

ESERA-Station 200 Commissioning - Start

- Open system hardware and software central control for smart home, building automation, IoT and commercial automation
- Hybrid design consisting of an embedded computer and 1-Wire Gateway
- Powerful, modern quad core computer with 1.2GHz CPU
- Fast readout of all 1-Wire devices in 1-2 seconds cycle
- Data exchange between 1-Wire gateway and computer via Modbus or text protocol
- Extensive 1-Wire libraries for sensors and actuators
- 2 x binary output 16A
- 2 x binary input 10-30VDC
- 2 x system clocks with buffering in case of power failure
- Comfortable configuration program for 1-Wire gateway and interface parameters
- 24V power supply for Embedded Computer und 1-Wire Gateway
- Designed for all 1-Wire network sizes
- Top-hat rail housing for control cabinet installation



1 INTRODUCTION

We are pleased that you have chosen ESERA-Station 200, the open central control system. Before you start to install the ESERA Station 200 and put the device into operation, please read these operating instructions until the end, especially the section on safety instructions.

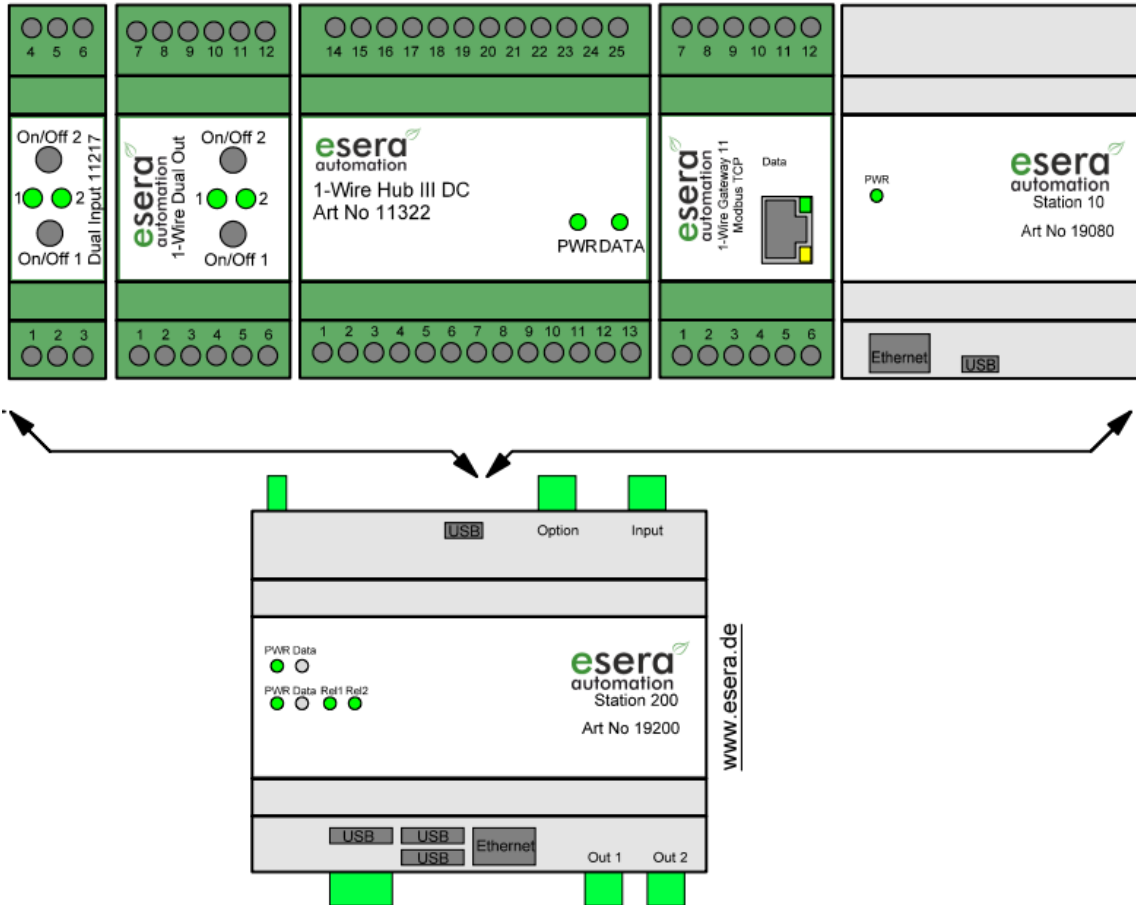
2 PRODUCT DESCRIPTION

The ESERA-Station is a modern and open system hybrid system consisting of two modules, a powerful 1-Wire Gateway and an embedded computer. Both modules, 1-Wire Gateway and Embedded Computer are internally connected via serial data interface and power supply. Both modules have their own power supply and a system clock (Real Time Clock) with buffering in case of power failure by a maintenance-free high-performance capacitor (Goldcap).

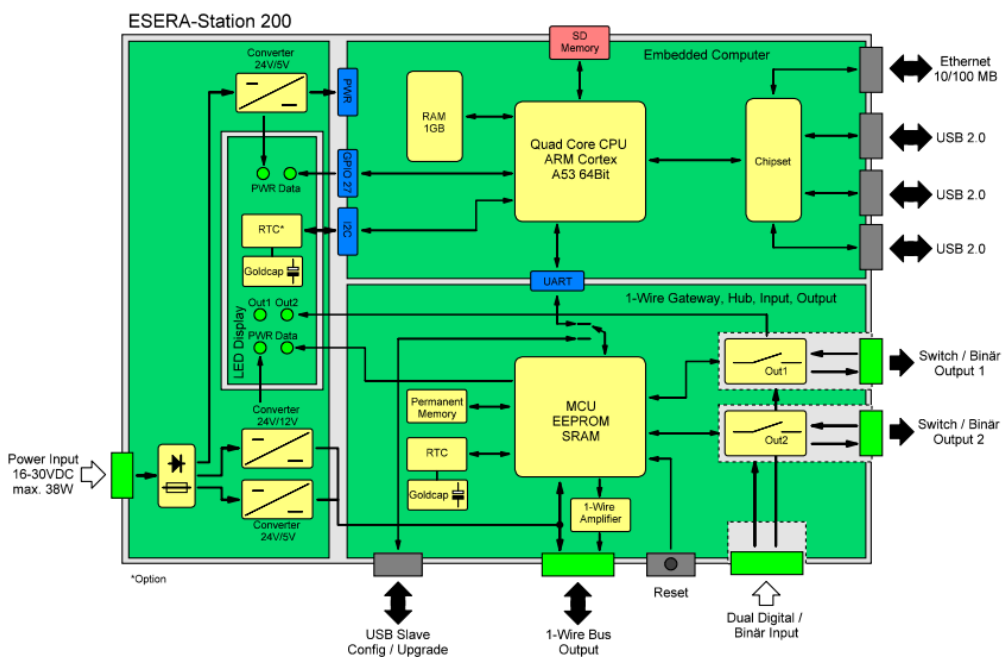
3 SYSTEM OVERVIEW STATION 200, ASSEMBLIES

Die Station 200 contains several assemblies, the

- 1-Wire Gateway incl. 1-Wire Hub III, Dual Switch Module and Dual Digital Input and
- Embedded Computer (Raspberry Pi 3)



4 BLOCK DIAGRAM ESERA-STATION 200



5 COMMISSIONING

5.1 INSERT /CHECK SD-CARD

Before putting the ESERA-Station 200 into operation, please check whether an SD memory card is installed in the SD card slot. If not, insert it carefully into the SD card slot on the top side of the Station 200 before applying the operating voltage.

Make sure that the label on the top side of the SD card is visible and that the SD card is inserted correctly into the SD card holder.



5.2 OPERATING VOLTAGE

A high-quality power supply unit with an output voltage of 24VDC and a minimum load capacity of 15 - 40W is required for operating the ESERA-Station 200. The power consumption depends on the software utilization of the ESERA Station-200 and the electrical load on the 1-Wire Bus.

5.3 CONFIG TOOL, 1-WIRE CONFIGURATION

To configure the 1-Wire Gateway, please use ESERA Config Tool 3, which you can download from our website.

