WaterPointer Quick Start Guide

Version 1.0, August 2018

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1 What is the WaterPointer

The WaterPointer is a mobile system to monitor surface water and take a sample into cooled sample canister if predefined conditions appear. The system is fully operated using your browser, no matter if you stand in front of the machine or 1000 kilometers away.

2 Operation

2.1 User Interface

2.1.1 Local:

After you powered up the unit wait about 1 minute until the internal computer is booted up, then connect your laptop to “User” marked LAN interface and start the laptop up. Now the laptop gets the right IP address from the WaterPointer to communicate with you. Open a modern browser of your choice and type 172.17.2.140 into the address line. The Login screen appears.

2.1.2 Remote:

The unit need to be powered on and need to be connected to the internet. Open a modern browser of your choice and type in waterpointer-JJJJ-SSSSS.recordum.net. JJJJ-SSSSS is the serial number of your unit. Please note your serial number here:

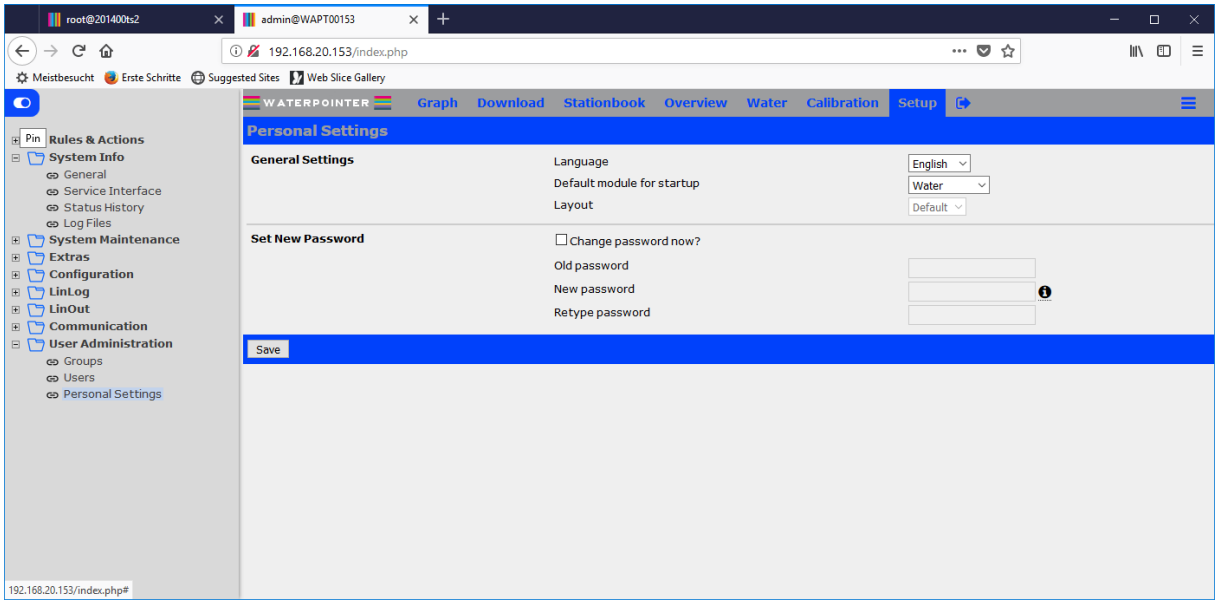
waterpointer-____-_____.recordum.net

2.1.3 Login:

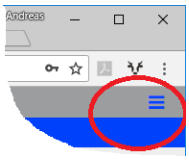
Login into the user interface with

User: admin
Password: 1AQuality

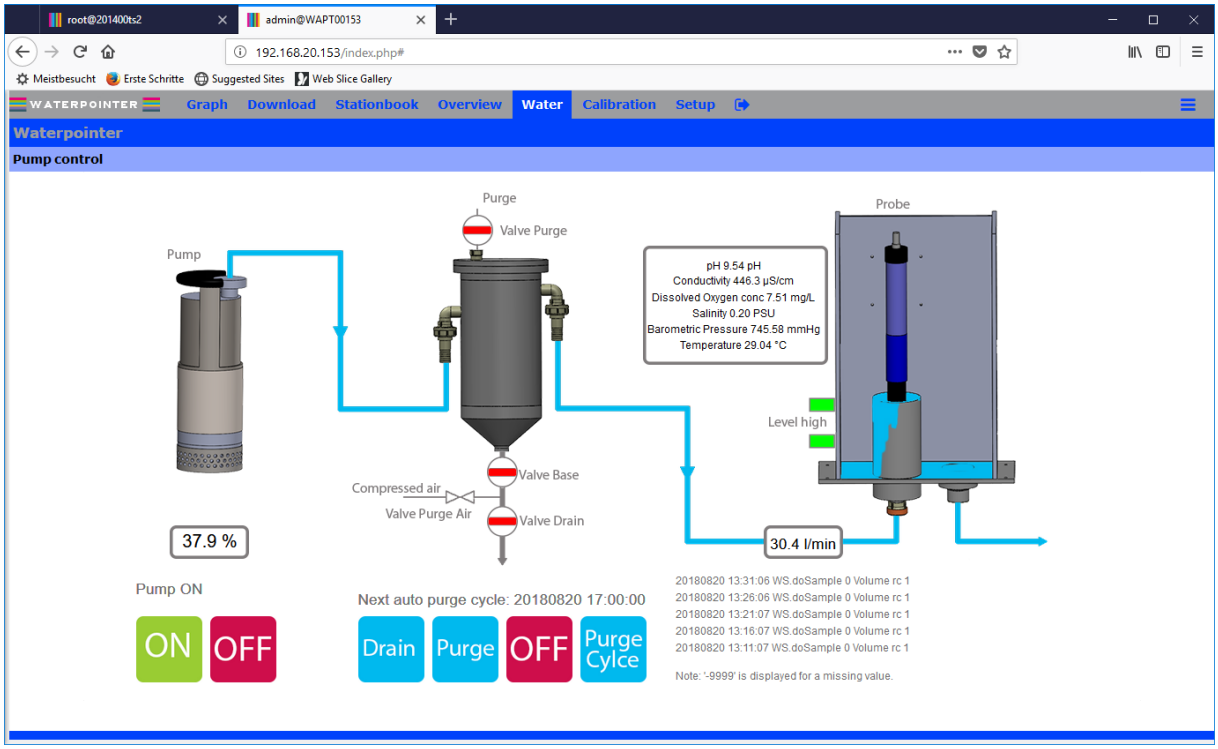
It is highly recommended to change this password using Setup->User Administration->Personal Settings because this login is default on all devices.



Hint: To open the menu tree on the left, click on the symbol with the three lines on the right upper corner!

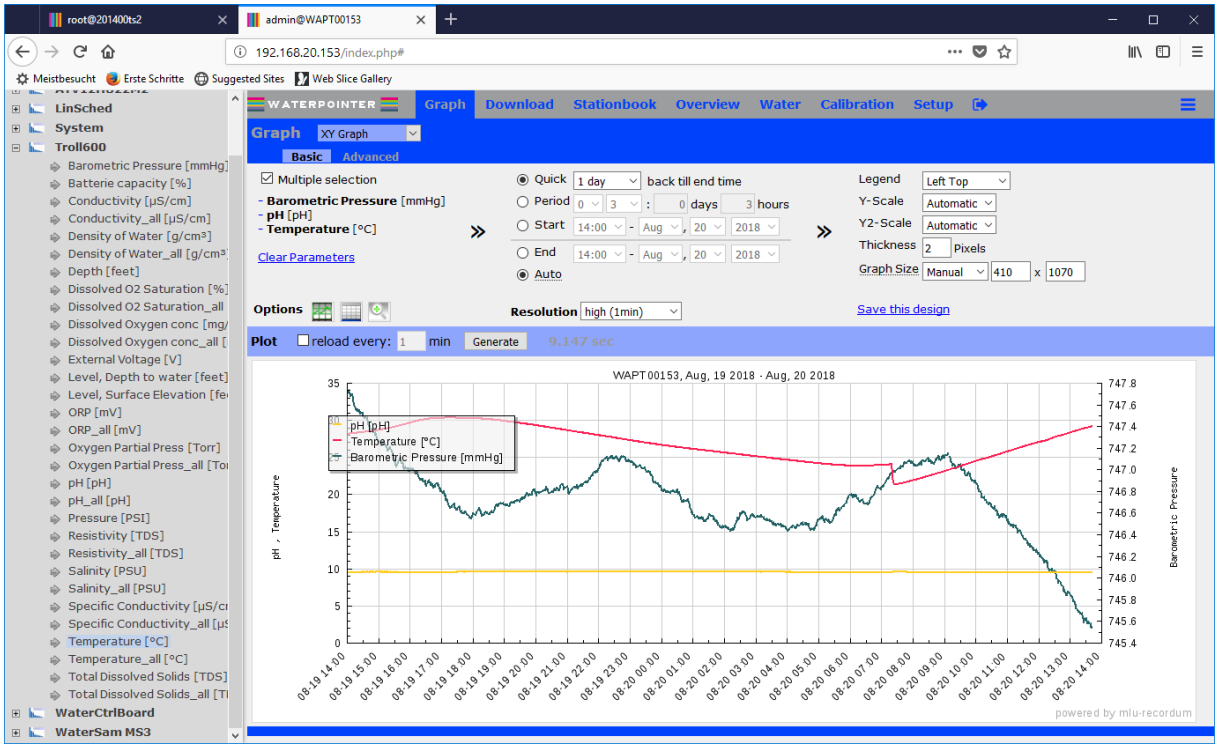


2.1.4 Main page:



On the left side you find the symbol of the pump and the percentage of power needed to reach the flow that is configured (30l/min default). In the middle the filter for sand or other heavy particles is displayed. This “sand filter” is drained and purged out every 4 hours (as default setup). On the right side the measuring probe is situated, and its measured values are shown.

2.1.5 Graph:

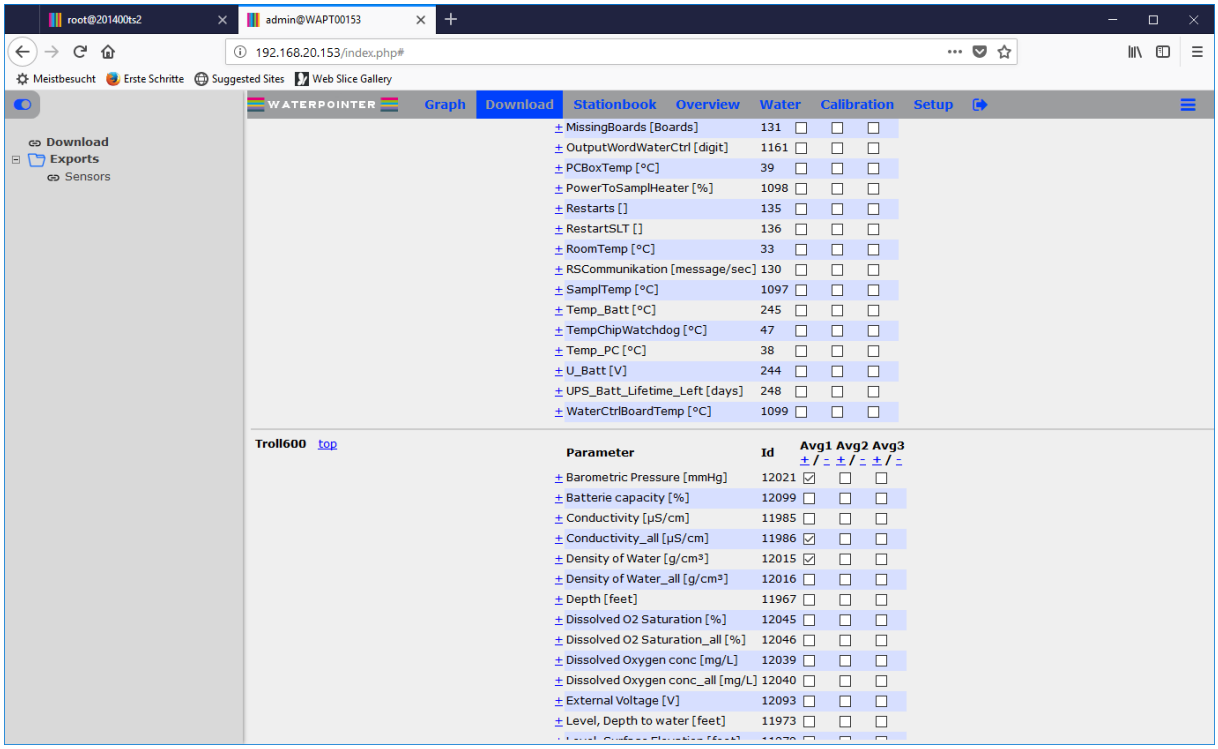


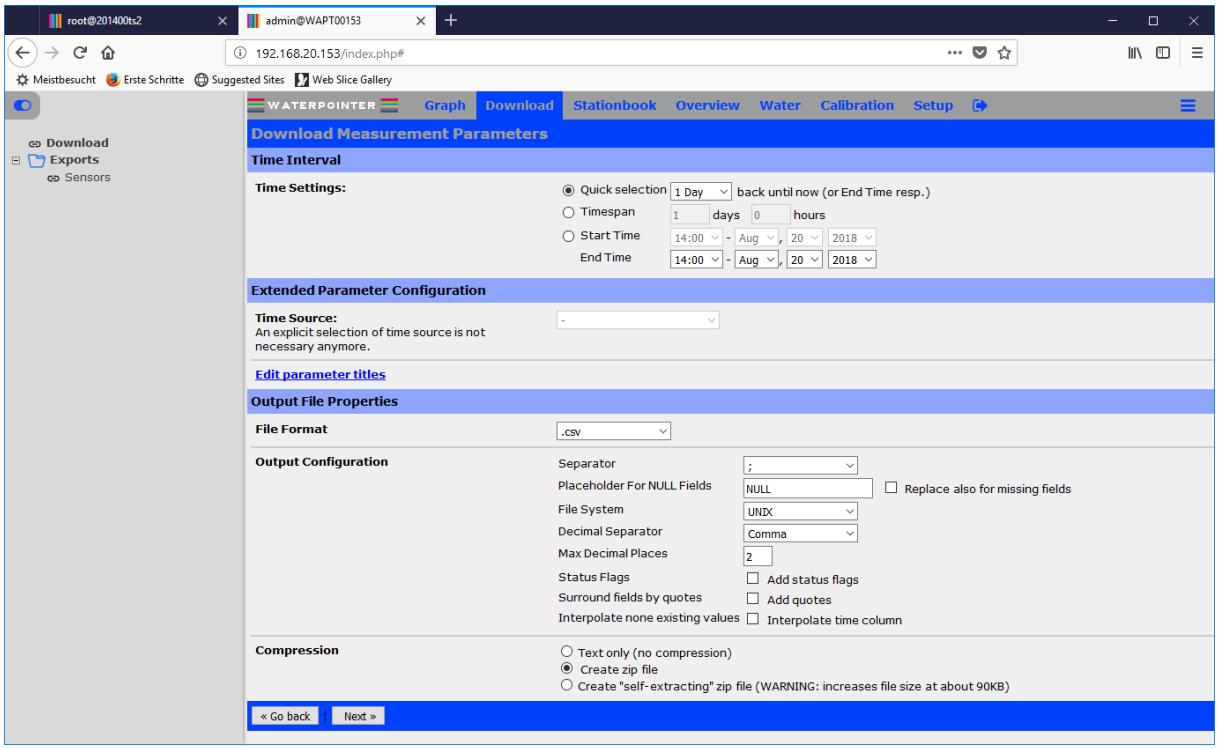
All parameter measured are stored in the database in three averages in parallel, default is 1min, 5min and 30min. You are able to change the second and third average to your needs in Setup->Configuration->System Parameters->Timing.

