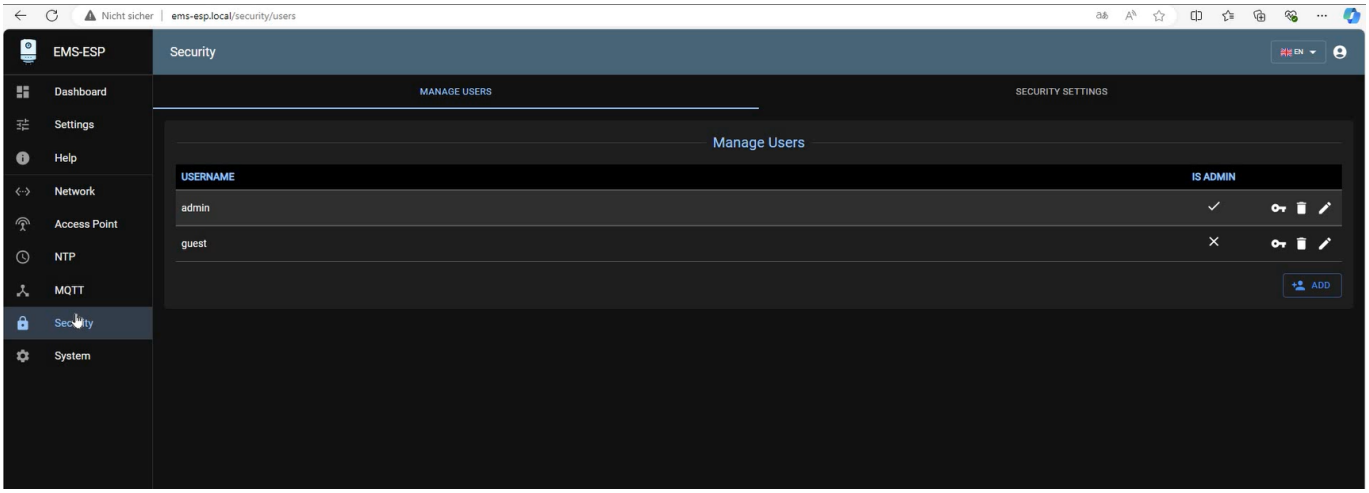
NTP Settings: Not necessary with Virtual Inputs & Outputs



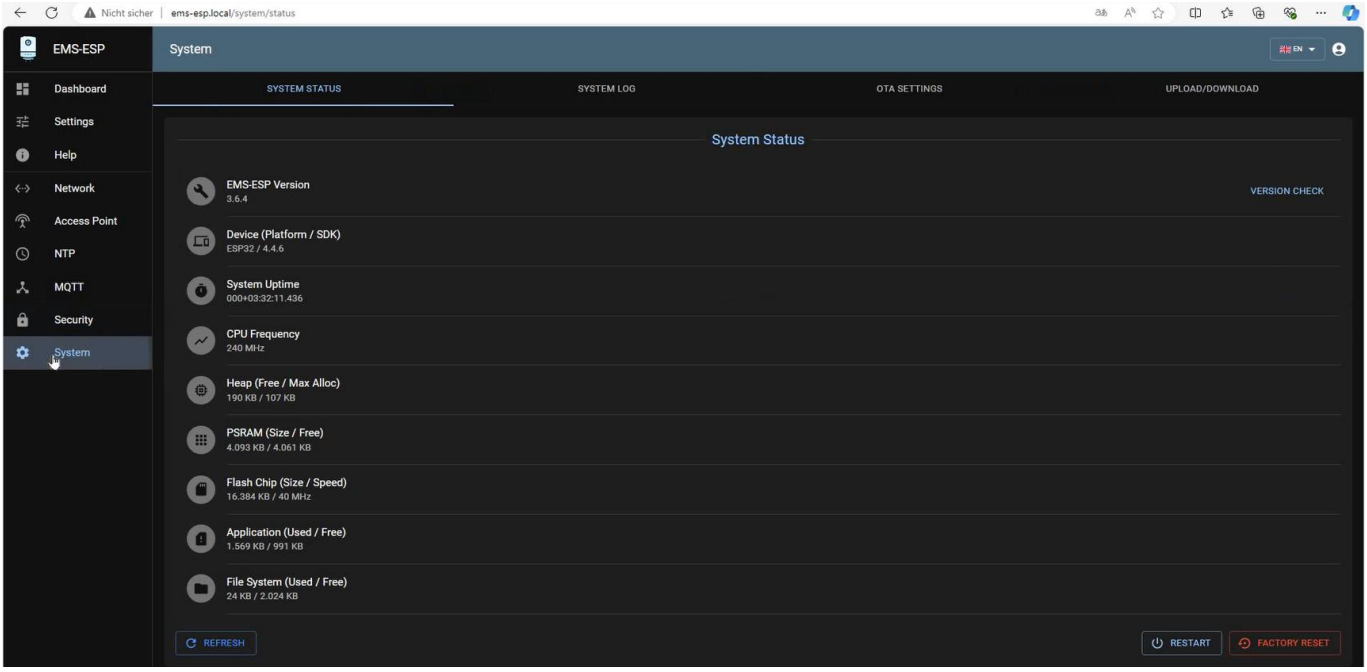
MQTT Settings: Not necessary with Virtual Inputs & Outputs