Here you can find the Config Tool 3 via our ESERA Website:

<https://www.esera.de/produkte/software/downloads-firmware-1-wire-controller-1-wire-gateway/>

or Config-Tool Download page:

http://controller.eservice-online.de/download/configtool_download.php

5.4 USB – DATA CONNECTION 1-WIRE GATEWAY

Please start with the commissioning of ESERA-Station 200 with the 1-Wire Gateway. For this purpose, connect the Station 200 via USB data cable with your PC. Your PC may require a driver to set up the USB data connection.

You can find the appropriate driver for the data connection under:

<http://www.ftdichip.com/Drivers/VCP.htm>



USB 2.0 Data cable
Design: plug Type A
to plug Mini Type B



Important: When the USB data cable is plugged in, the data connection for sending data between the internal Station 200 Embedded PC and the 1-Wire Gateway is interrupted. The Embedded PC continues to receive data from the 1-Wire Gateway.

5.5 FIRST DATA CONNECTION CONFIG-TOOL – STATION 200

The screenshot shows the ESERA-Automation Config Tool 3 interface. At the top, there are status indicators: 'UPDATE ONLINE', 'RUN 1/0 OWB-ACTIVE', and 'DISCONNECT TO CONTROLLER 12:52:49 - COM4 OPENED'. The main interface is divided into two panels: 'COMMUNICATION TO CONTROLLER' and 'CONTROLLER INFORMATION'. In the 'COMMUNICATION TO CONTROLLER' panel, the 'TYPE' dropdown is set to 'COM4', and the 'IP-ADDRESS' is '192.168.2.13'. In the 'CONTROLLER INFORMATION' panel, the 'ARTICLE NO.' is '192002018V1.0-100', 'SERIAL NO.' is '192002018V1.0-100', 'FIRMWARE' is 'V1.19_10', and 'HARDWARE' is 'V1.0'. A red box highlights the 'DISCONNECT TO CONTROLLER' button, and a red arrow points to it from a text box that says '1. Verbinden Sie sich per „CONNECT TO CONTROLLER“'. Another red box highlights the 'COM4' dropdown, and a red arrow points to it from a text box that says '2. Windows COM-Port Station-200 auswählen'.

After you have connected to the 1-Wire Gateway (1-Wire controller), you can directly start configuring the 1-Wire Gateway.

Many useful tips can be found in our online support videos on our website.

<https://www.esera.de/service-support/support-videos/>

5.6 1-WIRE GATEWAY, SET THE DATA AND TIME

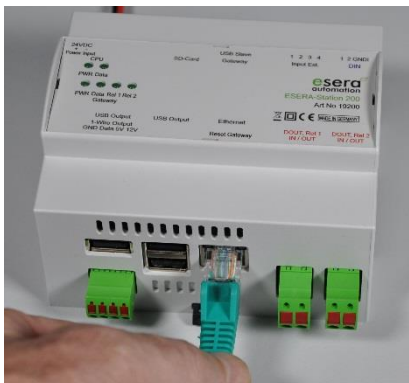
Please start with the commissioning of the 1-Wire Gateway with updating the time and date.

For more details on how to get started, please refer to the support videos on our website. You can find the Support Videos at: <https://www.esera.de/service-support/how-to-support-videos/>

The screenshot shows the 'CONTROLLER FUNCTIONS' panel in the ESERA-Automation Config Tool 3. The panel contains five buttons: 'SET TIME', 'SET DATE', 'SHOW INFO', 'SHOW SETTING', and 'SHOW OWD'. A red box highlights the 'SET TIME' and 'SET DATE' buttons.

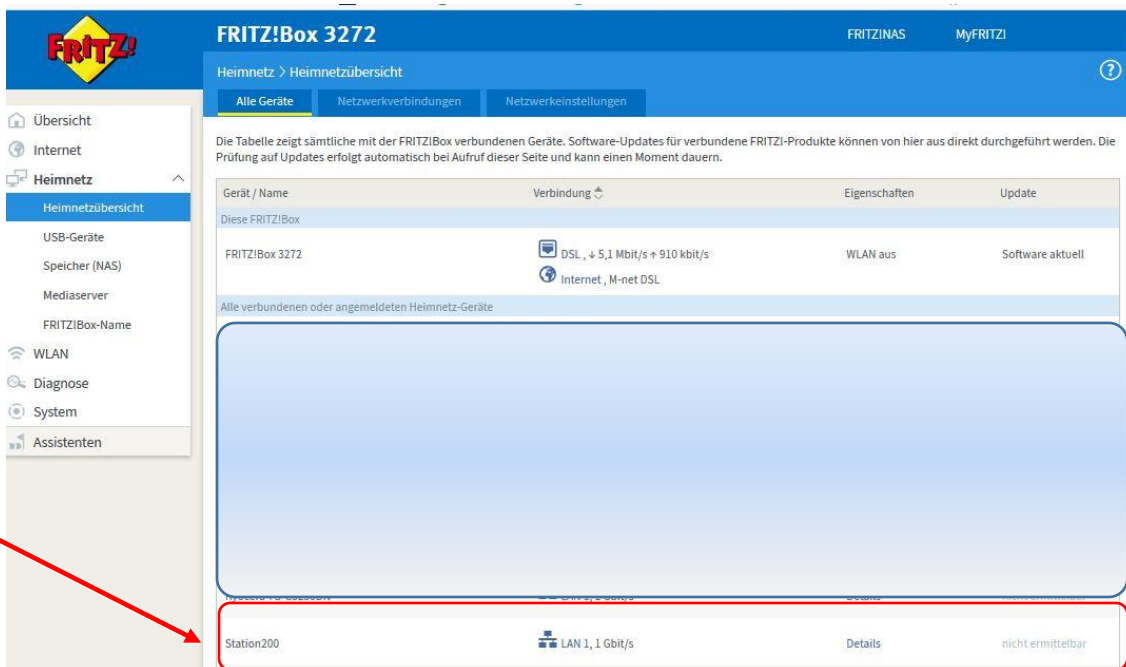
5.7 ETHERNET IP-ADRESSES

To establish a LAN connection to your IP network, a Fast Ethernet (10/100MBit) network connection is required.



The operating system of the ESERA-Station 200 is set to DHCP for LAN and WLAN interface in the delivery state, which means that the ESERA-Station 200 receives all necessary IP settings from your network router.

How can you find out the IP address of the ESERA-Station 200? The easiest way is to look up the assigned IP address in your router. Here is an example of a Fritzbox.



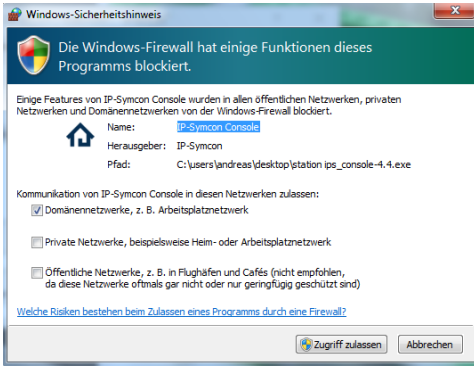
5.8 FIRST START IP-SYMCON, VERSION V4.4

For the first start of ESERA IP-Symcon, download the „station isp console 4.4“ from our download area to the Windows desktop.

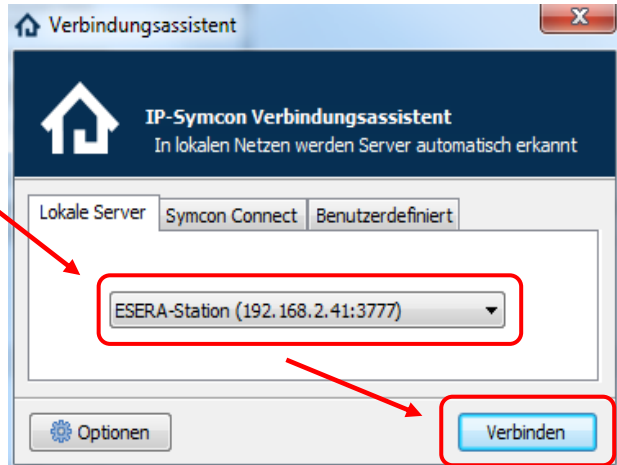
Start the „station isp console 4.4“ with a double click.



This may cause a security prompt from Windows. Please agree here.