Hint: There are some parameter twice in the list, one is for example Conductivity and the other Conductivity_all. This needs a little explanation: In case of a status fail, an active maintenance (or a calibration in some cases) the final result of Conductivity is not taken into the average because it is not a correct measurement. To give the technician a chance to check these values also we store the parameter a second time with ALL data in, this results in the parameter xxxx_all.

Hint: If you want to use this graph in Microsoft Office, click right and copy it. But you cannot use it directly in Word, paste it into Microsoft Paint, copy it again then you can paste it everywhere.

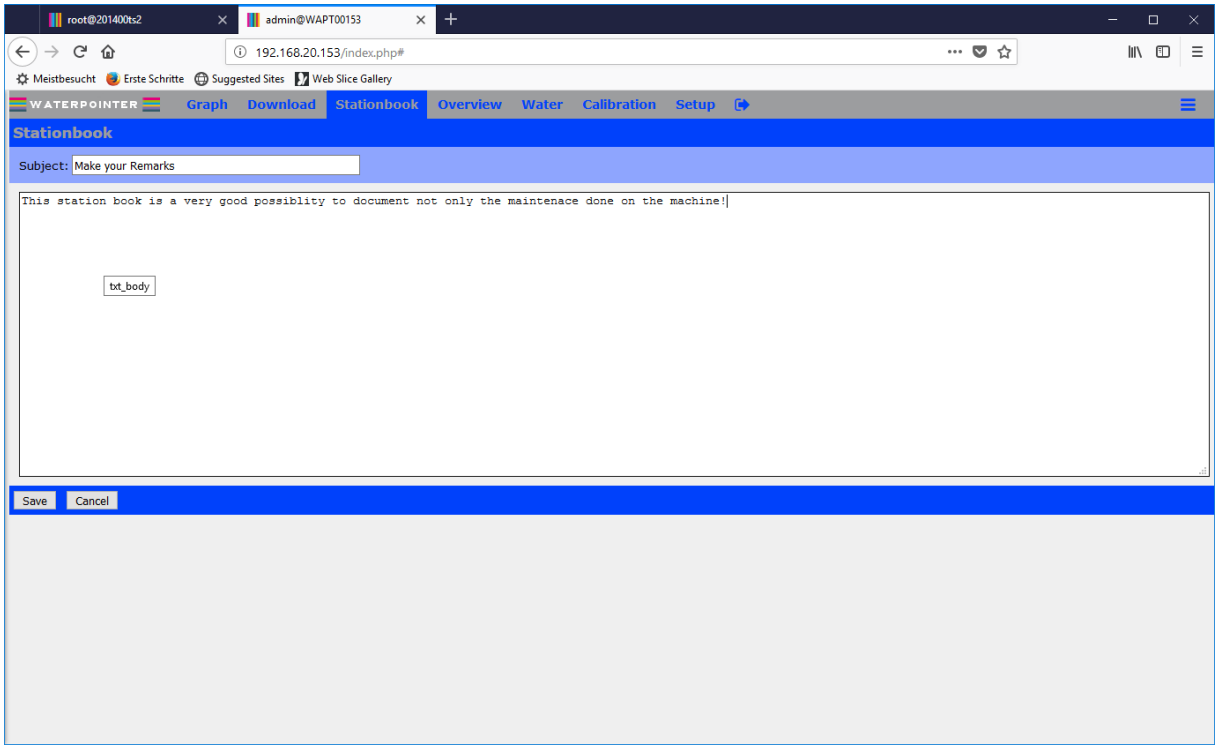
2.1.6 Download:





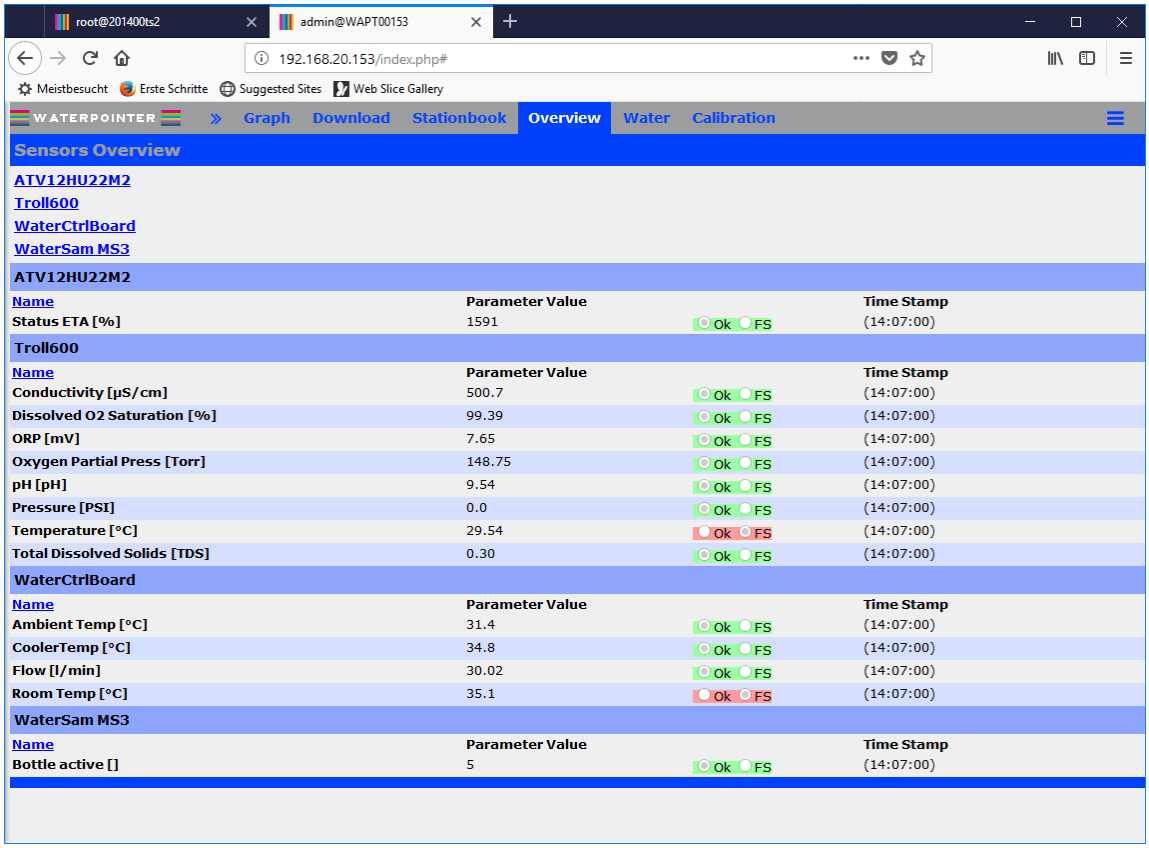
With the download function you can copy data from the WaterPointer to your Computer. Choose the parameter in the average you need and setup the time and the output properties to your needs. With the resulting file you have data in csv or xml format that can be easily opened by Microsoft Excel.

2.1.7 Stationbook:

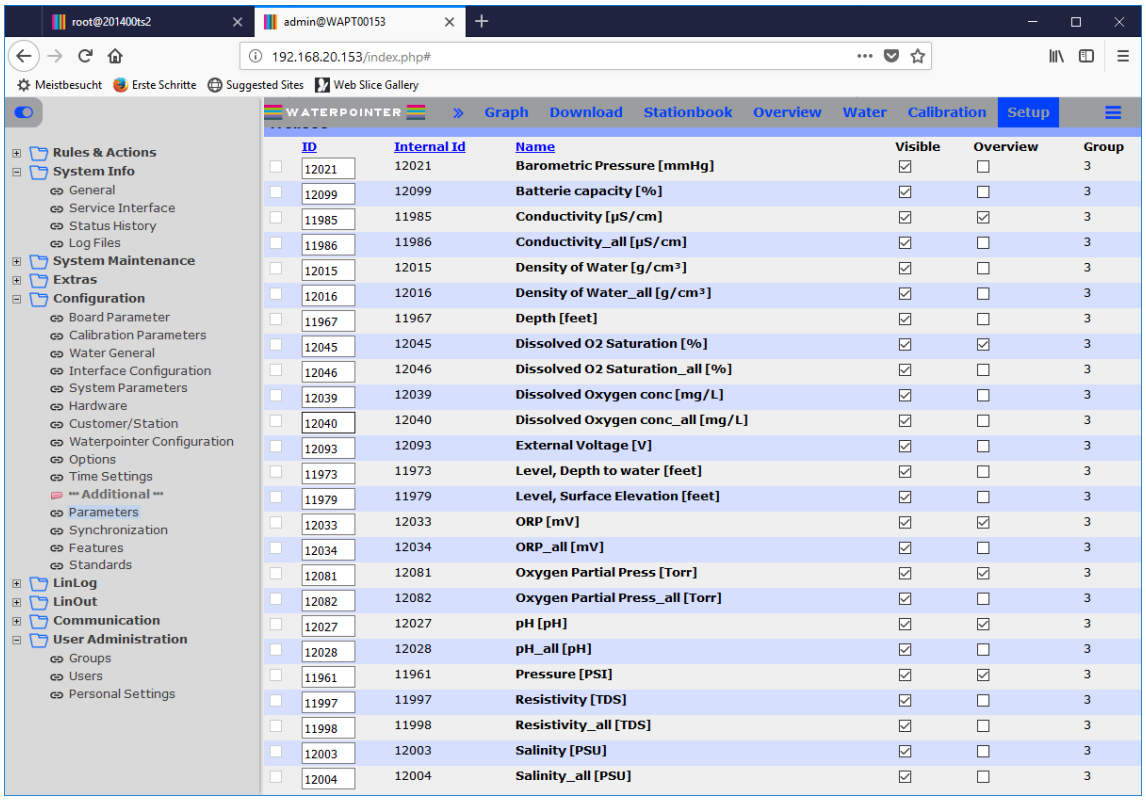


This station book is a very good possibility to document not only the maintenance done on the machine!

2.1.8 Overview:

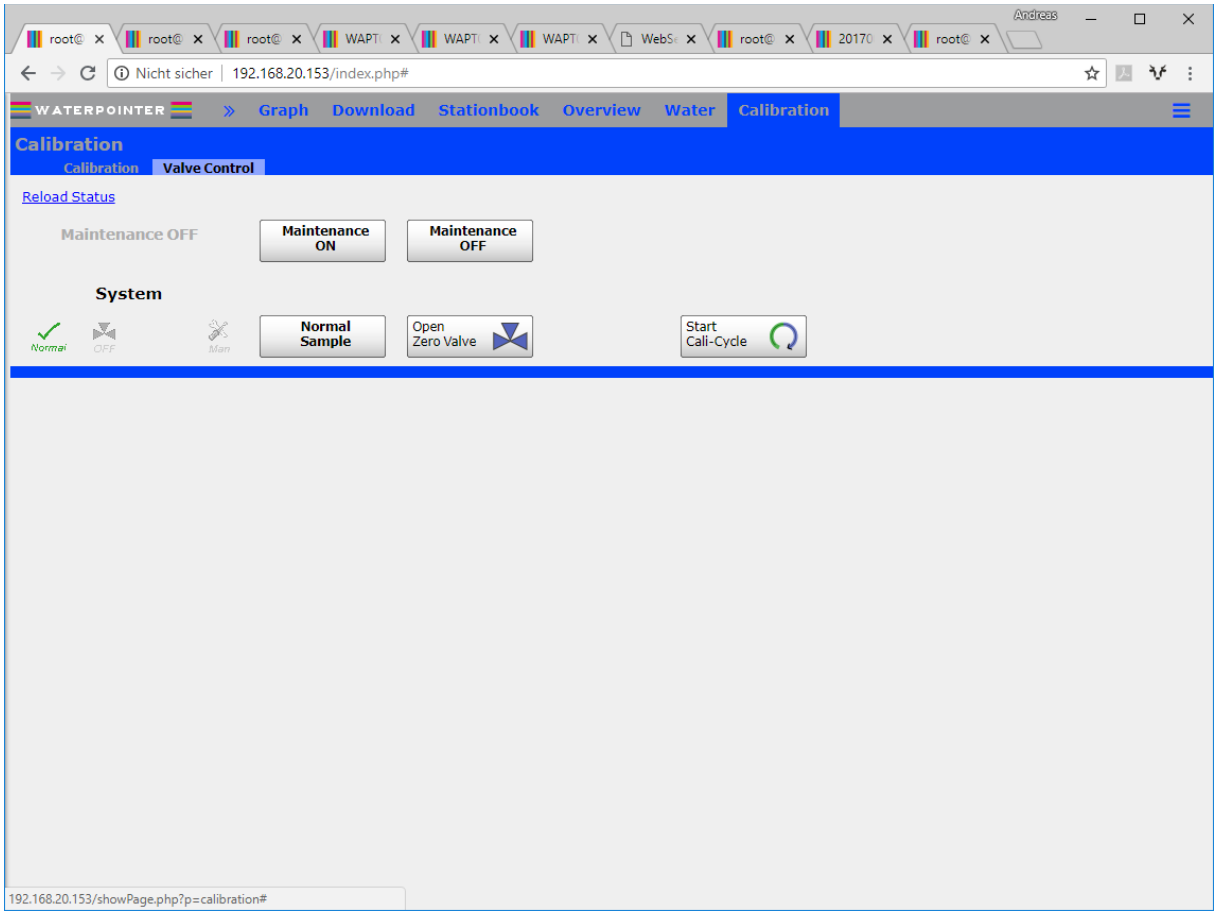


In overview you can have a fast view if everything is working fine on your WaterPointer. As soon a Rule is triggered by a parameter displayed here, the display change to red. You can choose the parameter displayed in Setup->Configuration->Parameters.



2.1.9 Calibration:

Is not used in default setup and only here for compatibility. But you can switch on and off maintenance mode. In maintenance mode the main data is not stored to the averages as they are not valid results from the surface water.