Security Settings: Not necessary in our example



System Settings: Necessary for Firmware reasons in our example



Step 3: Loxone Config

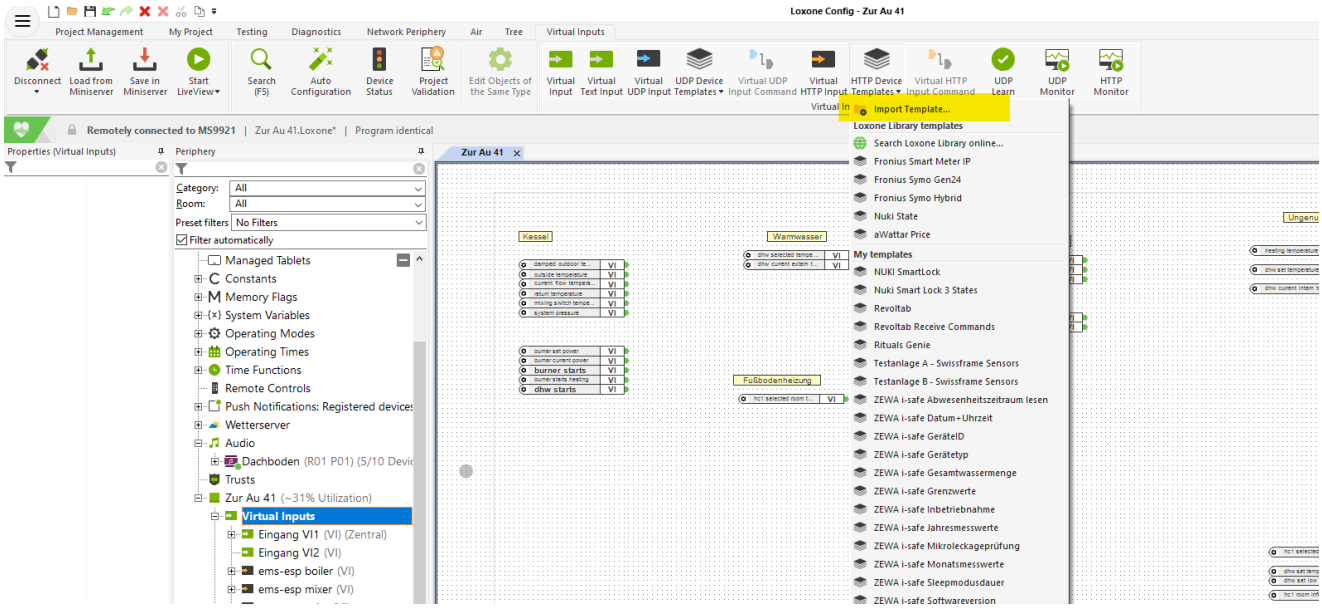
Step 3.1 Download Templates in Loxone Library

Download of the Virtual Inputs & Outputs

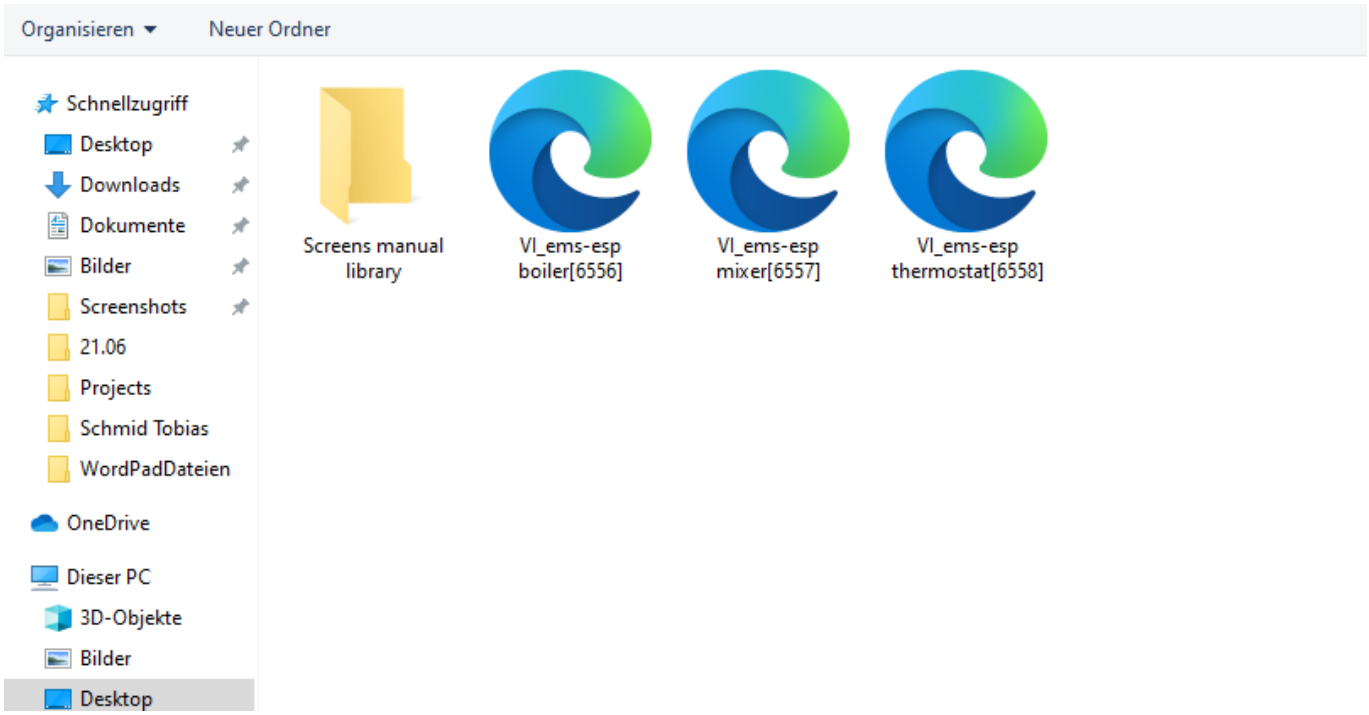
The Boiler Virtual Input is in the “download button”