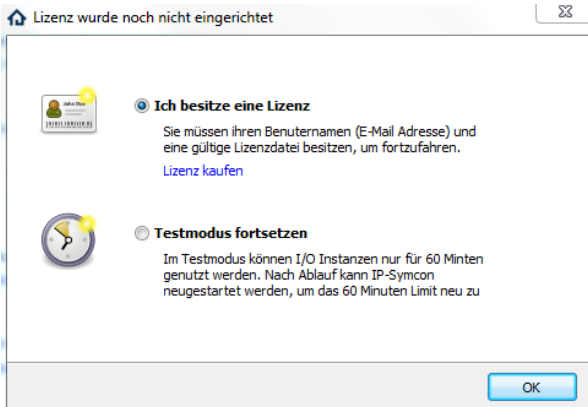


Now select Station 200 in the connection wizard.



5.9 IP-SYMCON LICENSE QUERY/ TEST MODE

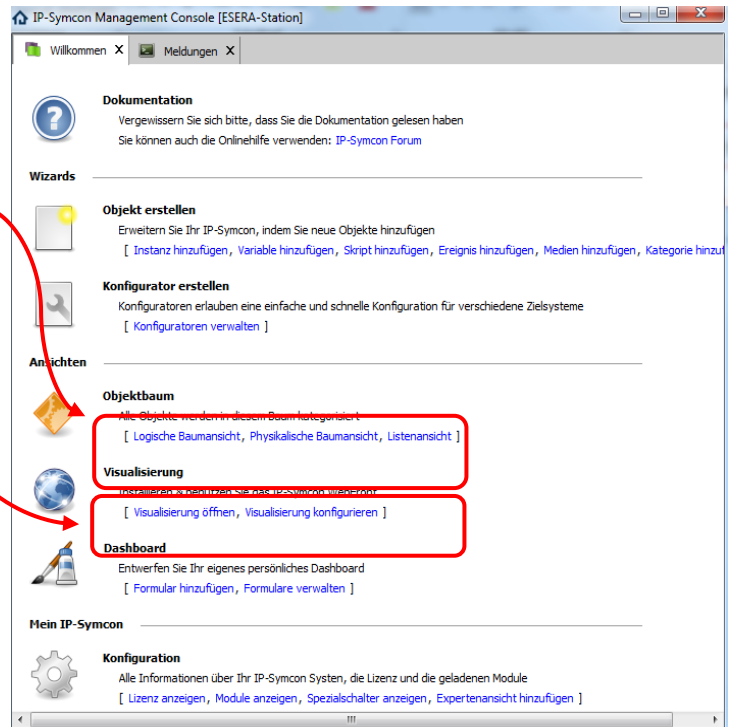
When you start IP-Symcon for the first time, a license query appears. If you do not have a valid IP-Symcon license yet, start in "test mode". The test mode allows you to test the complete IP-Symcon software for 60 minutes. After this time all software functions are locked. In order to continue testing, a restart of Station 200 is necessary.



5.10 IP-SYMCON MANAGEMENT CONSOLE

Now the IP-Symcon Management Console starts. From here you start the

- **Programming environment, Object tree/ logical tree structure**
- **and Visualization**

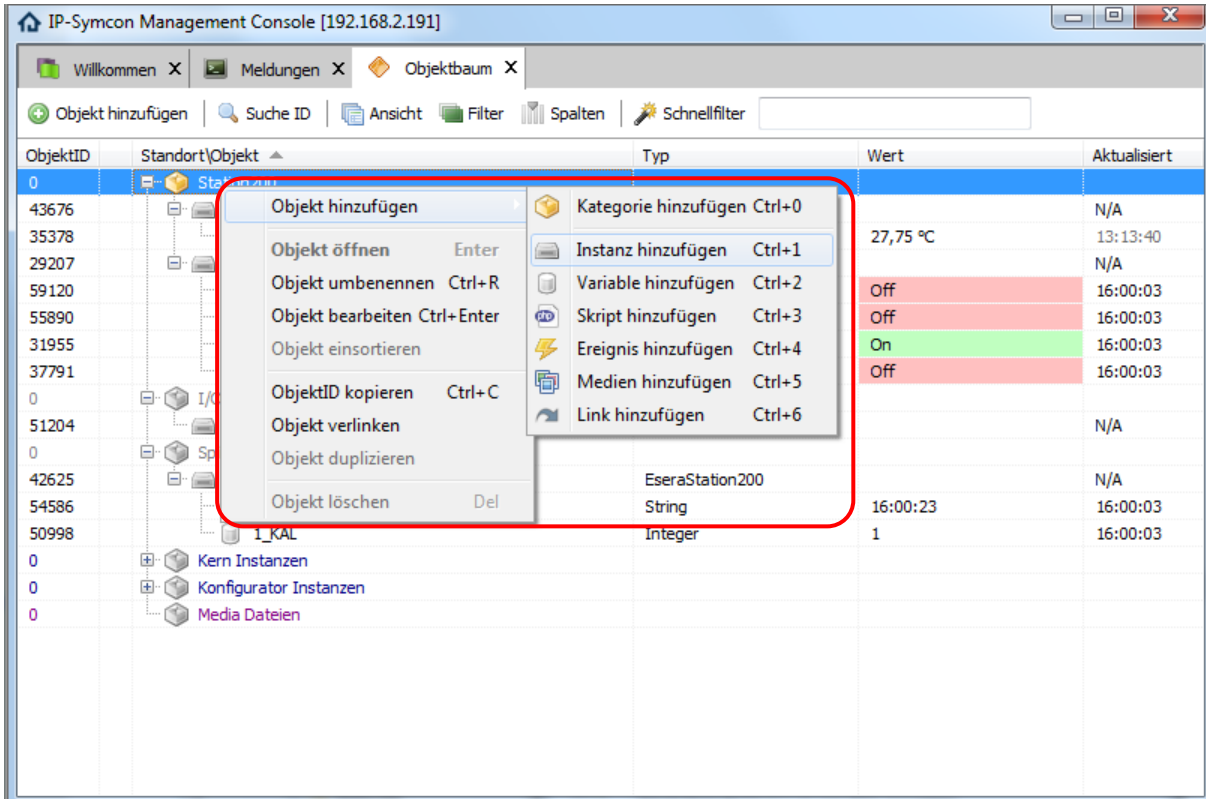


5.11 ESERA IP-SYMCON OBJECT TREE

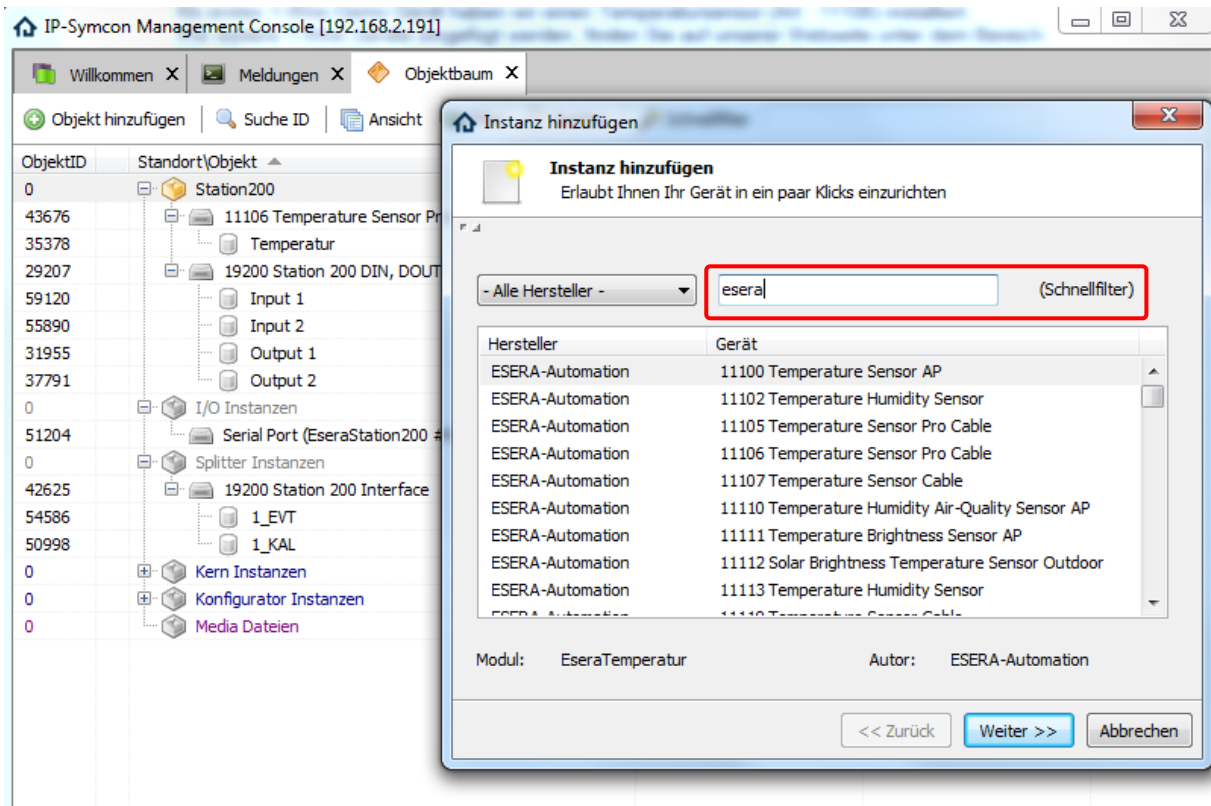
We have already performed the basic IP-Symcon installation for you on ESERA-Station 200. As the first 1-Wire demo device we have installed a Temperature sensor (Art.: 11106).