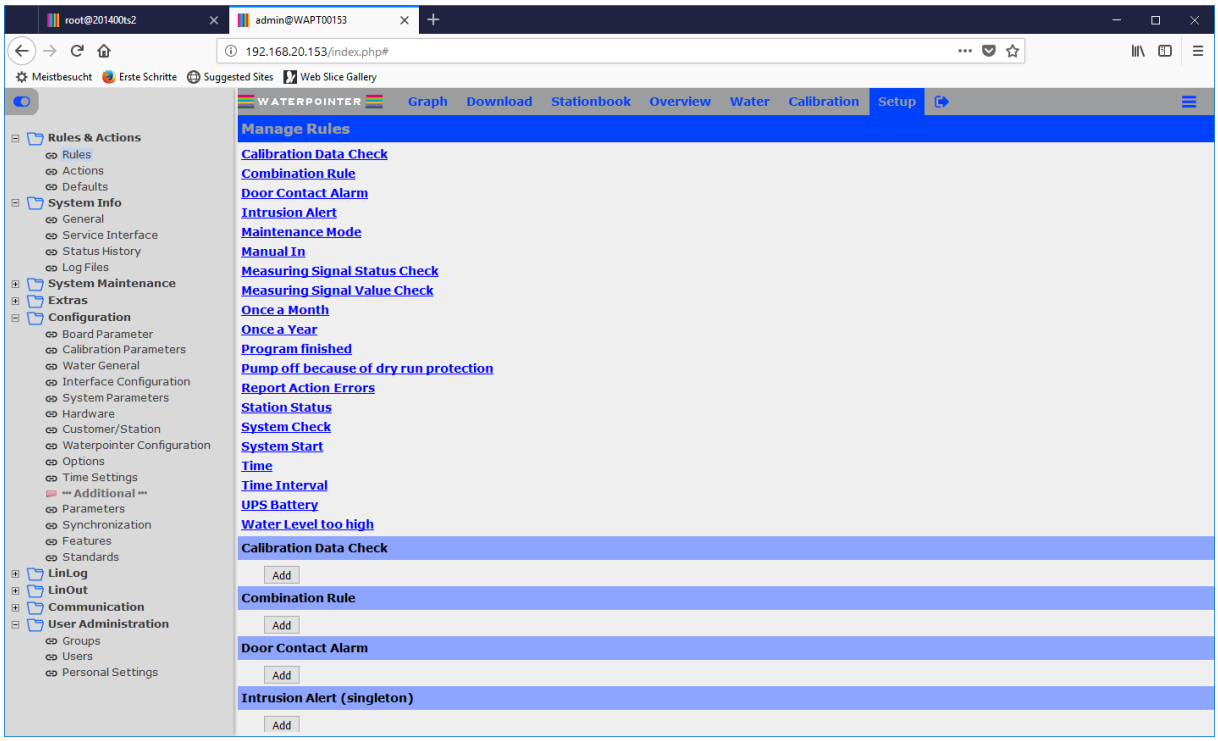


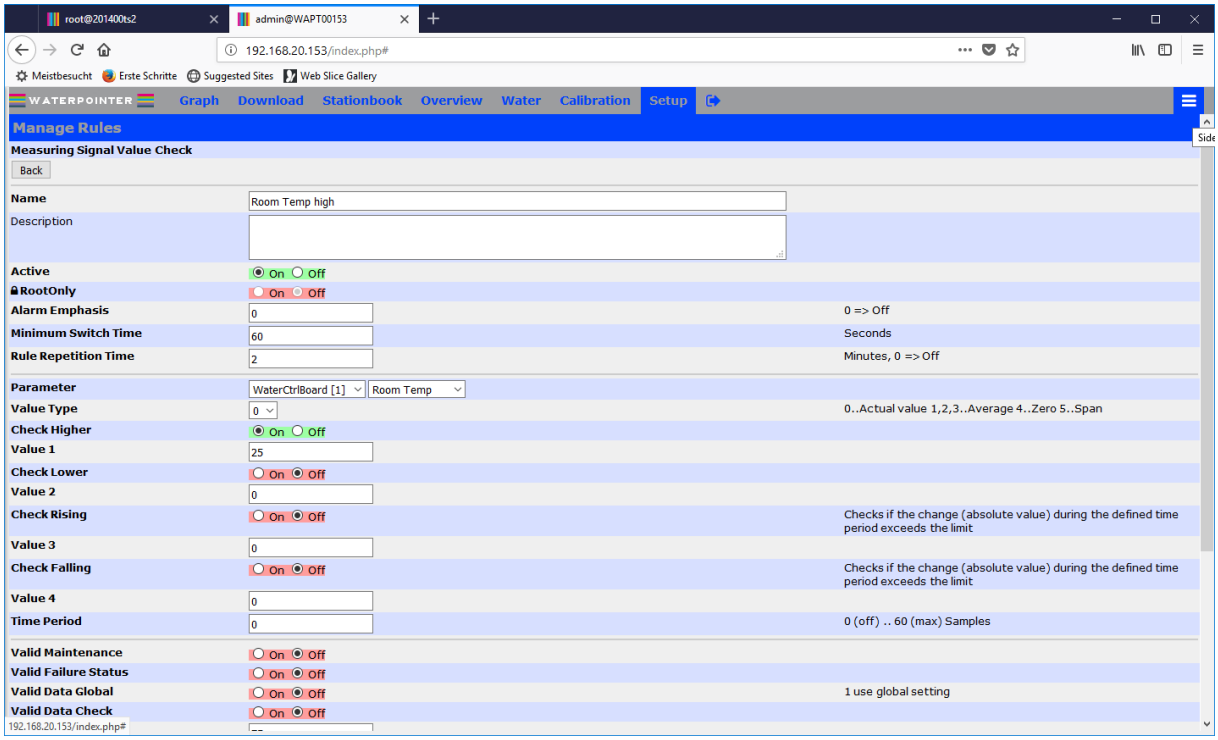
2.1.10 Setup:

Only a little part is shown in this Startup Guide, generally change settings only if you are sure what you are doing.

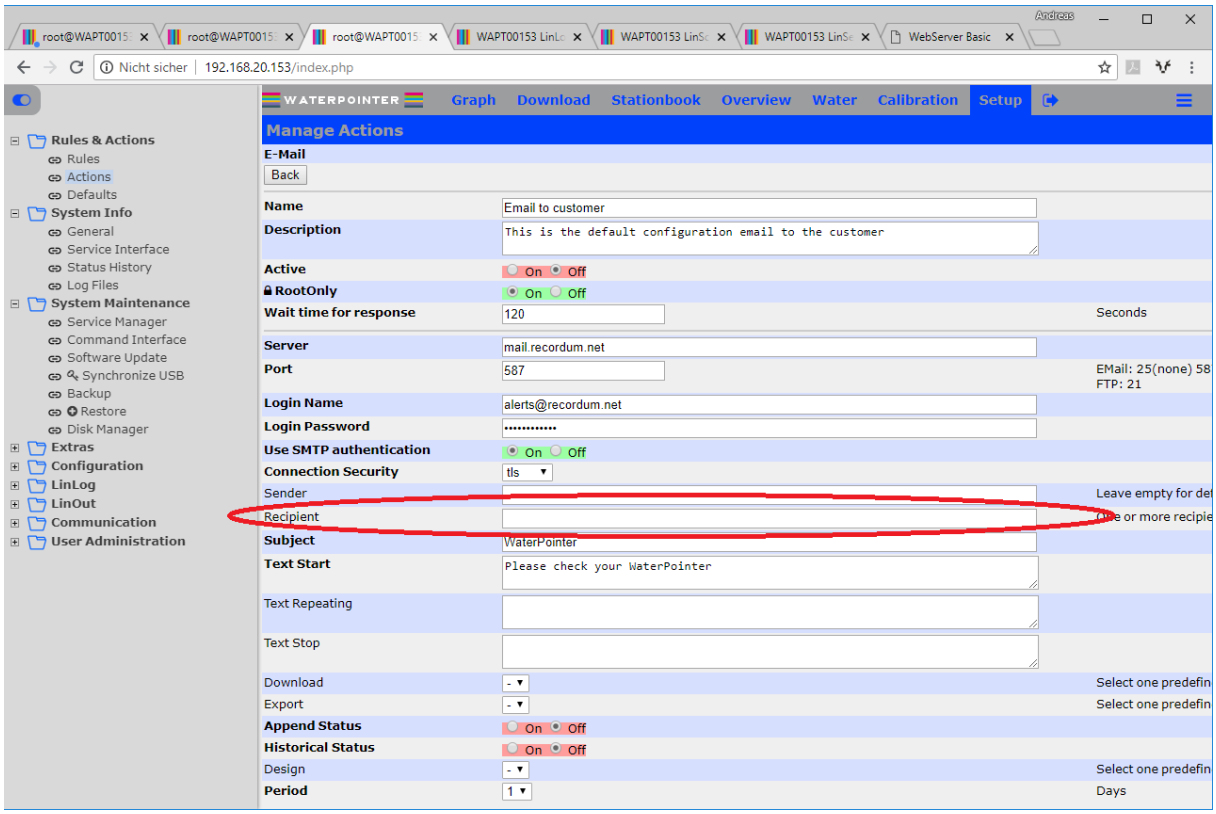
2.1.10.1 Rules and Actions:

Rules and actions is a software package that allows to define rule like the room temperature is too high, this rule can be connected to an action like send an Email to Mr. Clark.





A few rules are predefined as example “System Check”, if one of the two HDD starts to see problems recordum will receive an Email from the machine. There are a few more rules configured to help you during startup of the WaterPointer, make sure you put your Email Address in the “Email to customer” action:

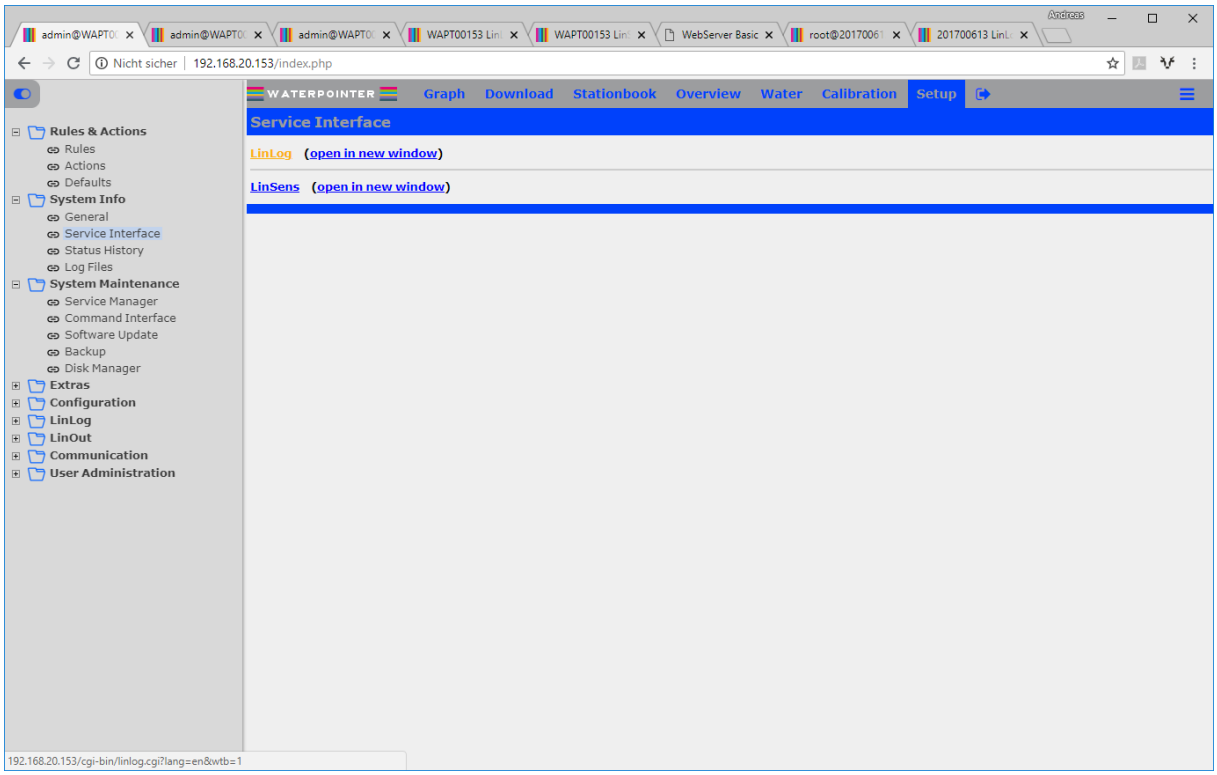


2.1.10.2 System Info

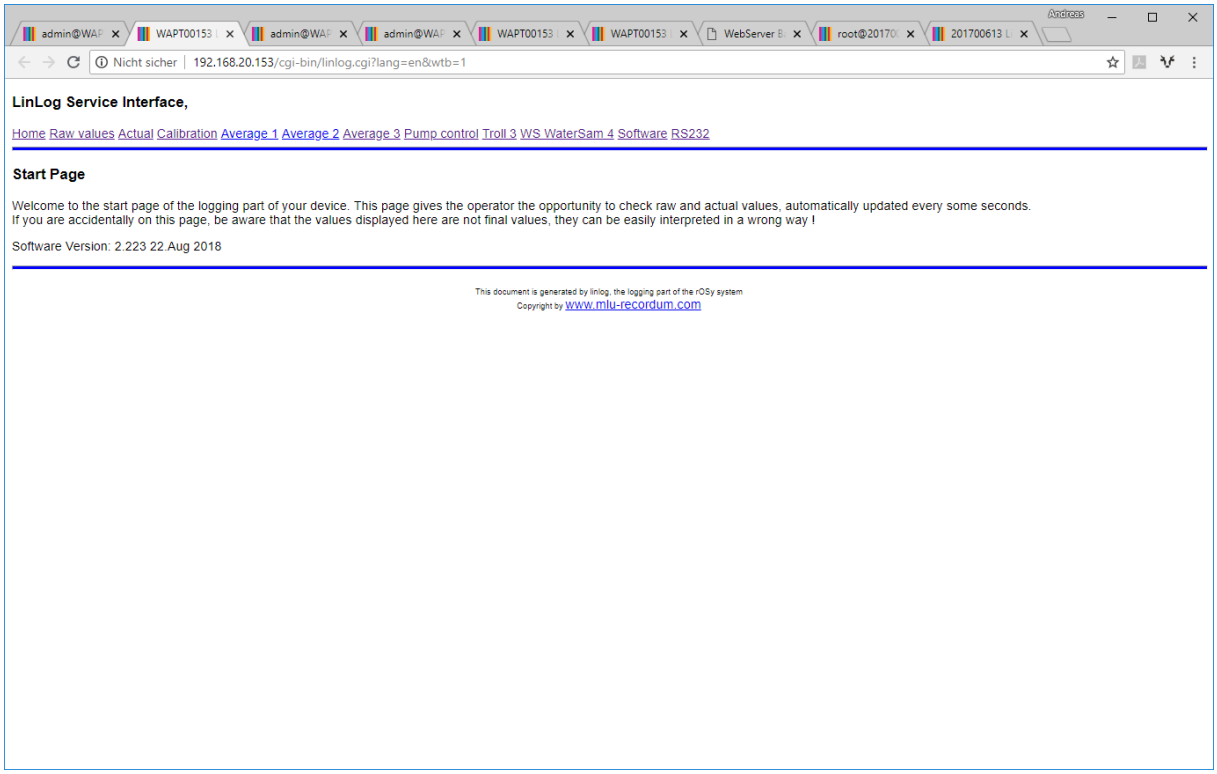
The main points on startup are Service Interface and Log Files.