Other Virtual Inputs are in the “Additional downloads” of the template

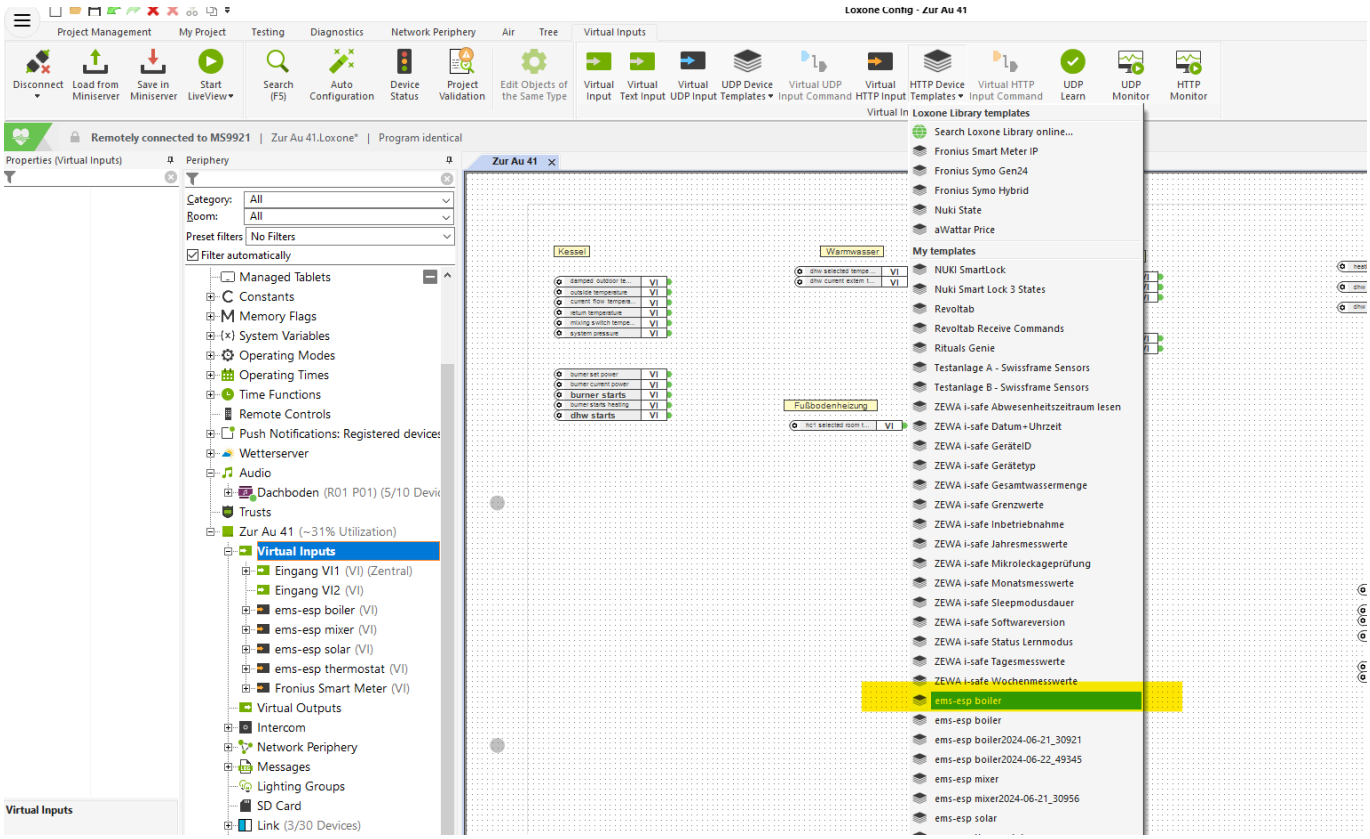
Step 3.2 Templateimport



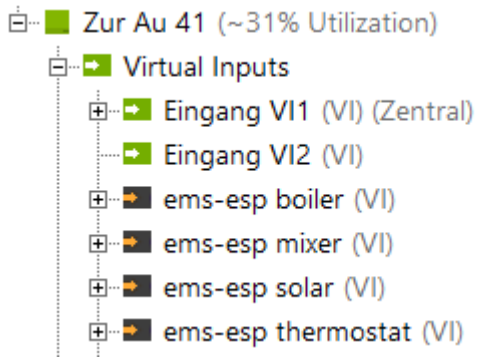
Choose the Downloaded Template from the Download Button or Attached Download area



Click in the pasted Template.