ObjektID	Standort\Objekt	Typ	Wert	Aktualisiert
0	Station200			
43676	11106 Temperature Sensor Pro Cable	EseraTemperatur		N/A
35378	Temperatur	Float	27,75 °C	13:13:40
29207	19200 Station 200 DIN, DOUT	EseraStation200IO		N/A
59120	Input 1	Boolean	Off	15:04:23
55890	Input 2	Boolean	Off	15:04:23
31955	Output 1	Boolean	On	15:04:23
37791	Output 2	Boolean	Off	15:04:23
0	I/O Instanzen			
51204	Serial Port (EseraStation200 #42625)	Serial Port		N/A
0	Splitter Instanzen			
42625	19200 Station 200 Interface	EseraStation200		N/A
54586	1_EVT	String	15:04:43	15:04:23
50998	1_KAL	Integer	1	15:04:03
0	Kern Instanzen			
0	Konfigurator Instanzen			
0	Media Dateien			

New 1-Wire devices can be added by clicking the right mouse button, "Add object", "Add instance .



Enter "esera" in the quick filter and the selection of all ESERA device instances will be displayed.

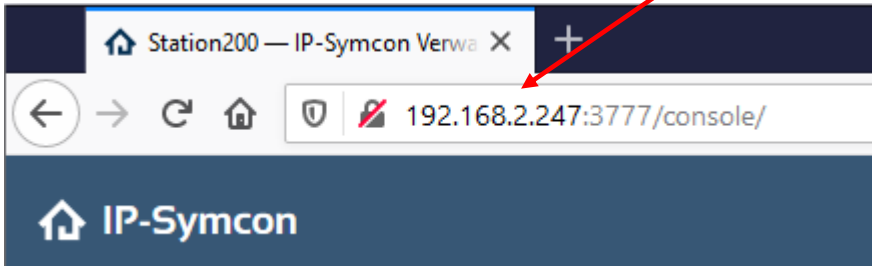


You can find further information on the integration of ESERA Devices on our website under the section: <https://www.esera.de/service-support/kompatible-steuerungen-zentralen/ip-symcon-integration/>

6 FIRST START IP-SYMCON, VERSION V5.X

To start ESERA IP-Symcon from 5.x for the first time, use a web browser (e.g. Firefox) and enter the address for the Web Console. You will find the IP address as described in section 5.7.

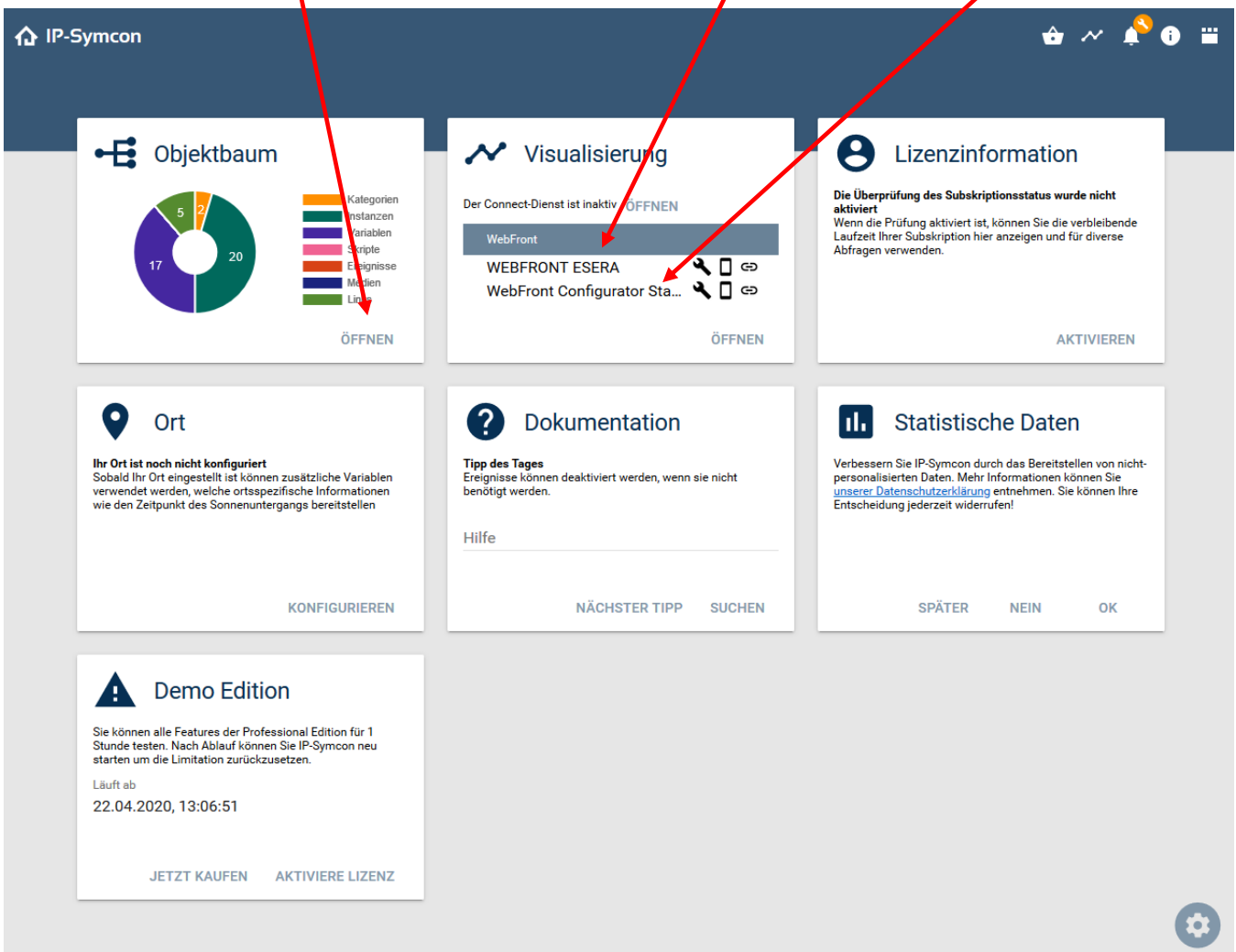
Die Web address for the IP-Symcon Console is: **IP-Adresse:3777/console/**



After starting the program the following web page opens:

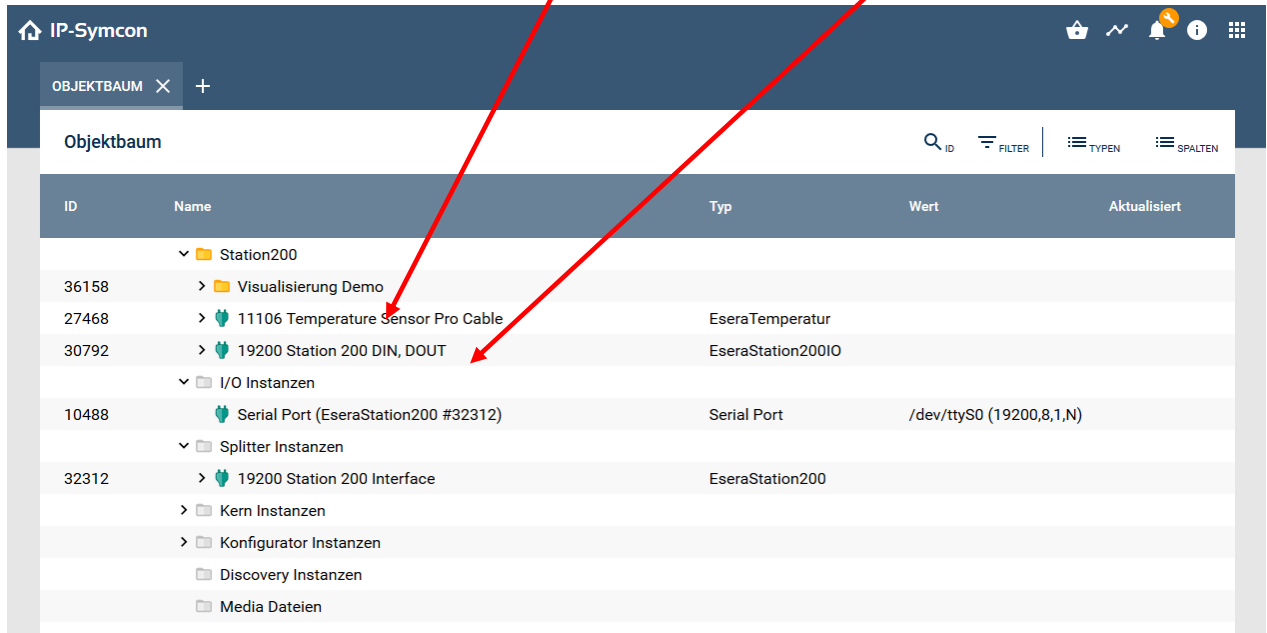
Start the object tree here **(continue under point 6.1).**

or one of the two prepared visualizations (WebFront ESERA oder WebFront Configurator Standard (more under point 6.2).



6.1 OBJECT TREE WEB CONSOLE

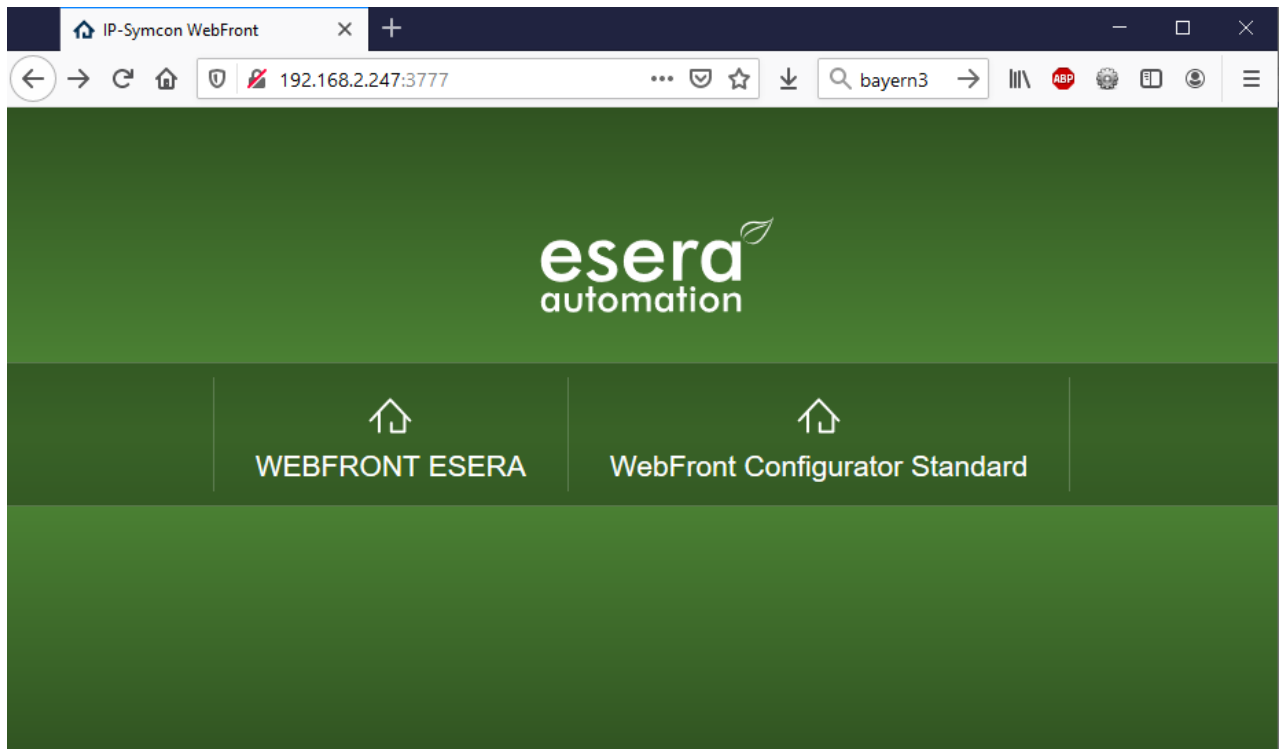
In the next step, open the object tree and the IP-Symcon pre-configured by ESERA. We have already developed the modules for the ESERA-Station 200 especially for the Station 200 **inputs and outputs** and, as an example for sensors and actuators, a **Temperature sensor, Art. 11106** pre-installed. After a few seconds, the first data should be received by the 1-Wire Gateway of the ESERA-Station. The current data can be viewed via the web front (see point 6.2).



ID	Name	Typ	Wert	Aktualisiert
	Station200			
36158	Visualisierung Demo			
27468	11106 Temperature Sensor Pro Cable	EseraTemperatur		
30792	19200 Station 200 DIN, DOUT	EseraStation200IO		
	I/O Instanzen			
10488	Serial Port (EseraStation200 #32312)	Serial Port	/dev/ttyS0 (19200,8,1,N)	
	Splitter Instanzen			
32312	19200 Station 200 Interface	EseraStation200		
	Kern Instanzen			
	Konfigurator Instanzen			
	Discovery Instanzen			
	Media Dateien			