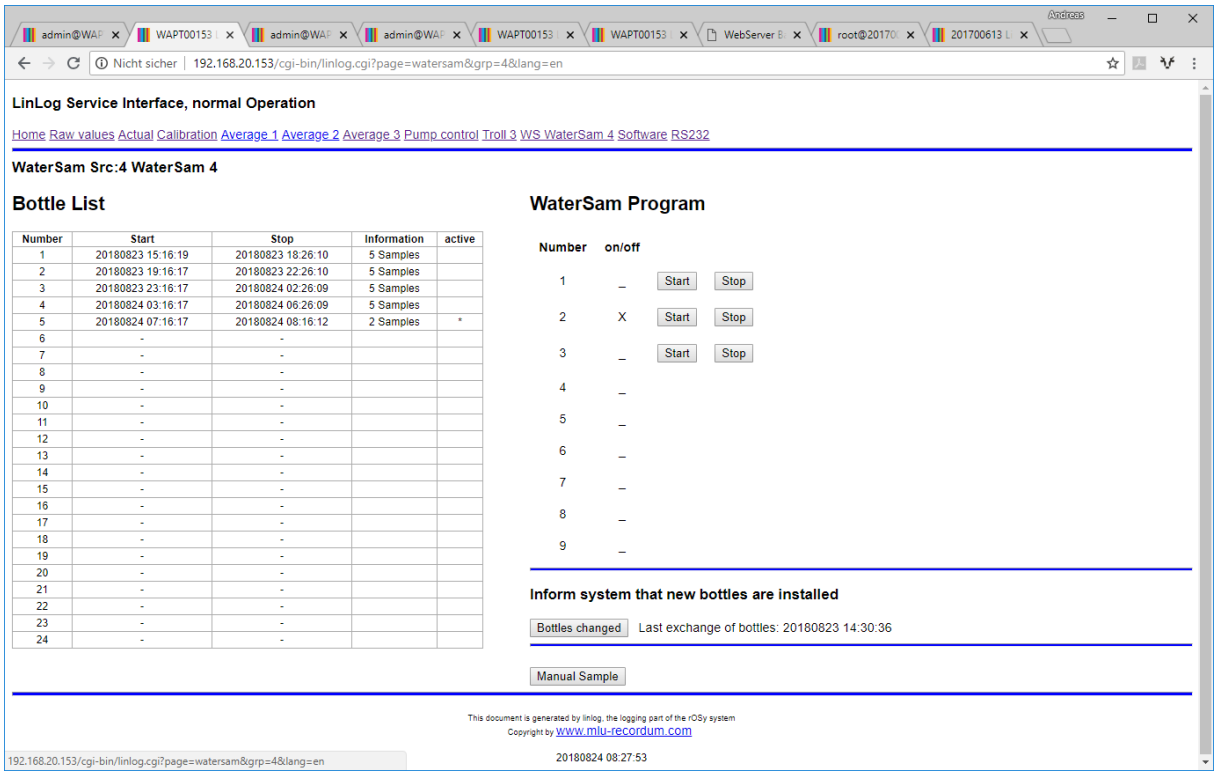
2.1.10.2.1 Service interface:

The user interface, that is mostly used, is a nicely designed piece of software for user operation based on averages. As the shortest average is 60 seconds, the maintaining technician needs access to live data. For this reason, the technician is using the Service Interface.

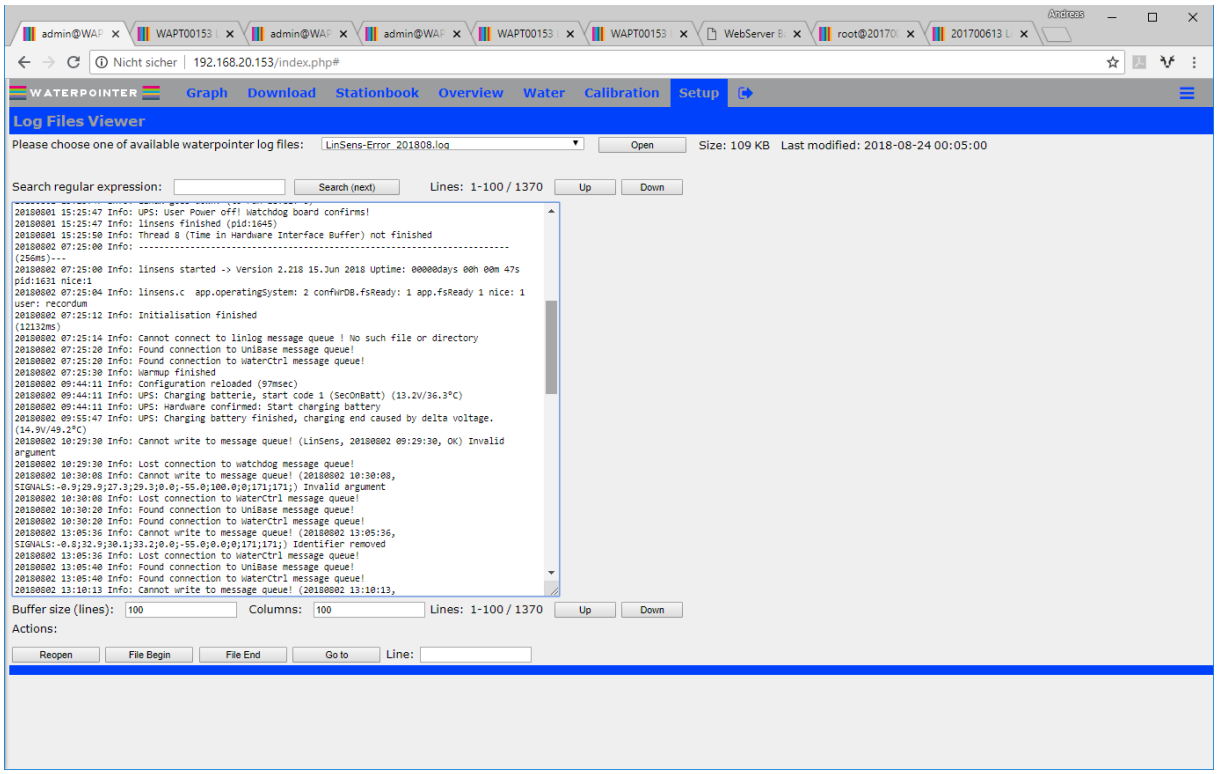


After clicking on LinLog the Service Interface pops up:





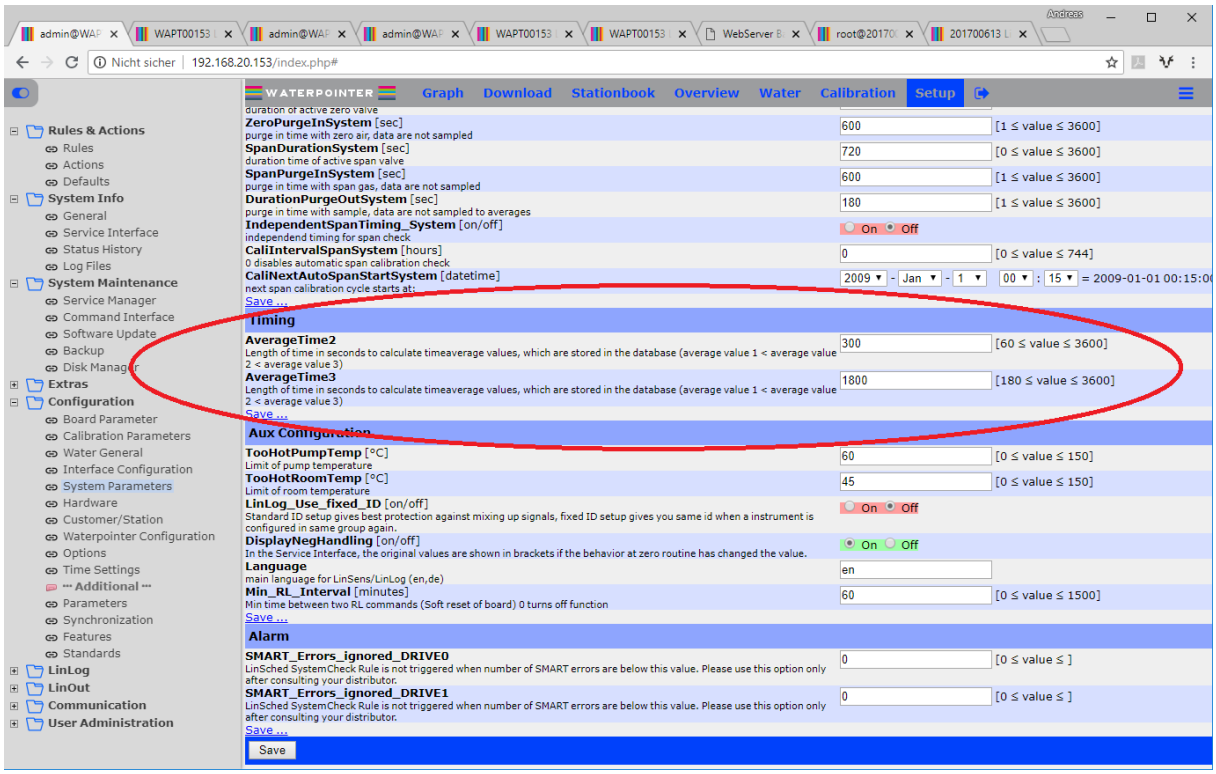
2.1.10.2.2 LogFiles:



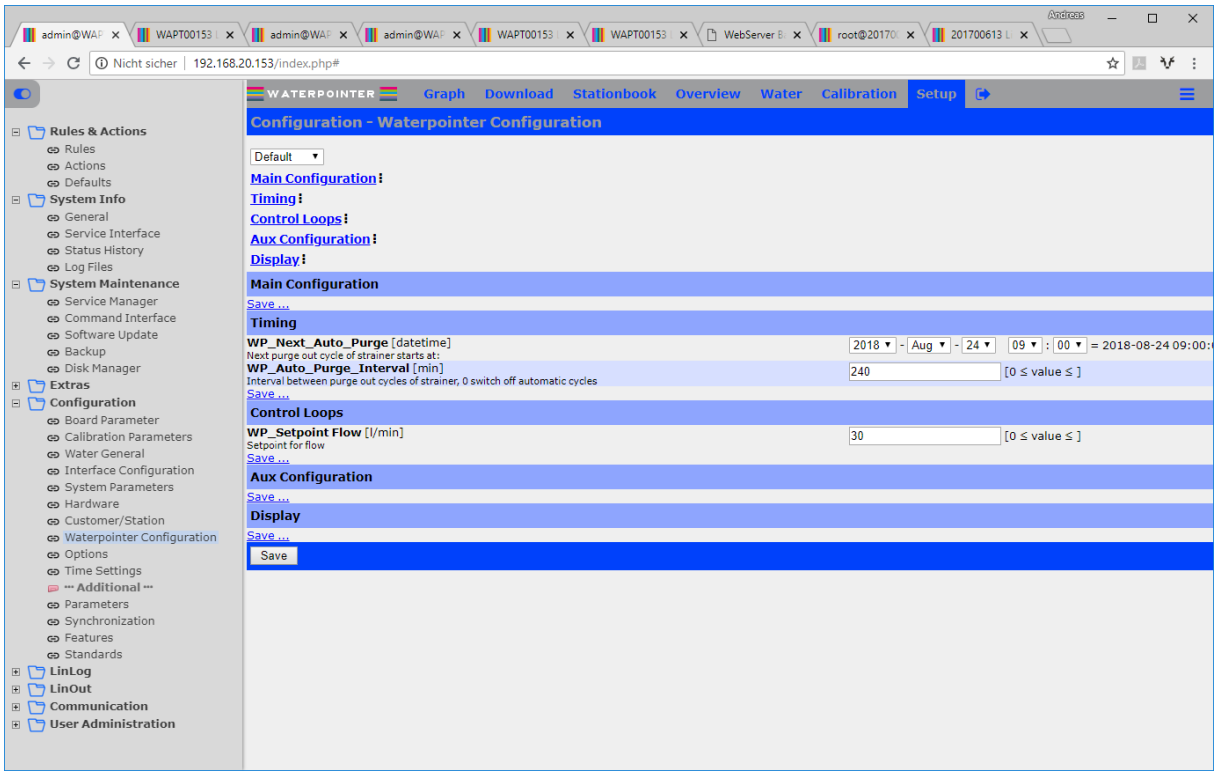
Sometime, like during the modem setup it is necessary to check the log files this can be done here.