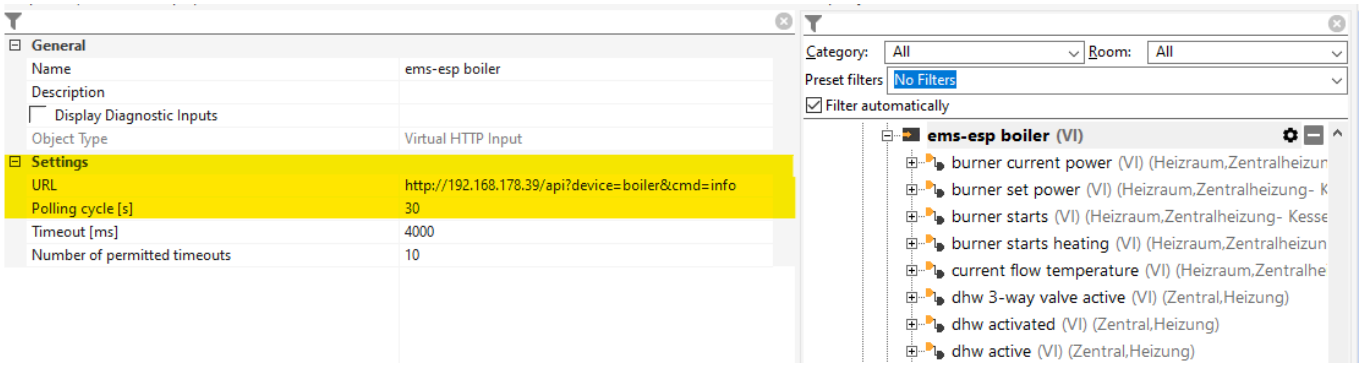
The HTTP Device Templates appears on the left side on “Periphery”

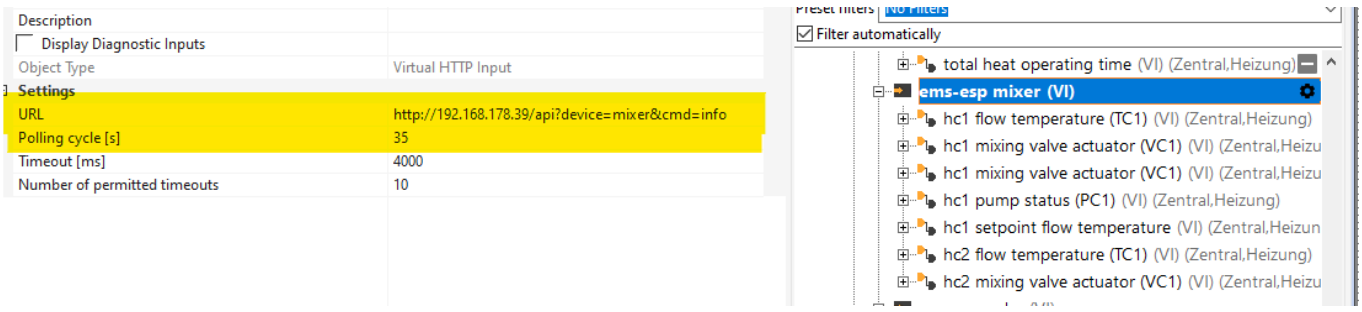


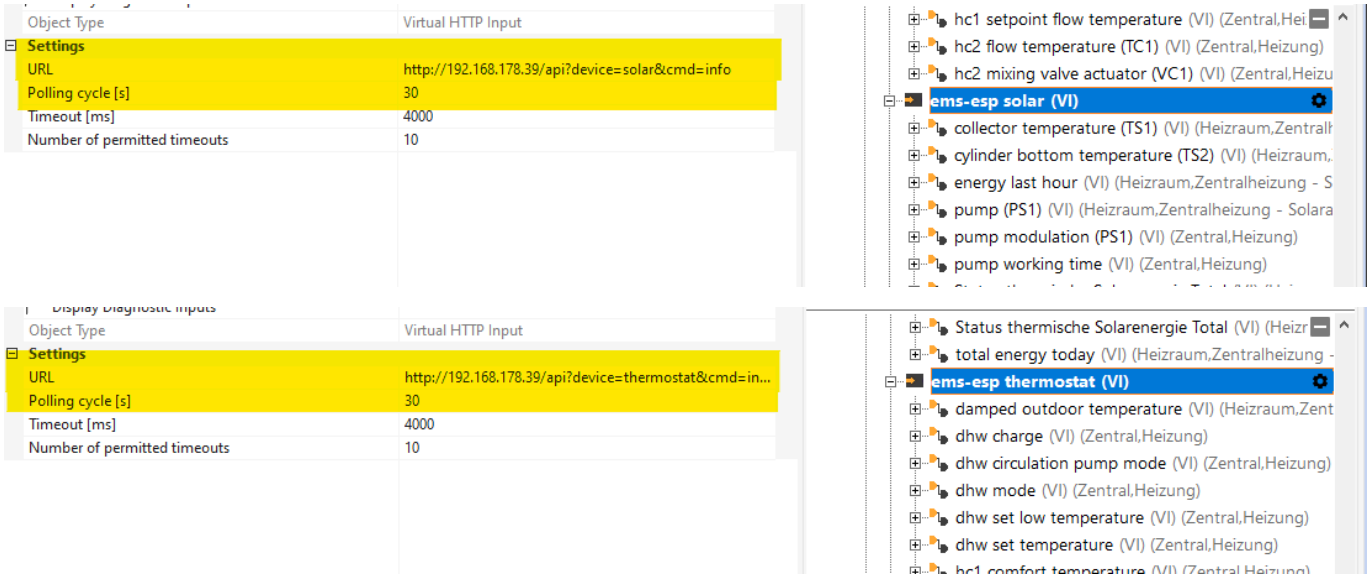
Step 3.3: Adjust the URL & Polling Cycle

Klick on the “ems-esp boiler” and change the IP Adress to the IP Adress of your own Gateway:

Recommended polling cylce: 30 Seconds (can differ from project to project)







Step 3.4 : Create individual commands

Where can I get the commands?