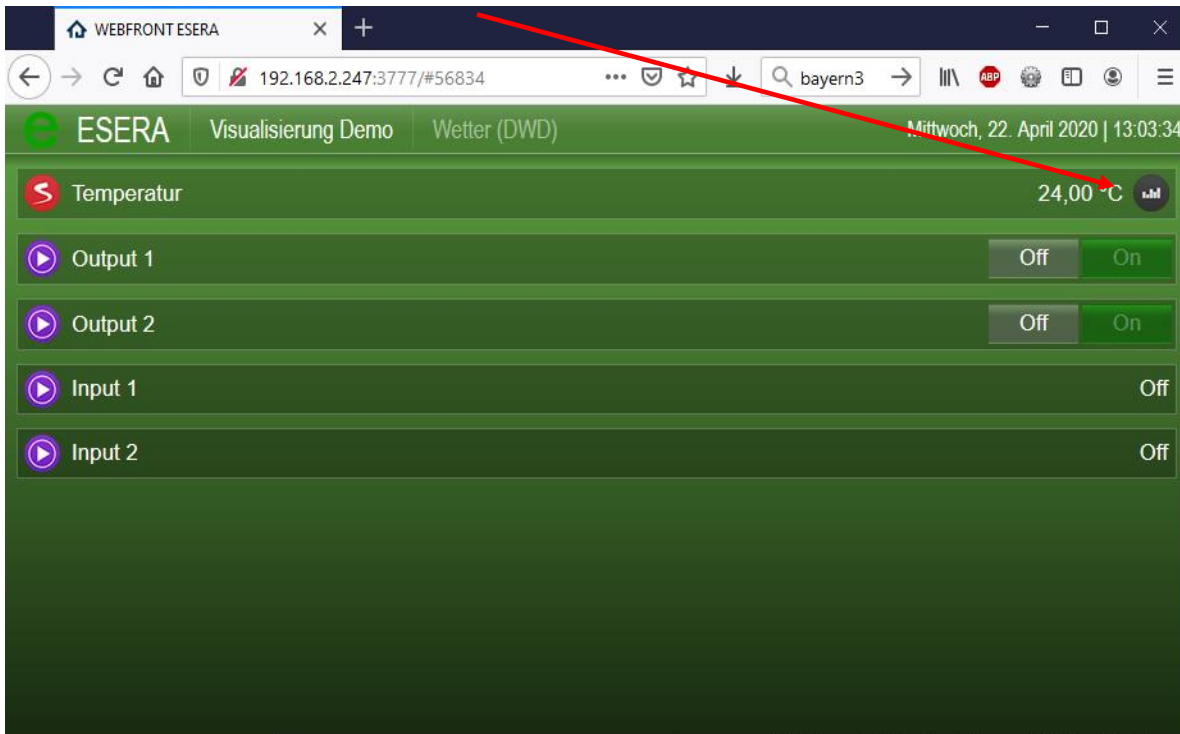
6.2 WEBFRONT ESERA AND STANDARD

As an example, we have set up two Web front interfaces for you.



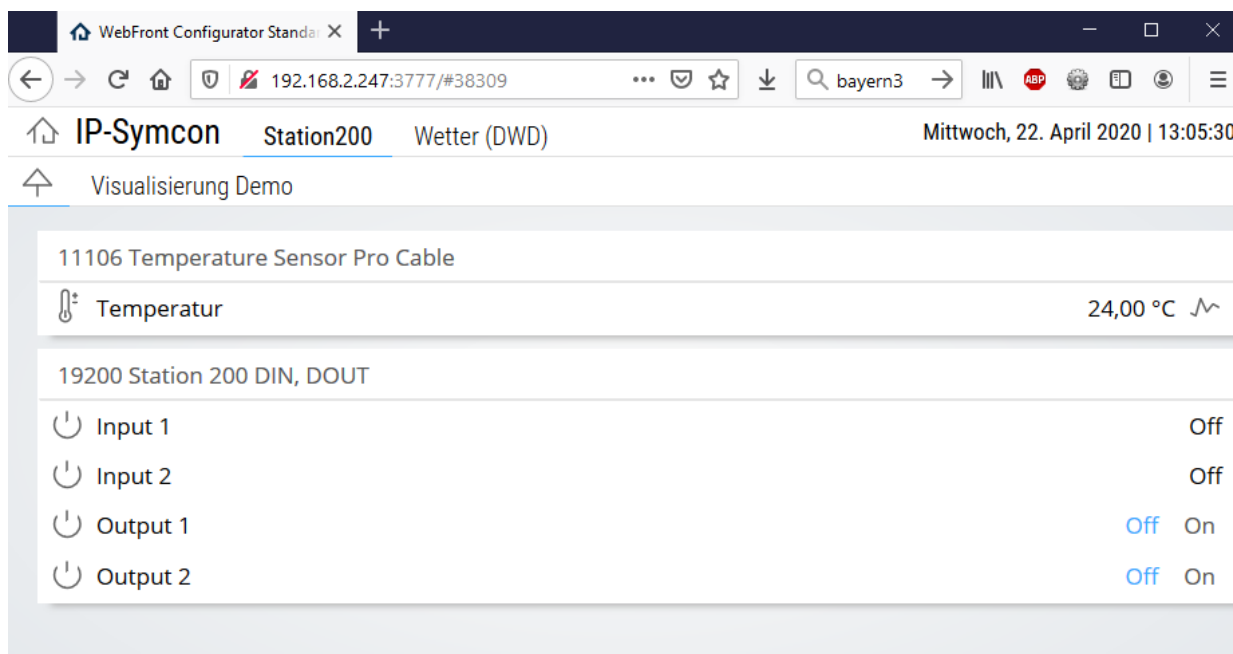
6.3 WEBFRONT ESERA

The ESERA version is shown in green and with "linked" objects. We have activated logging for the pre-installed Temperature sensor. This means that after **clicking on the small logo next to the current temperature value**, a time diagram can be opened.



6.4 WEBFRONT STANDARD

The Standard Web front view is the view preset by IP-Symcon. We have only changed the color to "light" for this



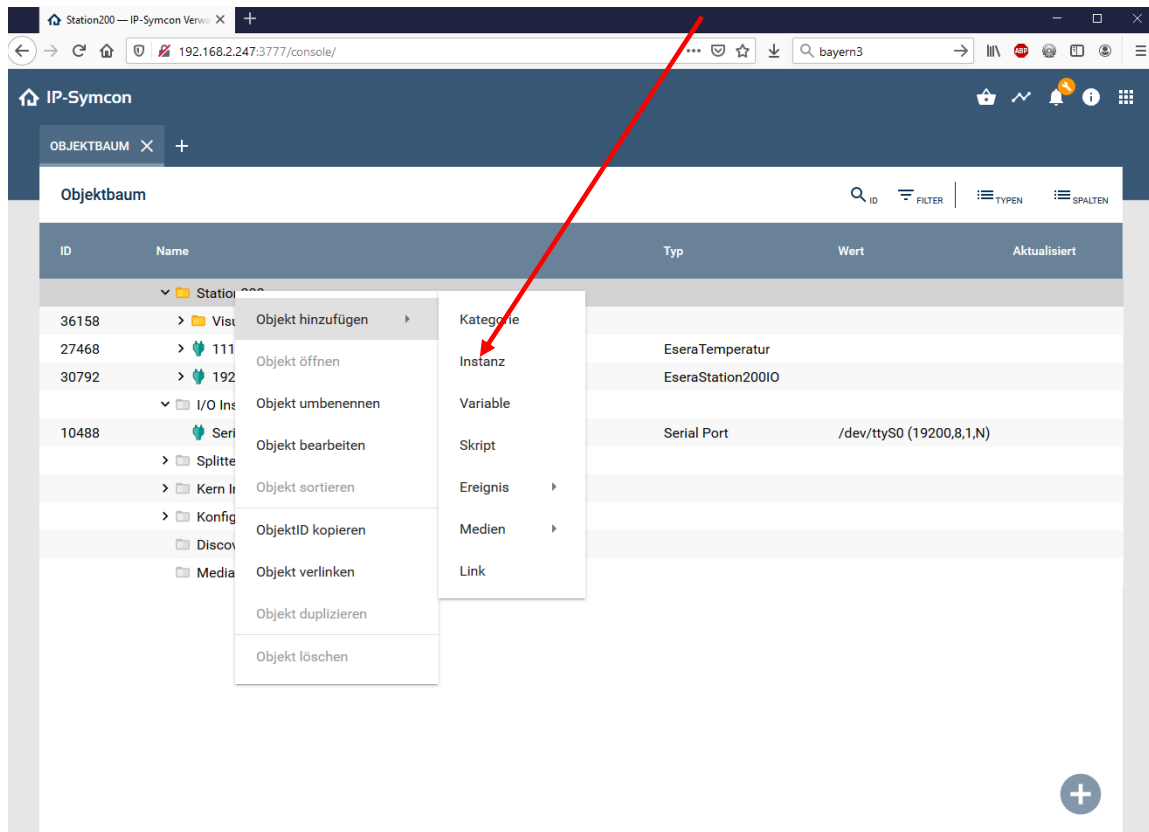
6.5 INTEGRATION OF NEW SENSORS OR ACTUATORS (NEW OWD'S)

To add another OWD of the 1-Wire Gateway, start the object tree.