2.1.10.3 Configuration:

You can setup the averaging times in System Parameters (the other parameters are not relevant for the WaterPointer

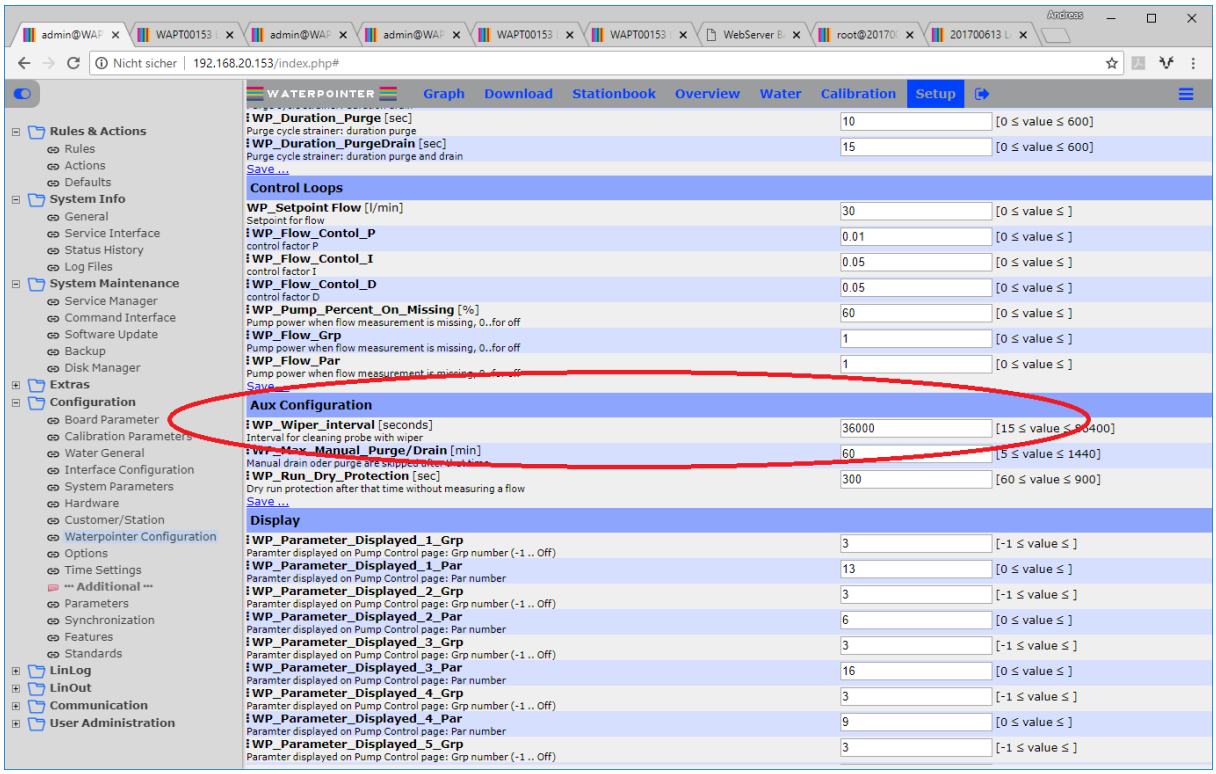


WaterPointer Configuration



Here you can setup the setpoint for the flow. 30l/min is the recommended flow, values up to 60l/min are possible.

Changing from Default to Advanced enables one more important setup for you that is the Wiper Interval:



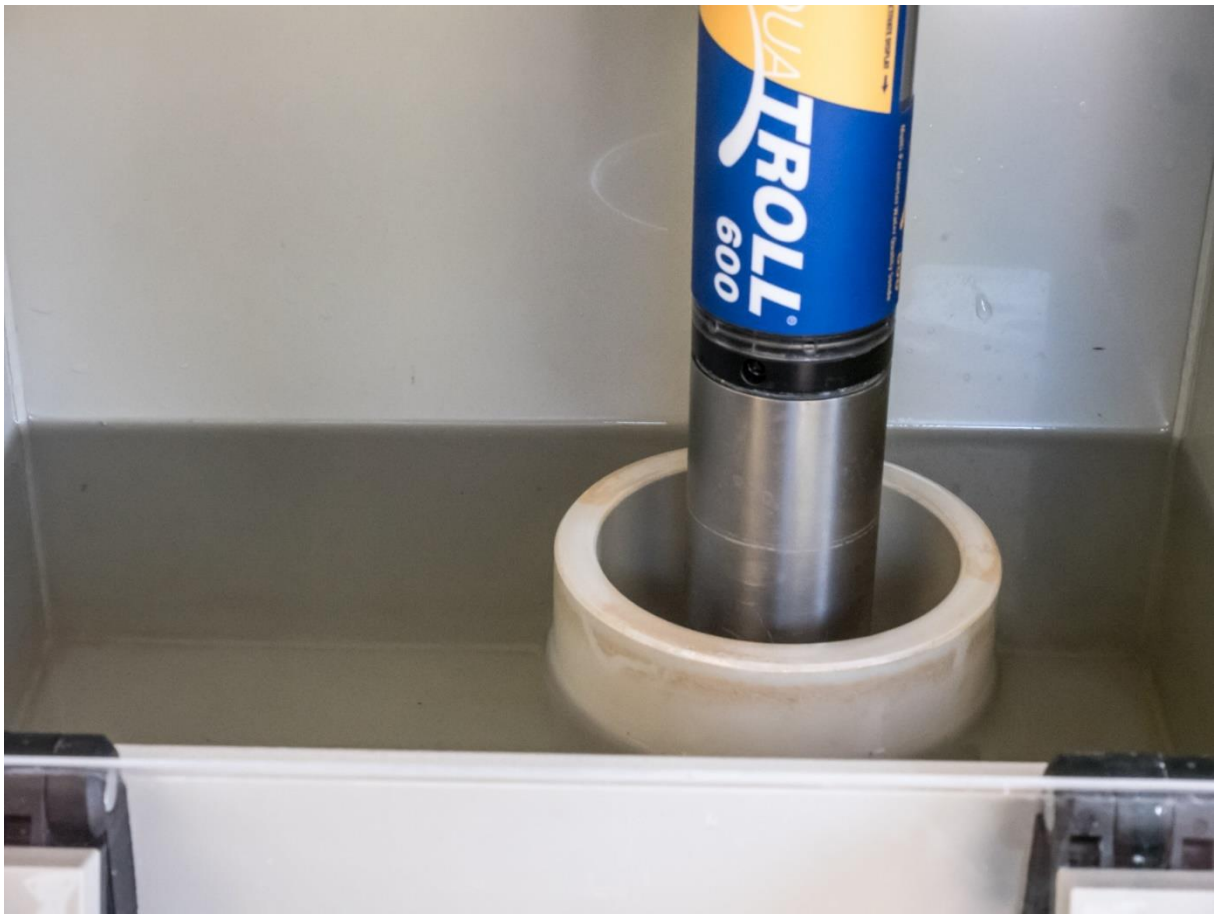
The wiper is a build in brush that cleans the sensors in the time interval you configure.

3 Measurement Probe Insitu Troll600

The Insitu Troll600 measurement probe is for sure one of the best possibility to measure water parameters. This probe consists out of the build in computer system and several sensors that can be plugged in. Each sensor stores internally its calibration that allows to prepare and calibrate the sensors in your lab (with an second probe) and just exchange the sensors on site. Of course, the calibration can be done on site also. Please refer the extra Insitu manual for details on calibration and maintenance.

Hint: Make sure the sensor is always in water also during storage and transportation to avoid damage to the sensors. You can simply fill up the cap with water and screw it on.

The measurement compartment it is purged with fresh sample water from the lower side and water is flowing over. If the drain is blocked the water level can rise and flood the system. To avoid these two sensors are built into the wall detecting high water. This immediately stops the pump until the water is removed.



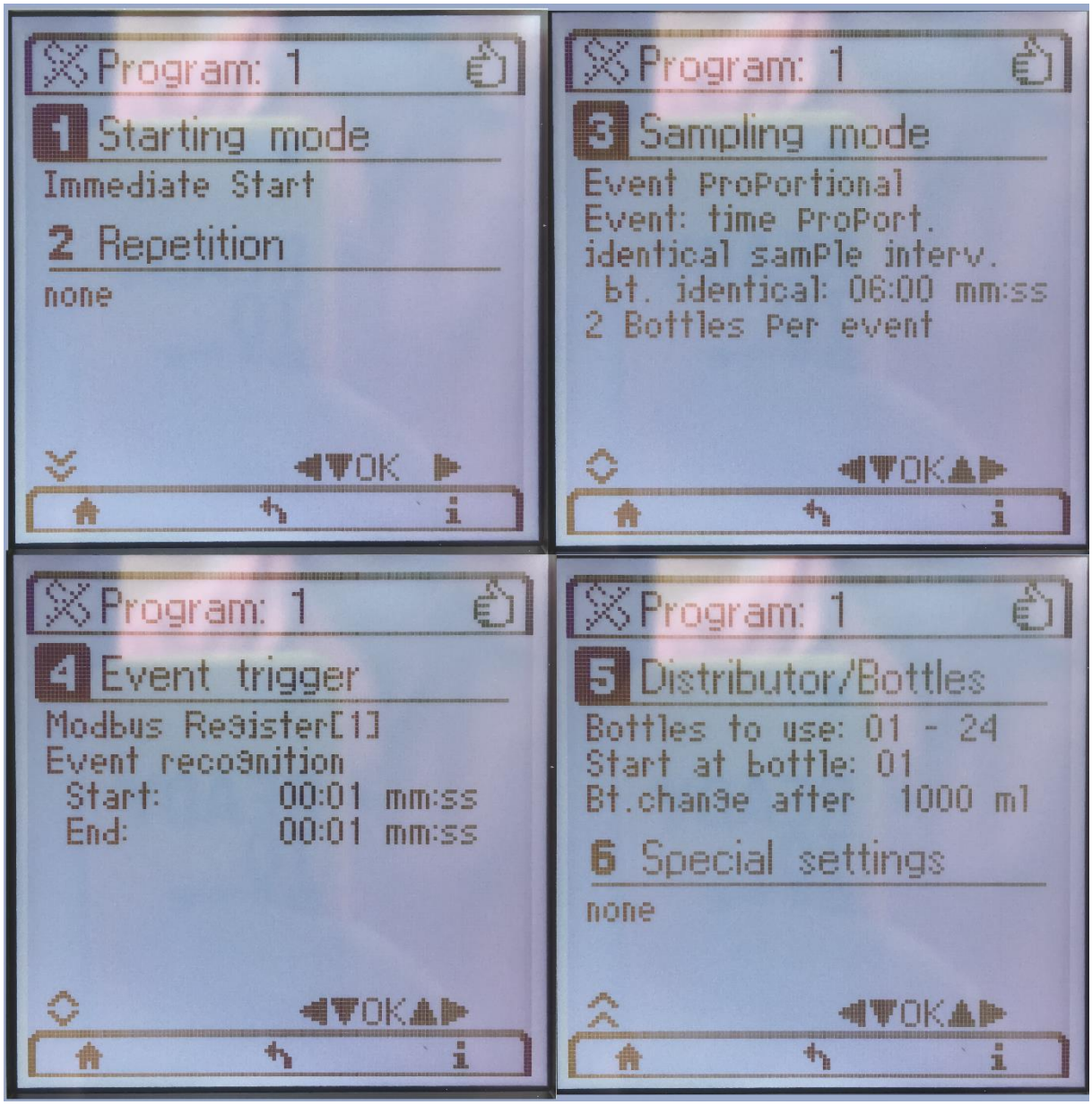
4 Setup and working with WaterSam Sampler

The German made WaterSam sampler is equipped with a cooled storage room for 24 bottles with 1Liter capacity. On delivery the unit is configured to take a sample with one shot of 200ml sample. If you need a different setup here please refer to the WaterSam manual.

If wished it can run by its own control system taking samples depending on its configuration. In most cases it makes sense to run it with in the WaterPointer system. To do this two “programs” are configured as default on delivery.

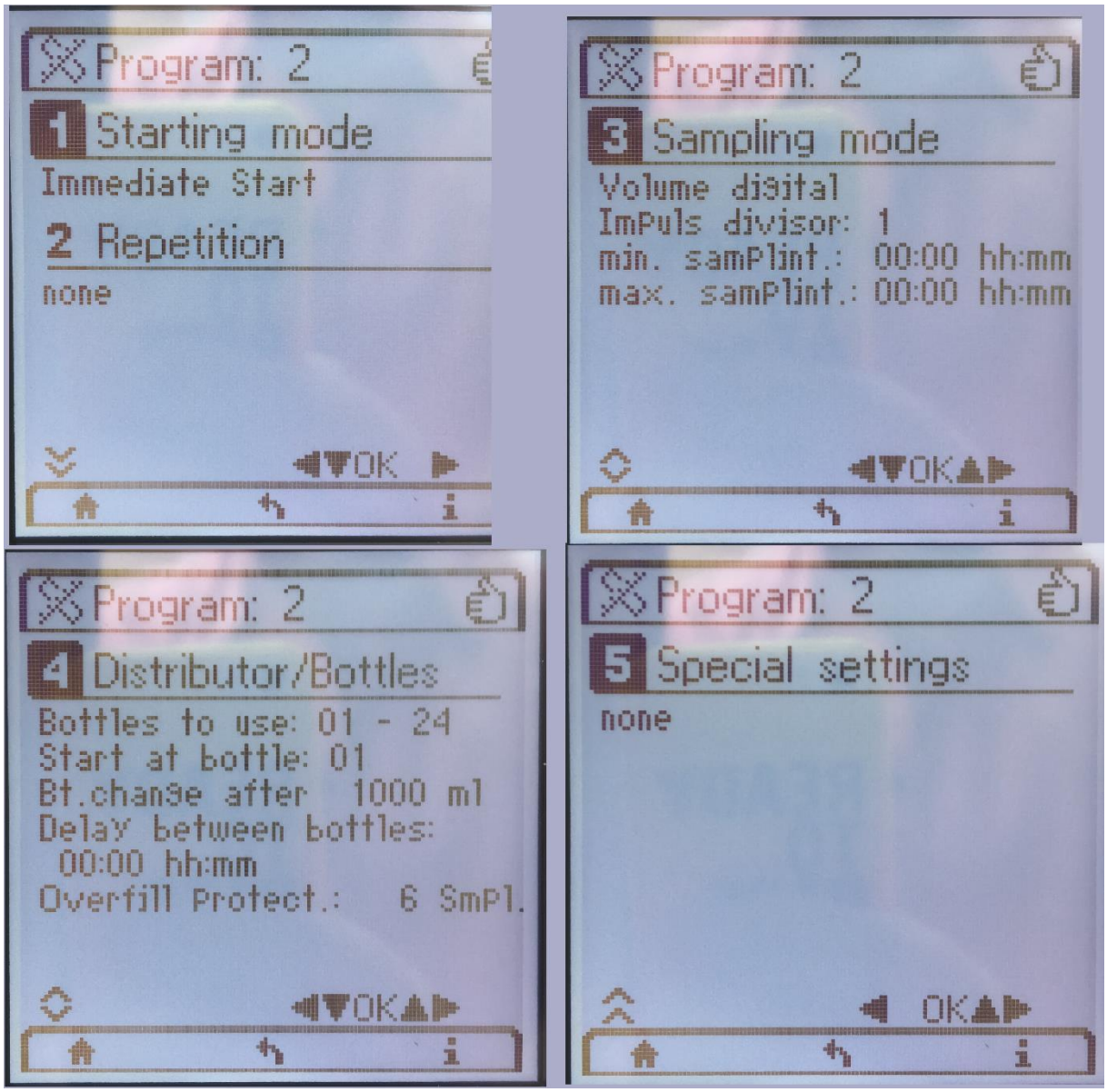
Program 1 is using the Modbus Register for the ‘Event sampling’. This means as soon a Rule triggers the Action “WaterSam Sample” of type event proportional the Input is set active until the rule is not triggered anymore. The WaterSam program defines how many samples are taken during that time.