Click on the "three" dots marked in yellow

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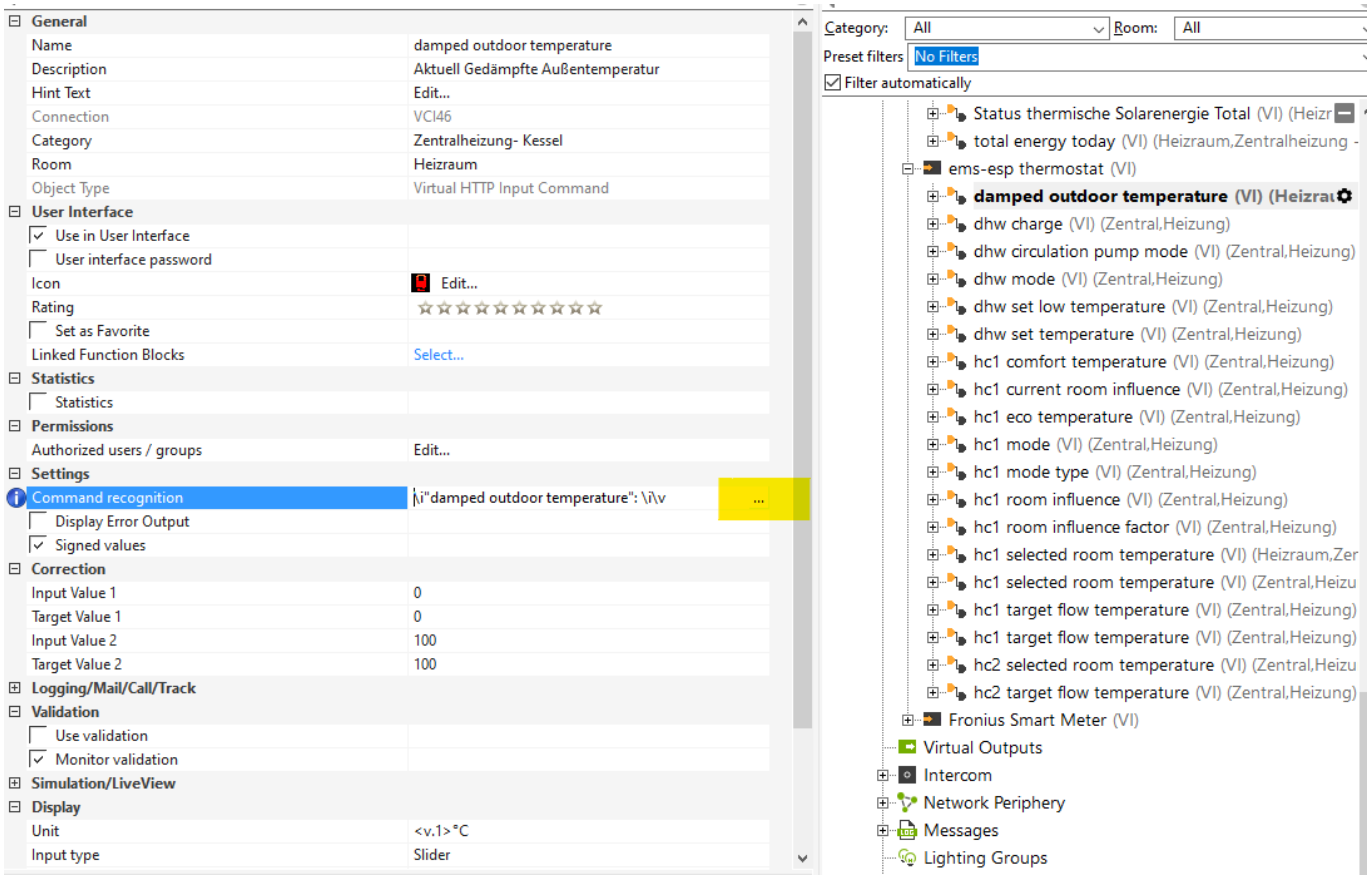