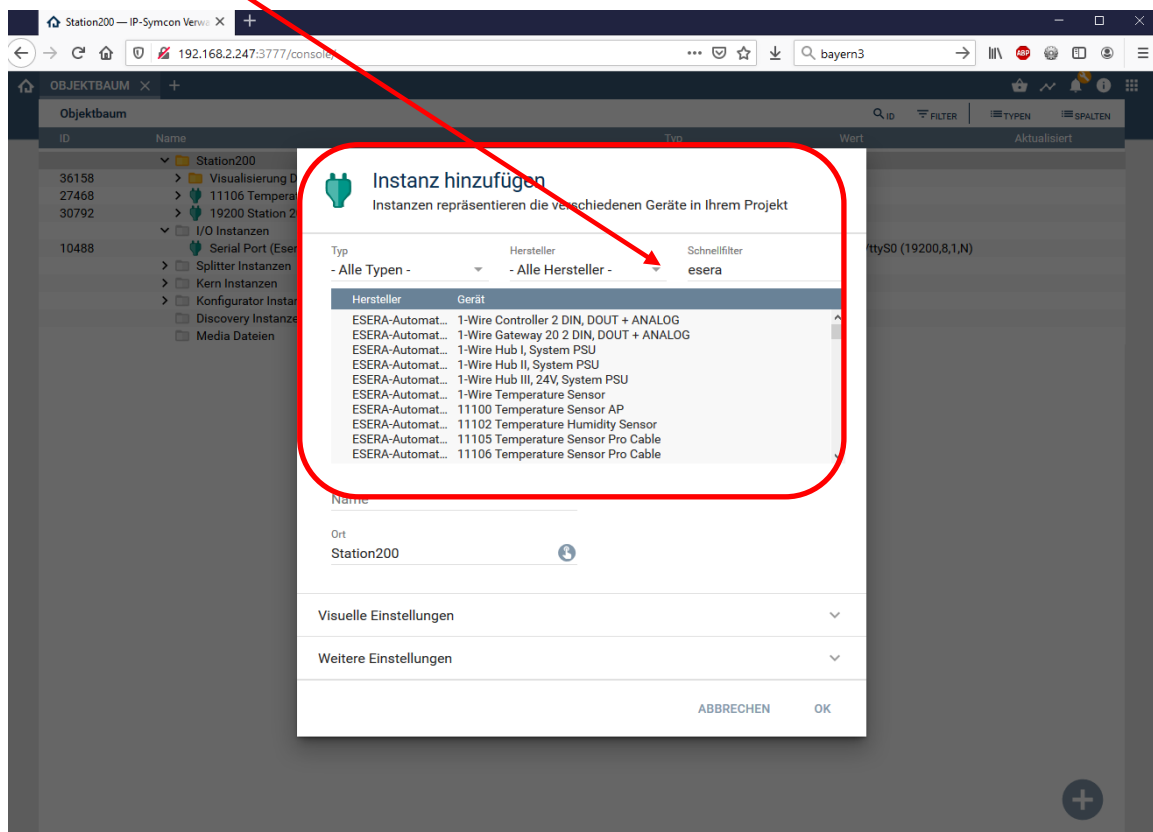
In the next step, click on the top category "Station200", then right-click on this category.

Now a new window opens, where you select the item "Add object".

Continue with the next window. Here you click on "Instance".

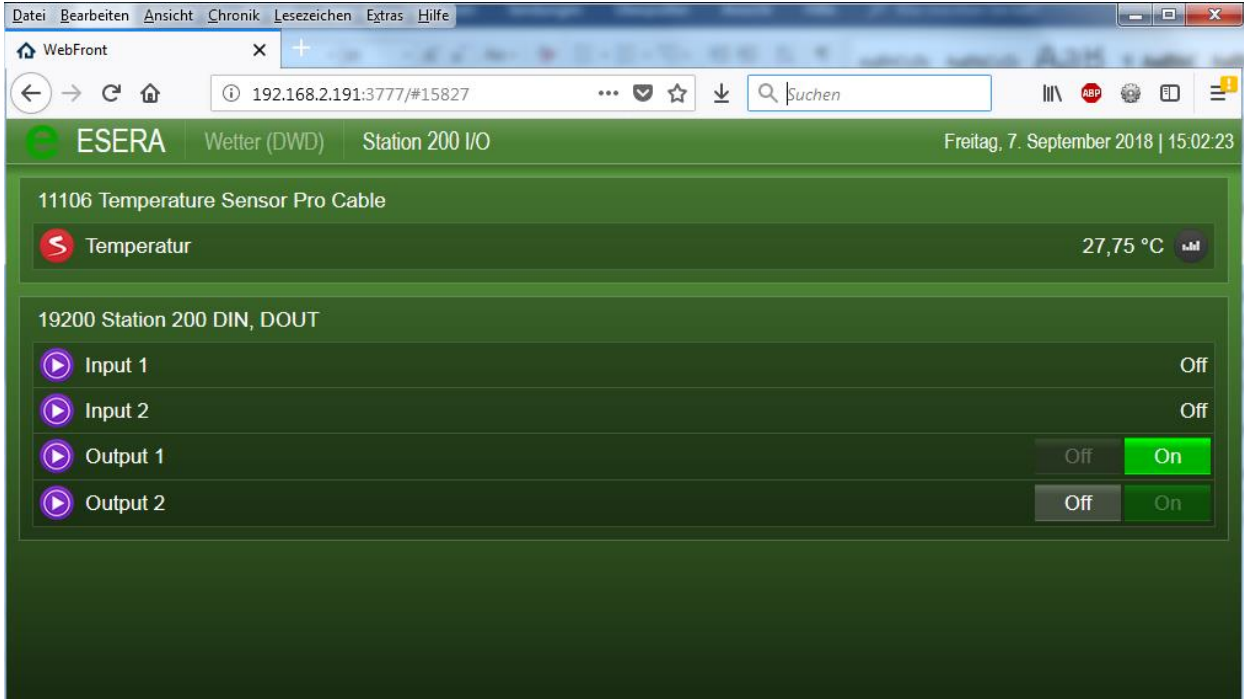


Now the window opens in which you can select the corresponding instance. If you enter ESERA under „Quick filter“, you will receive an overview of the currently available modules sorted by ESERA Article numbers and functions.



6.6 ESERA IP-SYMCON WEB FRONT

When you open the „Web Front“ , you can immediately see the status of Station 200 inputs and outputs and control the outputs.



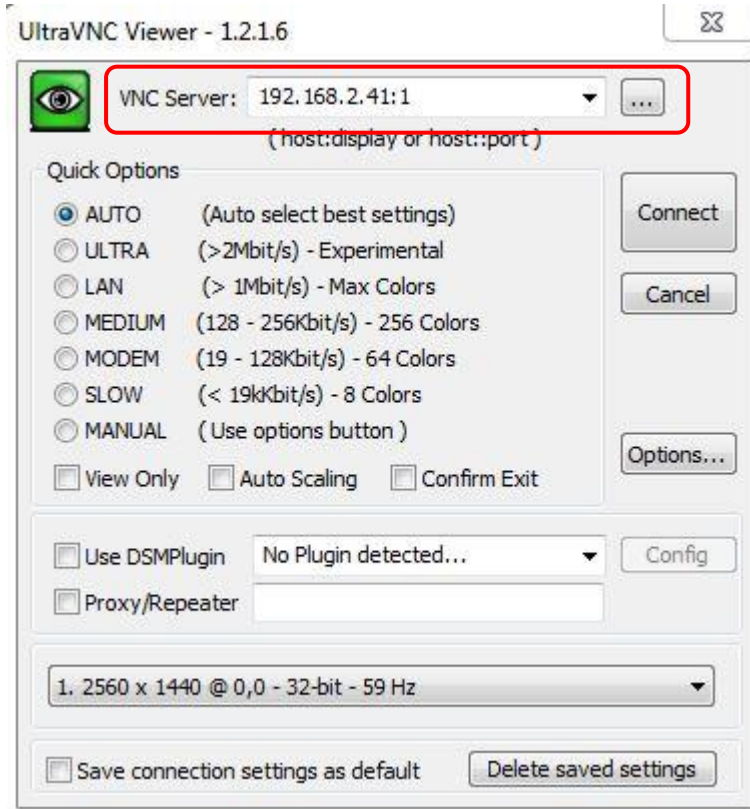
7 VNC ACCESS (REMOTE ACCESS)

Virtual Network Computing (VNC) is a remote control software that allows to control another computer via a network connection. It transfers screen content, keystrokes, and mouse clicks from one computer to another, allowing, for example, technical support personnel to access Station 200's desktop on the network without connecting a monitor, keyboard, and mouse.