Program 1

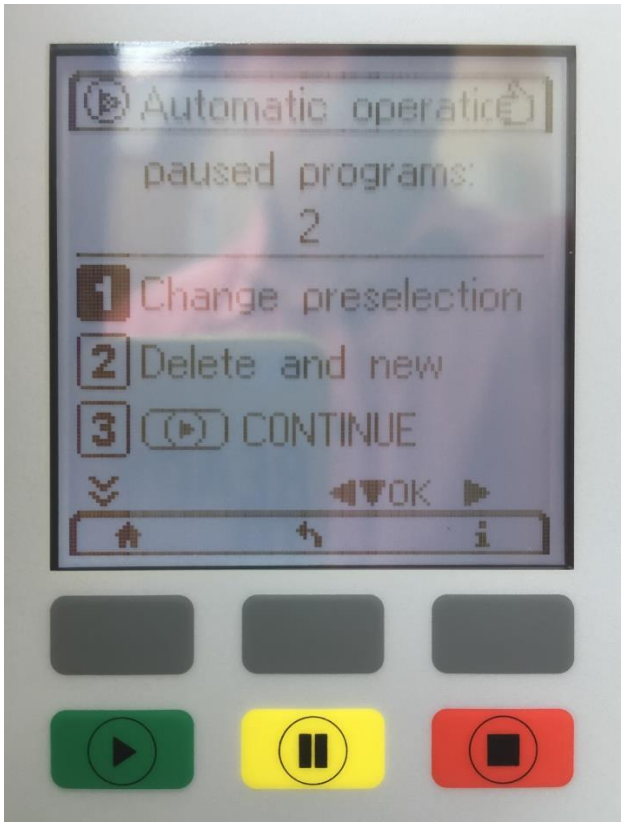

Program: 1
1 Starting mode
Immediate Start
2 Repetition
none
OK
Program: 1
3 Sampling mode
Event ProPortional
Event: time ProPort.
identical sample interv.
bt. identical: 06:00 mm:ss
2 Bottles Per event
OK
Program: 1
4 Event trigger
Modbus Register[1]
Event recognition
Start: 00:01 mm:ss
End: 00:01 mm:ss
OK
Program: 1
5 Distributor/Bottles
Bottles to use: 01 - 24
Start at bottle: 01
Bt.change after 1000 ml
6 Special settings
none
OK

Program 2 is using the Modbus Resister for Volume digital that make one peak and triggers one sample. That's the method that is easier to configure for me.

Program 2

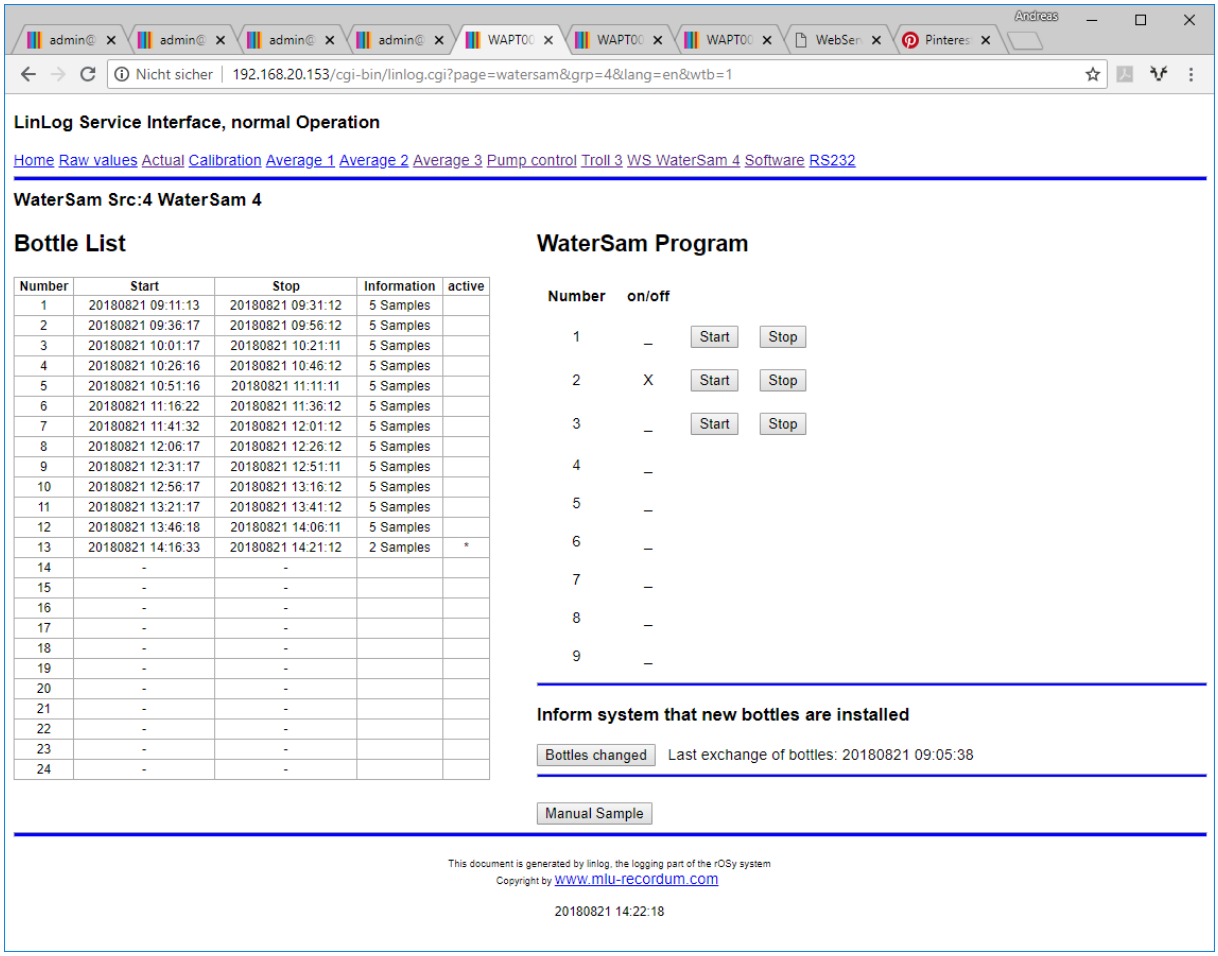


What programs should be started automatically is defined as preselected programs.

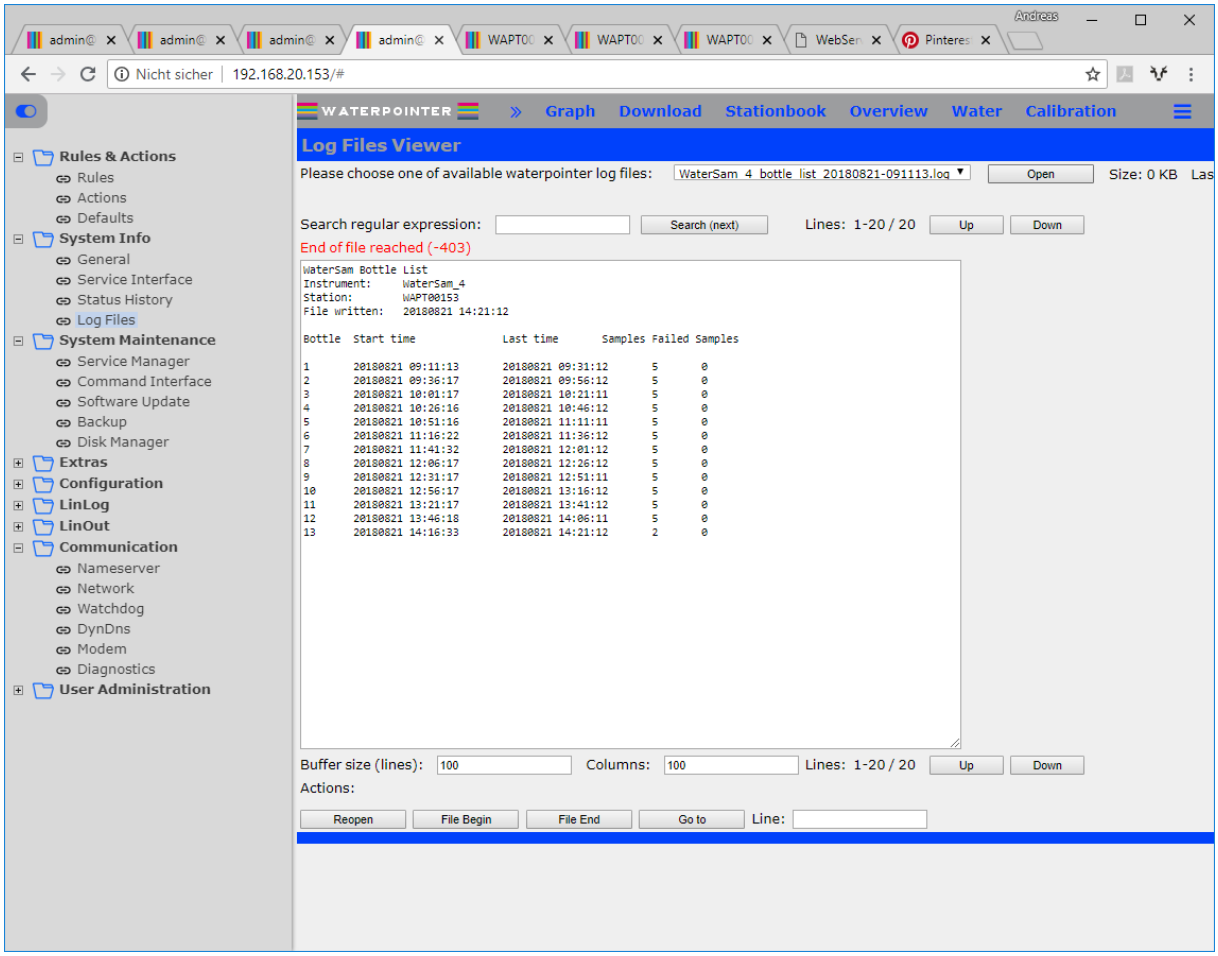


It is very important to understand that every time a program restarts or is manually restarted the sampler expects that you have taken out the filled sample bottles and empty sample bottles are in the machine. If you overlooked this fact the sampler will overfill bottles and water will drain out.

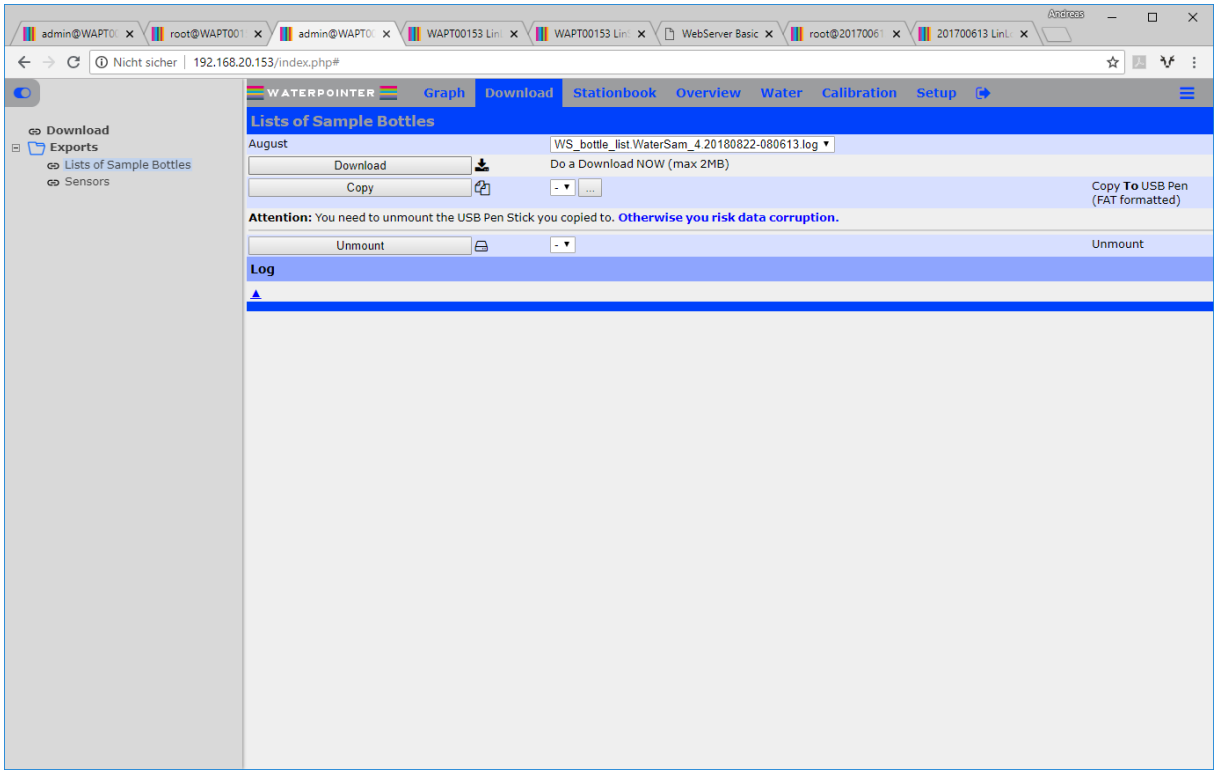
You also should click on <Bottles changed> in the LinLog Service Interface, this let the software startup a new table with information about the samples in the bottles:



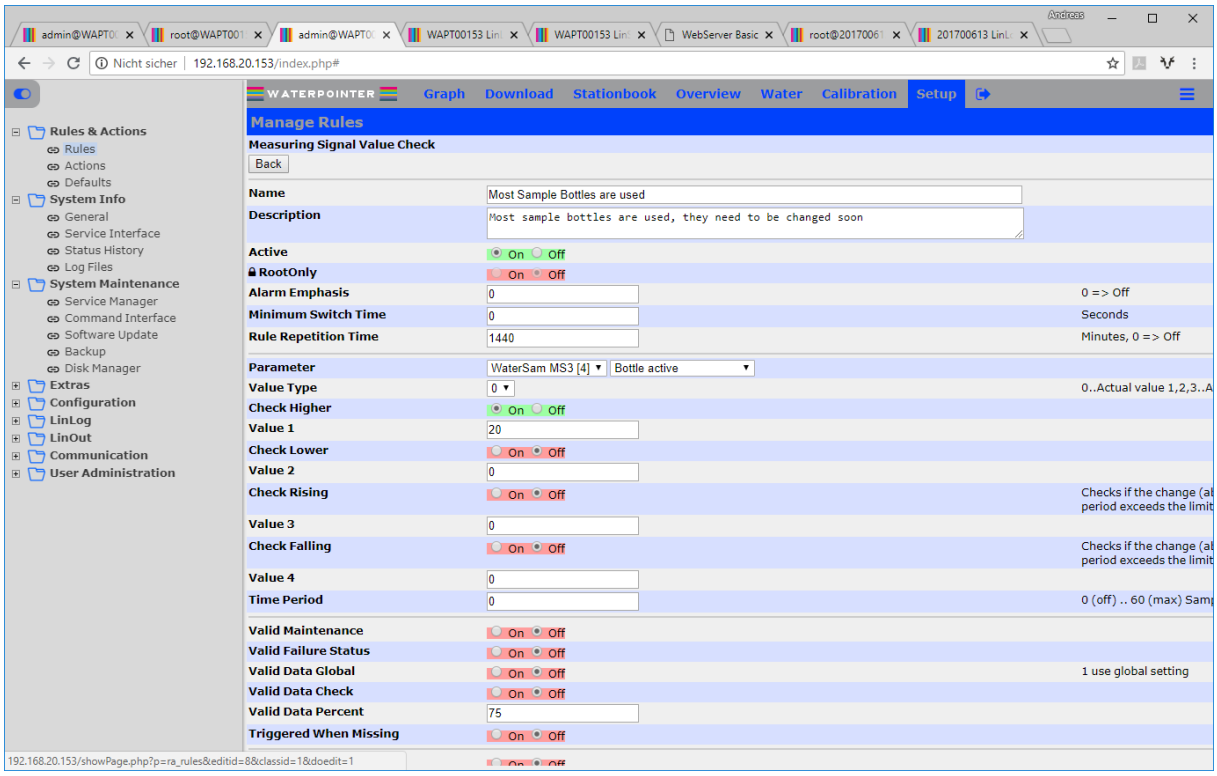
This data is stored in a file also you can copy the data easily by copy and paste.