Or: Use the following commands in a Webbrowser

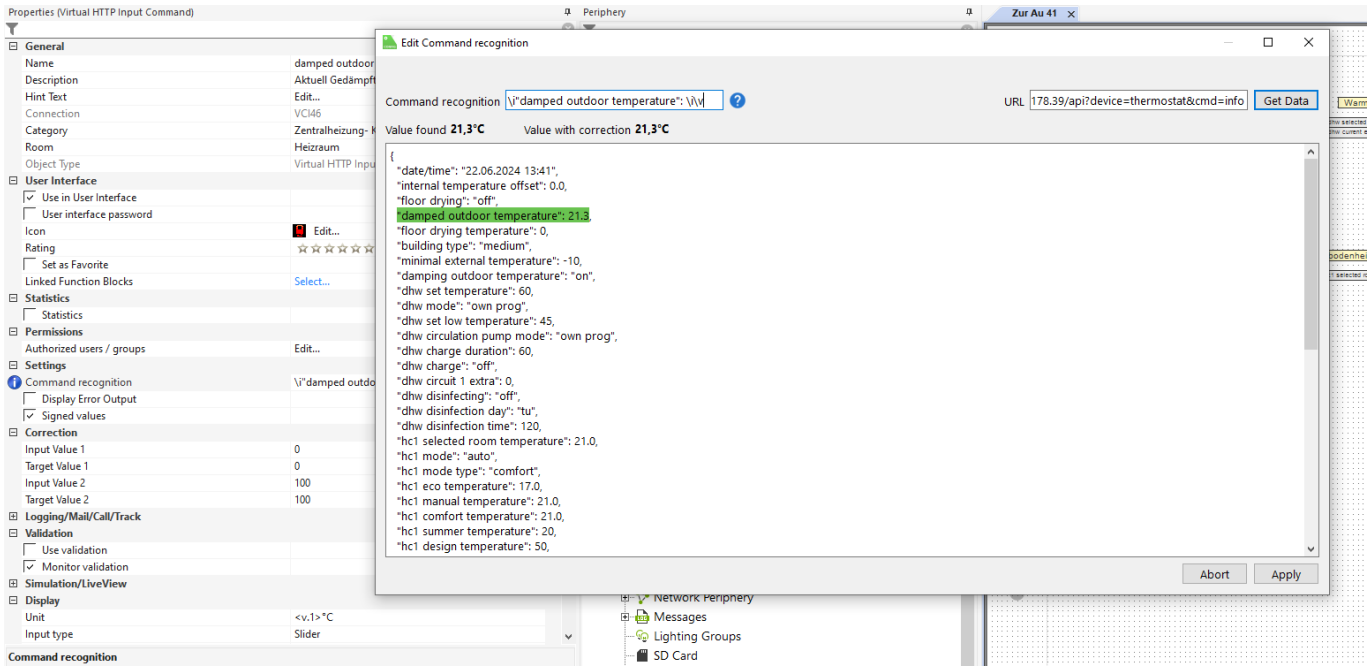
http://[ems-esp-ip]/api/boiler/info

http://[ems-esp-ip]/api/thermostat/info

http://[ems-esp-ip]/api/mixer/info

http://[ems-esp-ip]/api/solar/info

A window appears with all commands:



Copy and paste the commands in an Editor for example

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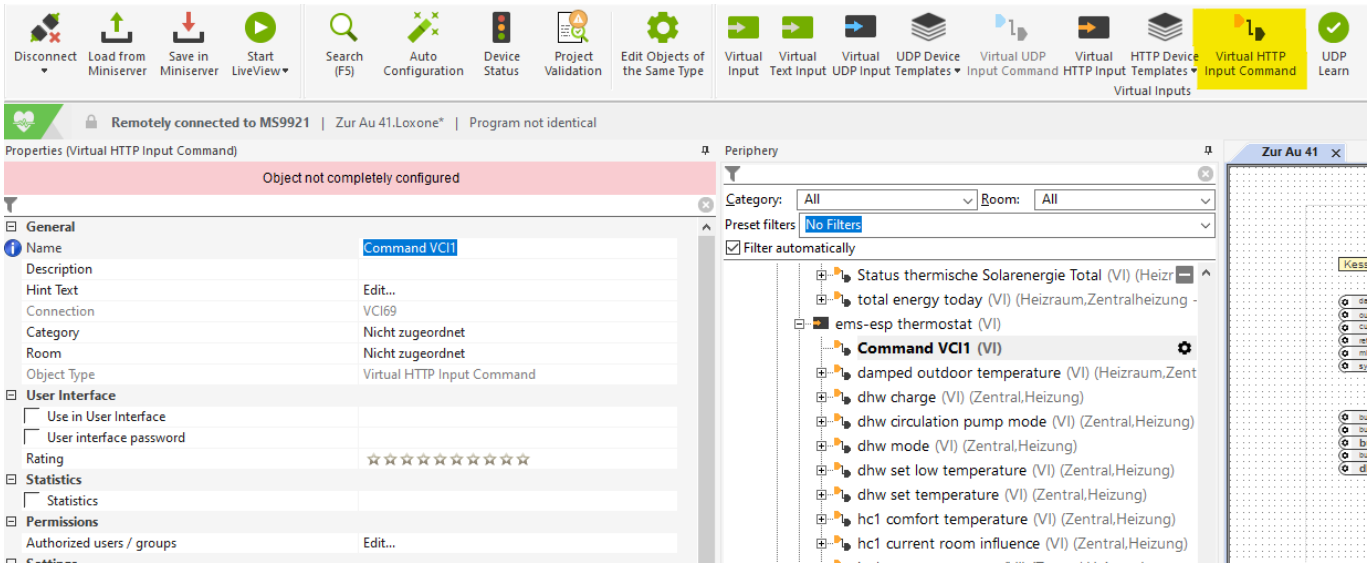
Datei Bearbeiten Format Ansicht Hilfe