You can directly access the ESERA-Station via VNC. On the ESERA-Station, the thingtvtnc is pre-installed. For access via PC we recommend the free UltraVNC.

Here you can find the Ultra VNC Software: <http://www.uvnc.com/home.html>

You can find installation instructions here: <http://www.uvnc.com/install/installation.html>



Access data:

To connect to the ESERA-Station, enter the IP address and „1“ (IP address:1)

Before IP Symcon v7:

Password: eseravnc

Starting from IP Symcon v7:

Password: eserassh

The output virtual screen has the fixed resolution of 1280x800 by default. After you have logged in, please enter your own, new password.

New Password for the VNC Access:

Start the LX Terminal and enter the command: **vncpasswd**

8 ACCESS DATA

Below are the access data for accessing the Linux operating system

User: pi

Password: esera

SSH Access (Default disabled)

User: pi

Password: eserassh

8.1 IP-SYMCON OPERATION, LINUX

The IP-Symcon WebFront (web interface) should be reachable via browser using the address:

```
http://IP-Adress Station:3777/
```

The IP-Symcon management console (ips_console.exe) is started on a Windows PC, WIN7 or higher, and can be used for configuration via IP address and port 3777. Normally, it is not necessary to enter the address manually, since the management console of Station 200 automatically detects and offers it.

How do I start and stop the IP-Symcon service?

```
sudo /etc/init.d/symcon start
sudo /etc/init.d/symcon stop
sudo /etc/init.d/symcon restart
```

Where do I find what?

```
/usr/bin/symcon – Executable
/usr/share/symcon/ - Static Data (IP-Symcon Installation)
/var/lib/symcon/ - Variable Data (Settings, Skripte, Medien...)
/var/log/symcon/ - Log Files (Logfiles...)
```

How can I check if the service is running correctly?

```
sudo ps x | grep symcon
```

How can I view/ trace the Logfile?

```
tail -f /var/log/symcon/logfile.log
```

8.2 IP-SYMCON SOFTWARE MODULS

In order to integrate the ESERA 1-Wire Controller, 1-Wire Gateway and ESERA-Station 200 into IP-Symcon, we provide libraries via github server.

ESERA IP-Symcon Moduls

<https://github.com/ESERA-Automation/IPS-Module.git>

8.3 IP-SYMCON IN ESERA STYLE

To switch IP-Symcon to the ESERA style, we provide libraries via the github server. In the delivery state of ESERA-Station 200, the Skin "ESERA Green" is already pre-installed and activated.

ESERA Skins für IP-Symcon

We provide three different green Skins via github server.

Dark Green

<https://github.com/ESERA-Automation/ESERA-skin-dark-green.git>

ESERA Green

<https://github.com/ESERA-Automation/ESERA-skin-green.git>

ESERA-british-racing-green

<https://github.com/ESERA-Automation/ESERA-british-racing-green.git>

9 DISPOSAL



Electronic devices must not be disposed of with household waste. According to the directive on waste electrical and electronic equipment, electronic devices must be disposed of at designated local collection points for electronic waste. These collection points are specialized facilities that ensure electronic devices are properly recycled and reused to minimize potential environmental impacts and recover valuable resources.

Please note that the specific collection points and procedures for disposing of electronic devices may vary depending on the region. Therefore, consult local authorities, recycling centers, or waste disposal companies to learn the correct procedure for disposing of electronic devices in your area. By properly disposing of electronic devices, you contribute to environmental protection and the sustainable use of resources.

10 SAFETY INSTRUCTIONS

When dealing with products that come into contact with electrical voltage, it is very important to observe the applicable VDE regulations. The VDE regulations are standards set by the Association for Electrical, Electronic & Information Technologies (VDE) and are designed to ensure safety when working with electrical systems and devices.

Here are some of the relevant VDE regulations to consider when handling electrical voltage:

VDE 0100

This standard defines the general provisions for low-voltage electrical installations, including planning, installation, commissioning, maintenance, and testing.

VDE 0550/0551

These standards address the safety of electrical household appliances and similar purposes. They cover requirements for household devices such as hairdryers, irons, coffee machines, etc.

VDE 0700

This standard focuses on the safety of electrical devices in commercial, industrial, and similar environments. It includes requirements for electrical machines, tools, and other devices used in these settings.

VDE 0711

This standard specifies requirements for the electrical safety of medical devices. It applies to medical equipment used for diagnosing, treating, and monitoring patients.

VDE 0860

This standard covers the safety of electronic devices used in office applications, including computers, printers, monitors, etc.

It is important that professionals working with electrical systems and devices are familiar with and follow the relevant VDE regulations to ensure the safety of people and property.

Basic Safety Rules

When working on electrical devices, always observe basic safety rules.

- **All connection or wiring work must be carried out in a de-energized state.**
It is a fundamental safety measure that all connection and wiring work on electrical systems and devices should only be done when they are not live. Never work on electrical devices while they are powered.
- Before starting work, check that the device is disconnected by unplugging it or turning off the relevant power supply.
- Be especially cautious when handling high voltages and be aware of potential hazards.
- Always unplug the device or ensure it is de-energized before opening it.
- Components, assemblies, or devices must only be operated if they are safely enclosed. They must be de-energized during installation.
- Tools may only be used on devices, components, or assemblies when it has been ensured that they are disconnected from the power supply and any electrical charges stored in the device have been discharged.
- Power cables or lines connected to the device, component, or assembly must always be inspected for insulation faults or breaks.
- If a fault is found in the supply line, the device must be immediately removed from service until the faulty line is replaced.

- When using components or assemblies, always strictly adhere to the specified electrical values mentioned in the accompanying documentation.
- If it is unclear which electrical ratings apply to a component or assembly, how external wiring should be carried out, or which external components or accessories may be connected and their connection values, a qualified electrician must be consulted.
- Before commissioning a device, always verify that the device or assembly is suitable for the intended application.
- In case of doubt, always consult experts, professionals, or the manufacturer of the used assemblies.
- We assume no liability for damages resulting from operational or connection errors beyond our control.
- Kits that do not function properly should be returned without the housing and with a detailed description of the error and the corresponding assembly instructions. Repairs cannot be made without an error description. Time-consuming assembly or disassembly of housings will be additionally charged.
- When installing and handling parts that will later carry mains voltage, always observe the relevant VDE regulations.
- Devices operating at voltages greater than 35 VDC/12mA must only be connected and commissioned by qualified electricians.
- Commissioning should only take place if the circuit is installed in an enclosure that prevents accidental contact.
- If measurements must be taken with the housing open, a safety isolating transformer or suitable power supply must be used for safety reasons.
- After installation, a required inspection must be conducted in accordance with DGUV Regulation 3 (formerly known as BGV A3).

DGUV Regulation 3 is a safety regulation for electrical systems and equipment and defines the requirements for electrical safety.

The DGUV Regulation 3 inspection includes checking the proper installation, functionality, and safety of the electrical device.

The inspection should be carried out by a qualified electrician or an authorized inspection service. The purpose of the inspection is to identify potential hazards, detect defects, and take appropriate measures to ensure electrical safety.

The DGUV Regulation 3 inspection should be repeated at regular intervals to ensure the continuous safety of electrical systems and equipment.

The DGUV Regulation 3 inspection is legally required in many countries and serves to protect people and property from electrical hazards.

Also, be aware of additional national and local regulations and standards that may apply in your region.

11 WARRANTY

ESERA GmbH warrants that the goods sold are free from material and manufacturing defects at the time of transfer of risk and have the contractually warranted characteristics. The statutory warranty period of two years from the date of invoice shall apply. The warranty does not extend to normal wear and tear. Claims of the customer for damages, e.g. due to non-performance, culpa in contrahendo, breach of secondary contractual obligations, consequential damages, damages in tort and other legal grounds are excluded. ESERA GmbH shall be liable in the absence of a warranted characteristic, in the event of intent or gross negligence. Claims arising from the Product Liability Act are not affected. Should defects occur for which ESERA GmbH is responsible, and if the replacement delivery is also defective in the event that the goods are exchanged, the purchaser shall be entitled to cancel the contract or reduce the purchase price. ESERA GmbH accepts no liability for the constant and uninterrupted availability of ESERA GmbH or for technical or electronic errors in the online offer.

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