You also can use the download function to download the file to your computer:



It is a very good idea to configure a rule checking what bottle number is in use, that triggers an Email Action when, as example, bottle 20 is in use. In that way the user has some time left to visit the WaterPointer and do the bottle exchange.



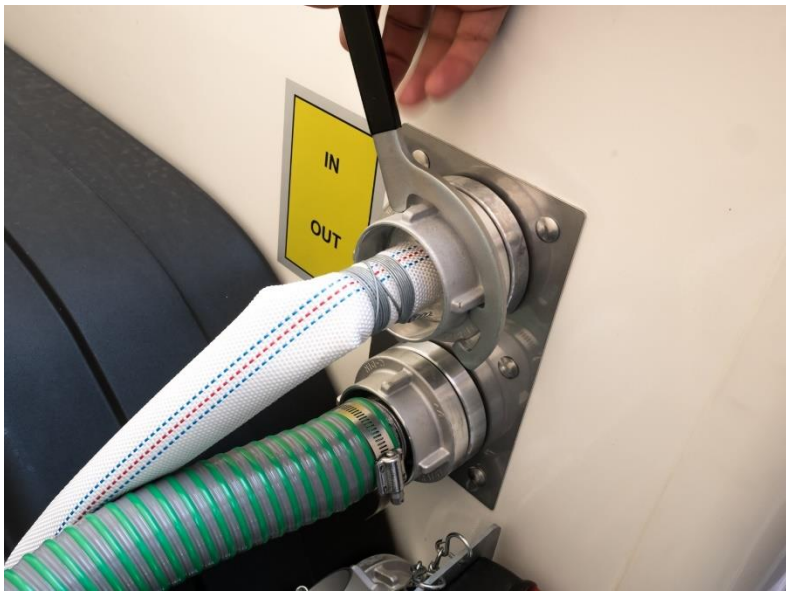
5 Setup WaterPointer on a new place:

5.1 Place and level

Place the WaterPointer on a save place next to the surface water you want to monitor. Level the trailer with the 4 lifts at the corners.

5.2 Pump and drain hose

Connect the drain hose on the OUT marked connector and roll it out to the water. Connect the pump hose to the pump and bring the pump into the water. Connect the other end of the pump hose to the IN marked connector.



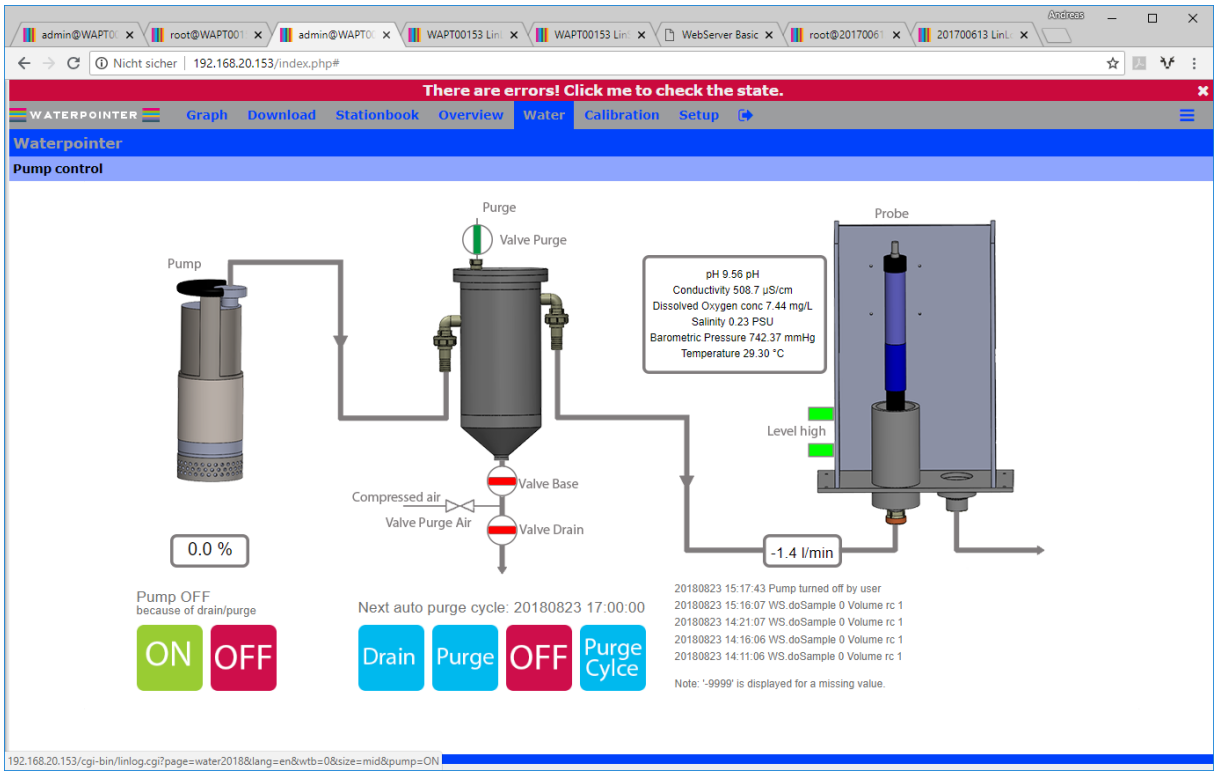
5.3 Probe

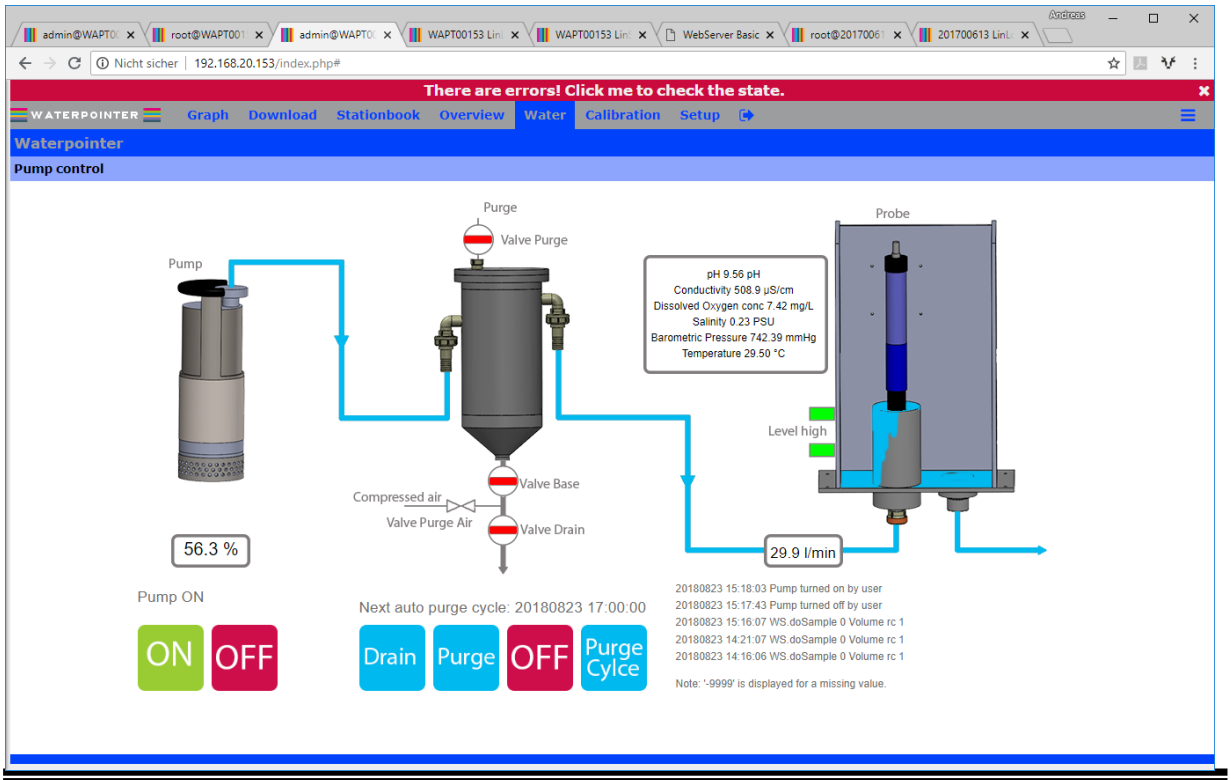
Remove the cap from the probe and install it:

5.4 Power cable

Connect to a proper installed ~230V line with a 16A fuse. Typically, the WaterPointer has an average consumption of 650W. Peak consumption is about 1.5kW.

Powerup the unit and wait at least 2 minutes before you start up your laptop computer. Login the WaterPointer page and startup the pump:





Check if the pump can handle the chosen flow without using full power.

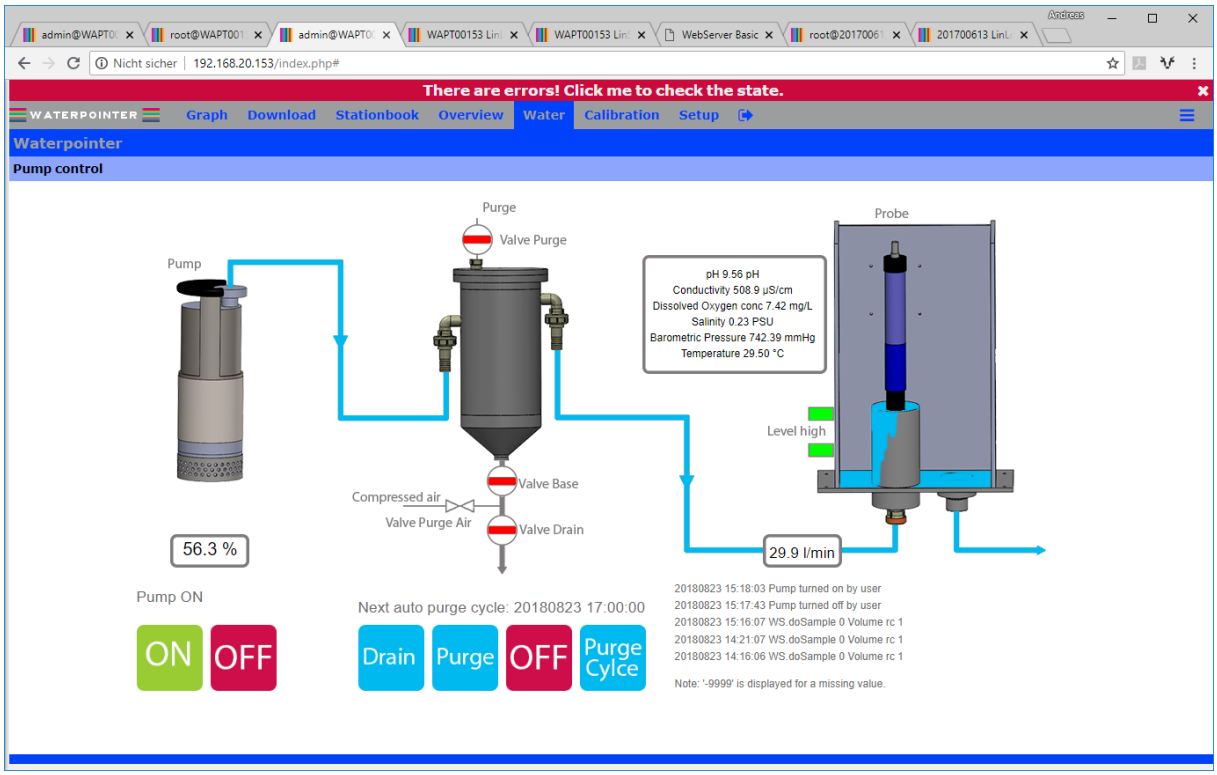
Hint: Check the modem is working on that place, before you leave. Make a note in the station book on what place the measurement is started up now.

6 Prepare the WaterPointer for transportation

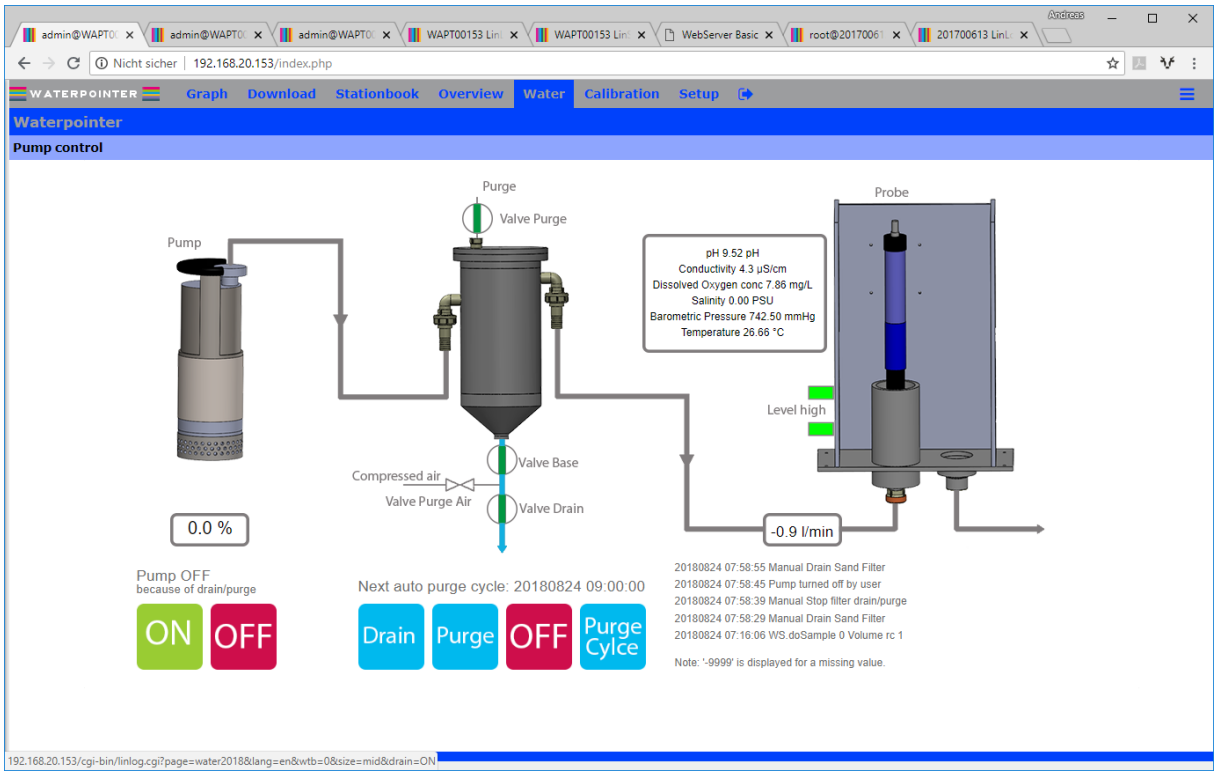
6.1 Stop the measurement and drain the water

Make a note in the station book that the measurement on that place has ended now.