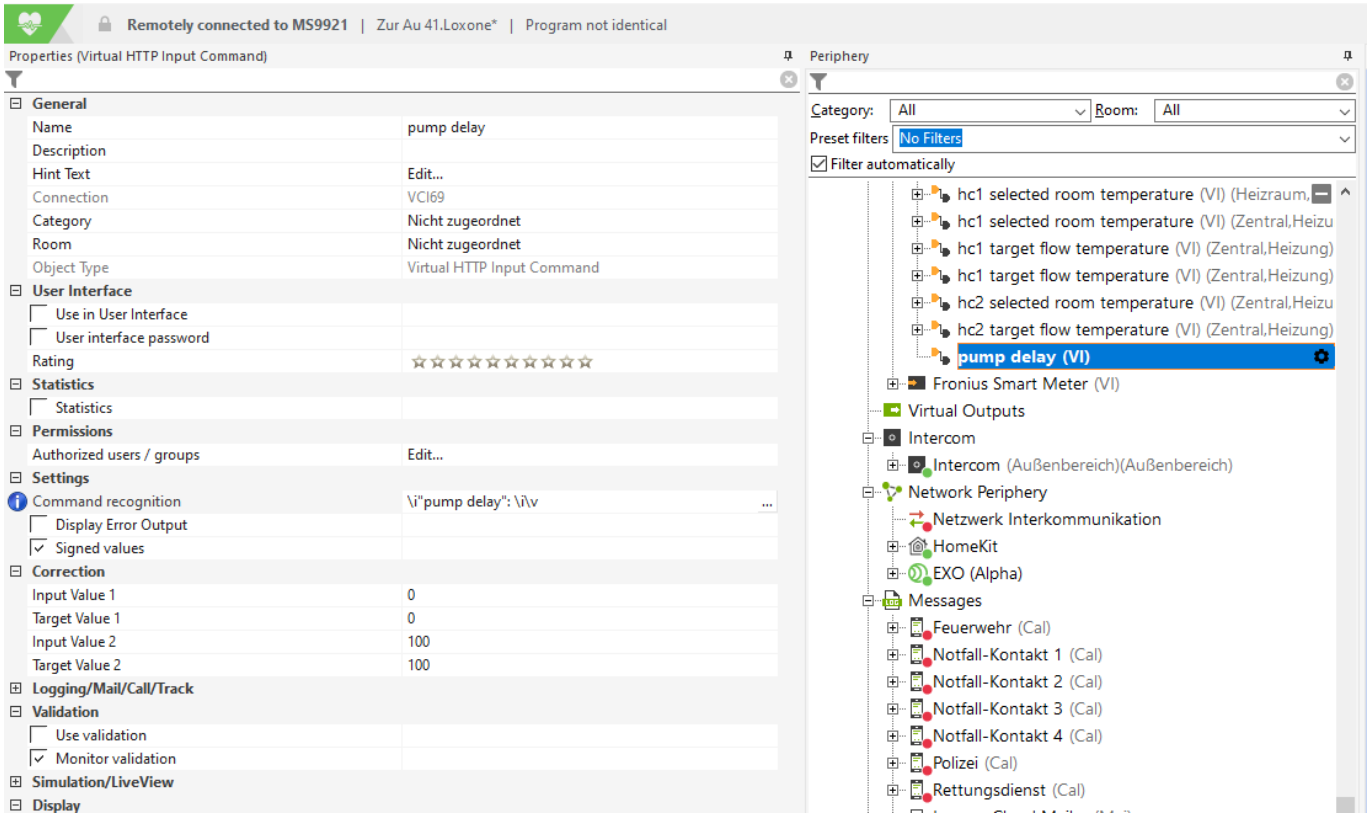
Boiler:


```
  "force heating off": "off",
  "heating active": "off",
  "tapwater active": "off",
  "selected flow temperature": 5,
  "heating pump modulation": 0,
  "outside temperature": 27.6,
  "current flow temperature": 59.1,
  "return temperature": 56.4,
  "mixing switch temperature": 32.3,
  "system pressure": 1.2,
  "gas": "off",
  "gas stage 2": "off",
  "flame current": 0.0,
  "fan": "off",
  "ignition": "off",
  "oil preheating": "off",
  "burner min power": 0,
  "burner max power": 100,
  "burner min period": 10,
  "hysteresis on temperature": -6,
  "hysteresis off temperature": 6,
  "heating activated": "on",
  "heating temperature": 82,
  "heating pump": "off",
  "boiler pump max power": 70,
  "boiler pump min power": 10,
  "boiler pump mode": "proportional",
  "pump delay": 3,
  "set flow temperature": 0,
  "burner set power": 0,
  "burner selected max power": 0,
  "burner current power": 0,
  "burner starts": 133941,
  "total burner operating time": "924 days 5 hours 6 minutes",
  "burner stage 2 operating time": "0 days 0 hours 0 minutes",
  "total heat operating time": "780 days 0 hours 0 minutes",
  "burner starts heating": 50296,
  "total UBA operating time": "2545 days 15 hours 20 minutes",
  "last error code": "6L(229) 24.03.2024 12:26 (0 min)",
  "service code": "0H",
  "service code number": 203,
  "maintenance message": "H00",
  "maintenance scheduled": "off",
  "time to next maintenance": 6000,
  "next maintenance date": "01.01.2009",
  "dhw set temperature": 63,
  "dhw selected temperature": 60,
```

Create a new command, copy & paste an old command and replace the datapointname in the command recognition trough the new command text



Example: command recognitiion with “pump delay”

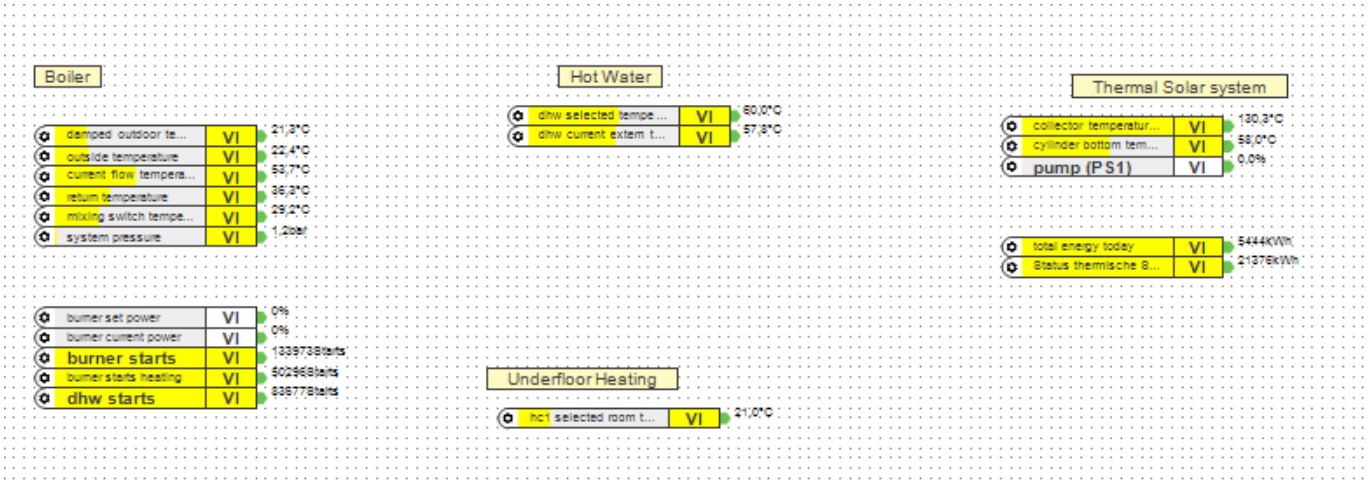


Step 3.4 : Control the values

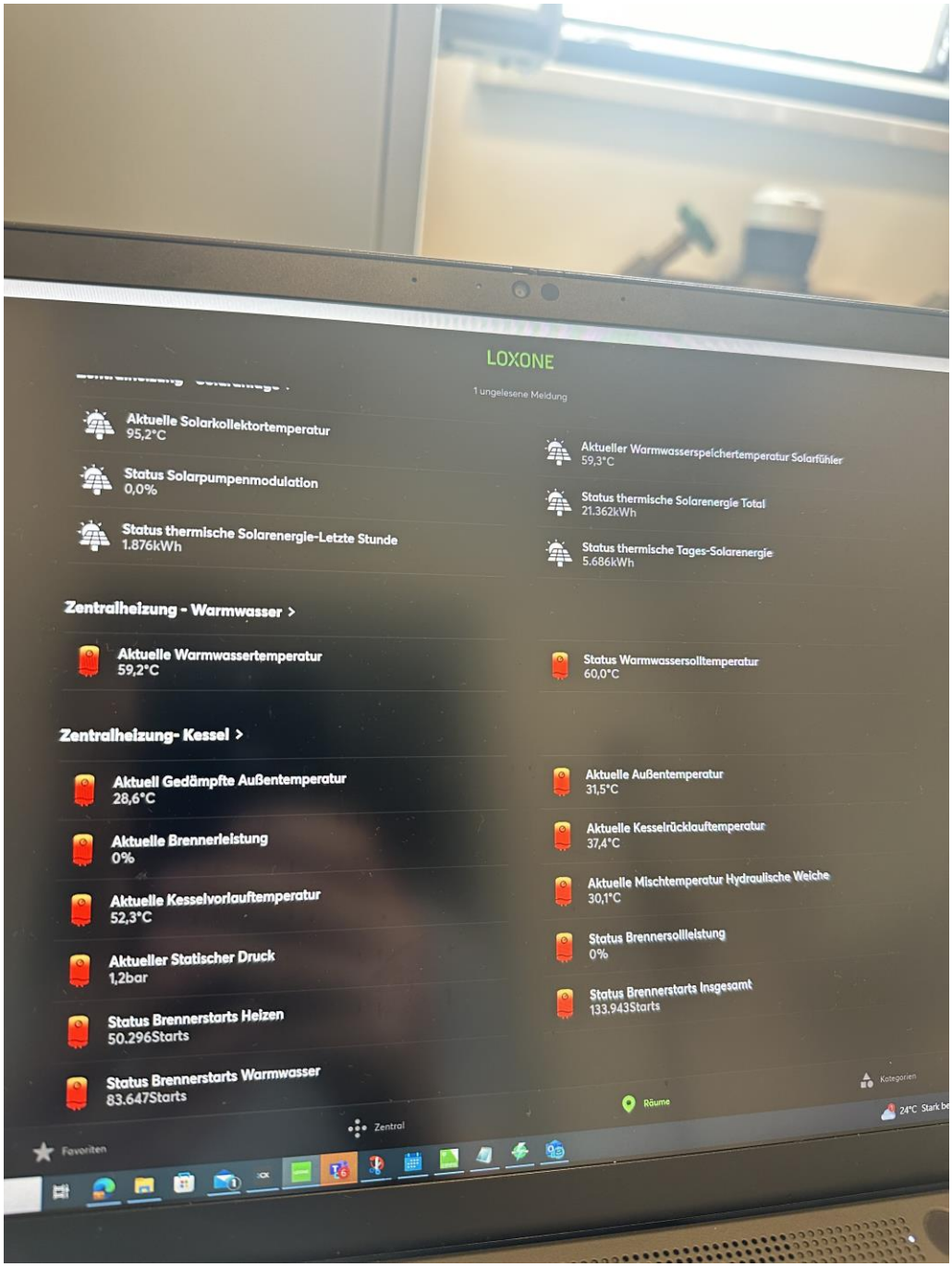
All Virtual Inputs should receive after the polling cycle the correct values.

You can compare it with the operation unit for example the “RC310”.

To do this, it is also necessary to access the service level. This is possible by pressing and holding the "Menu" button for 5 seconds on the RC310.



By adjusting the description, category, room, units and corrections, the actual values appear in the app



Create your own visualization, control the hot water temperature with virtual outputs and individual logic. Influence the heating curve, the room influence or flow temperatures with individual logic or the intelligent temperature controller and the Climate Controller.

Hints for Virtual Outputs:

Use the following manual: Configuration for Loxone — EMS Gateway documentation (bbqkees-electronics.nl)

The part from Loxberry and MQTT is NOT required.

You can check all available parameters for Virtual Outputs with the following commands:

```
http://[ems-esp-ip]/api/boiler/commands
http://[ems-esp-ip]/api/thermostat/commands
http://[ems-esp-ip]/api/mixer/commands
http://[ems-esp-ip]/api/solar/commands
```