Turn off the pump:



Choose Drain to allow all water to drain out:



Open the red manual valve to drain out the last rest of water: (Take care on your shoes)

6.2 Hoses and Pump

Remove the hoses from the fittings and close them

Take the pump out of the water and secure it on its place:

Remove all water from the hoses and store the hoses next to the pump

6.3 Probe:

Unplug the probe and take it out

Unscrew the protective shield and remove the cap, screw the cap to the other end, fill it with water and screw on the probe again.





6.4 Power off

Power off the unit and store the power cable.

6.5 Make ready to go

Screw the 4 level lifts in and make sure nothing can fly around inside the trailer

7 Preparation for winter time

As long the WaterPointer is powered up everything is fine also for winter time, the air conditioner has a build in heater that will keep the internal temperature on its setpoint (24°C default).

If you plan to switch off the unit it is necessary to remove all water from the unit. Turn off the pump and store it inside the trailer on its place, carefully remove all water from the pump tube. Switch the sand filter to drain and open the red ball valve below the measuring cabinet. Remove the measurement probe, fill the cap with water and store it on a warm place. Empty all bottles of the WaterSam sampler, check if there is not water in the sampling glass.

After this is done it is save to switch off the unit.

Turning on the unit in wintertime will take some time because the internal PC will start up after the temperature has reached 6°C, and the air conditioner will need some time to maintain this temperature.

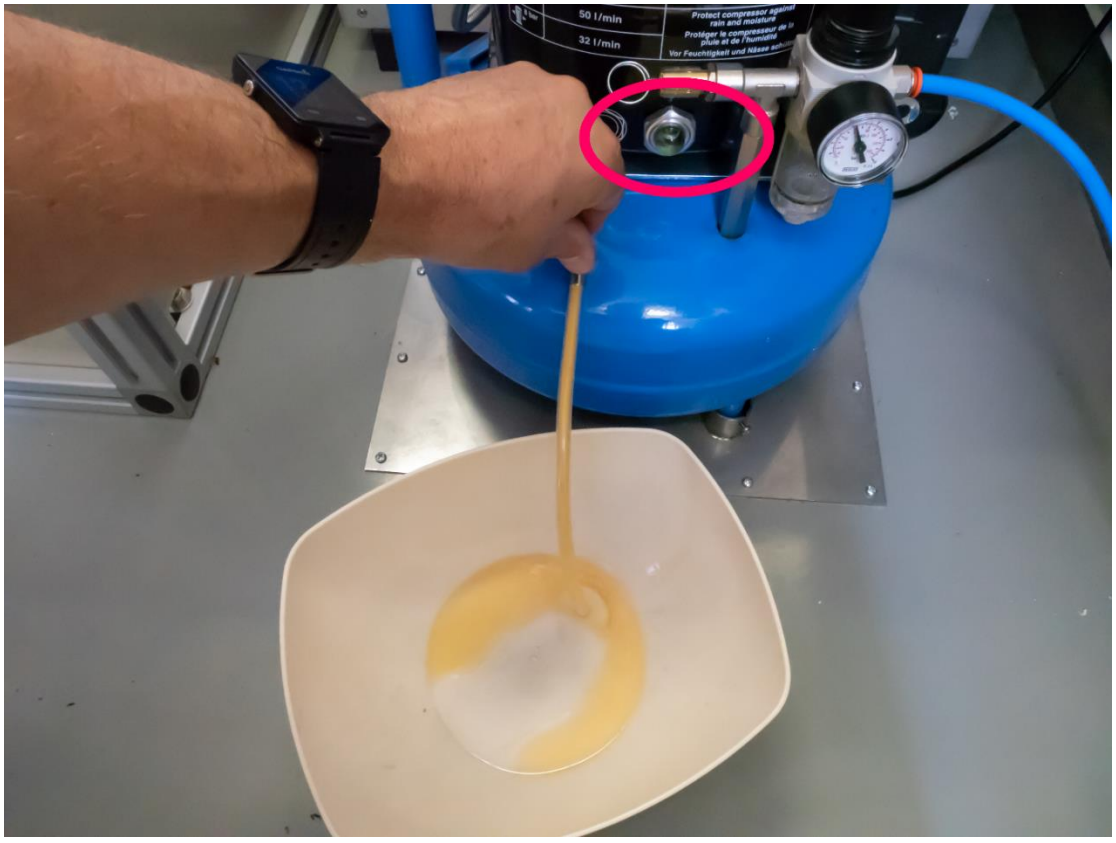
8 Maintenance on the Water Pointer

8.1 Air conditioner

Clean the outer air in- and outlet of the air conditioner at least every 3 months, depending on the surroundings it might be necessary to clean it more often.

8.2 Compressor

Remove the water from the compressor tank once a month, at that time also check the oil level of the compressor. Refill special compressor oil when needed.



8.3 Troll 600

Please refer to the Troll 600 manual

8.4 WaterSam

Please refer to the WaterSam manual

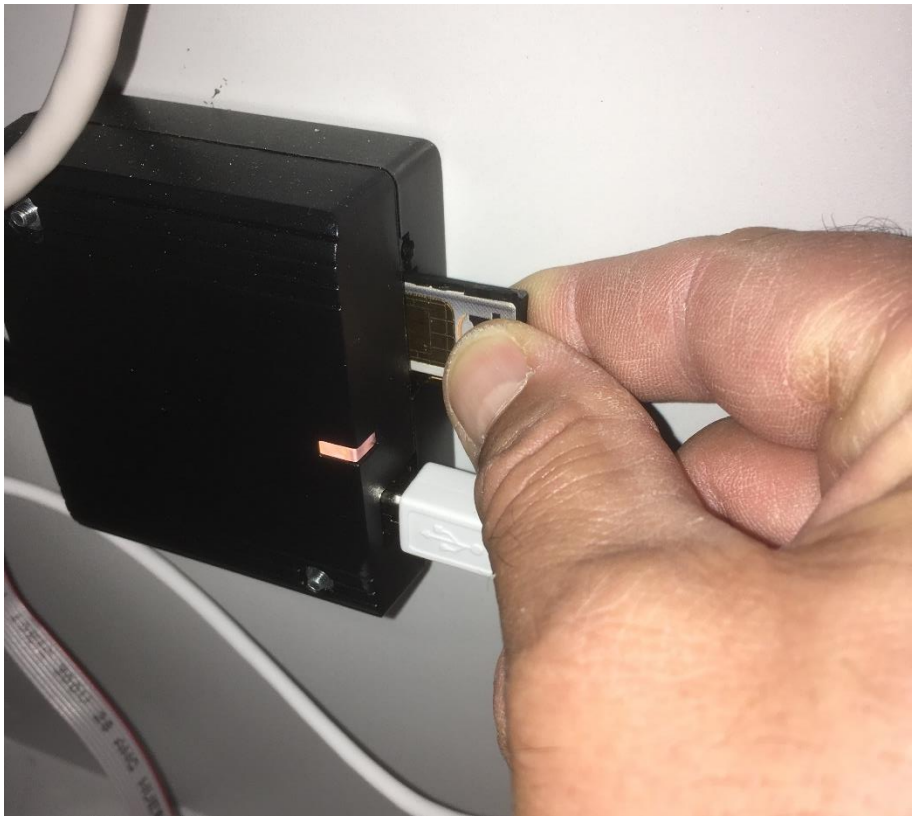
8.5 Trailer

Please follow the link below
https://www.knott.de/downloads/trailertechnik/P133-01-Knott_MANUAL_EU.pdf

9 How to setup the optional modem

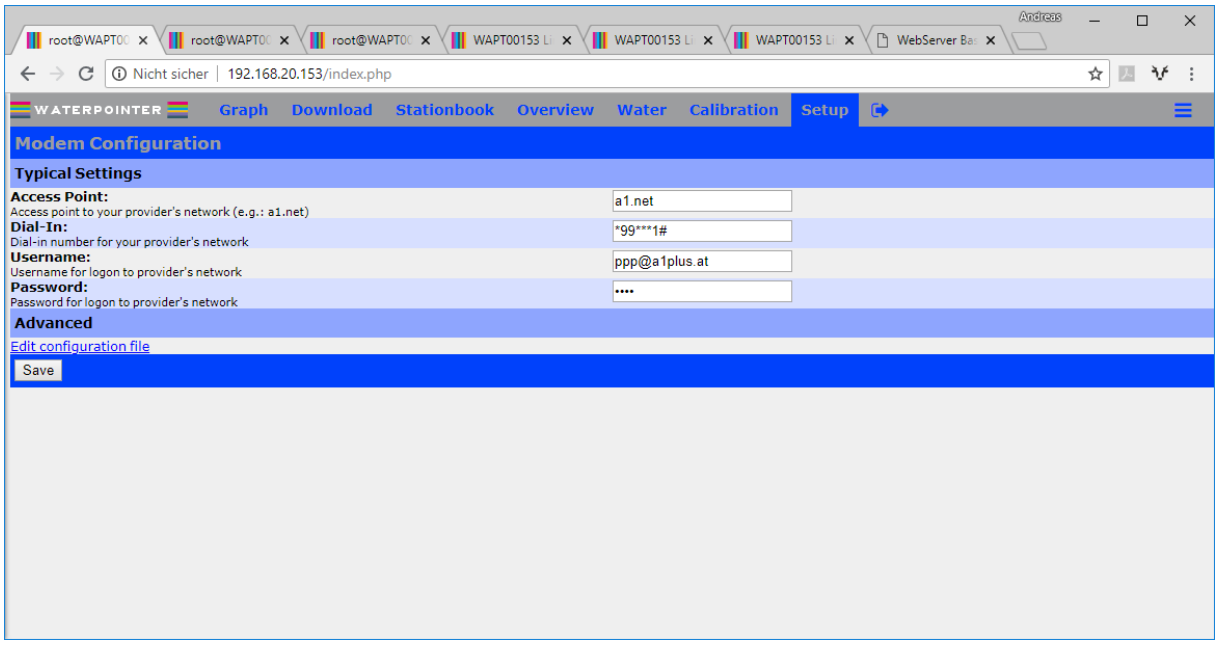
You need to purchase a SIM card from the mobile provider of your choice, the common size called Mini is the right one. First you need to put the SIM card in a mobile phone and turn off the need of a PIN. Try out and turn off and on the mobile, if it is not asking for a PIN the first step is finished.

Now the SIM card needs to be installed into the modem:

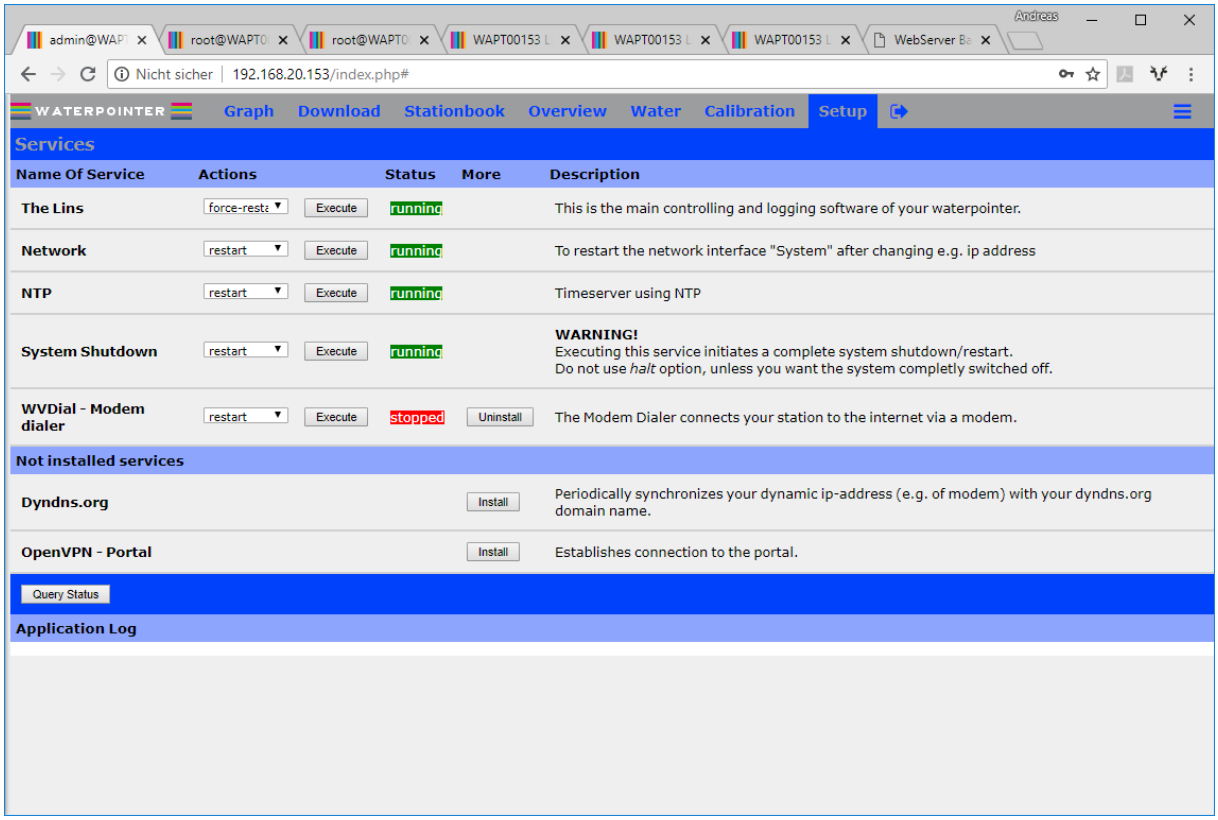


Cycle power after you installed the SIM card.

Make a local login and configure the access parameter according to the needs of your provider, in Setup->Communication->Modem:

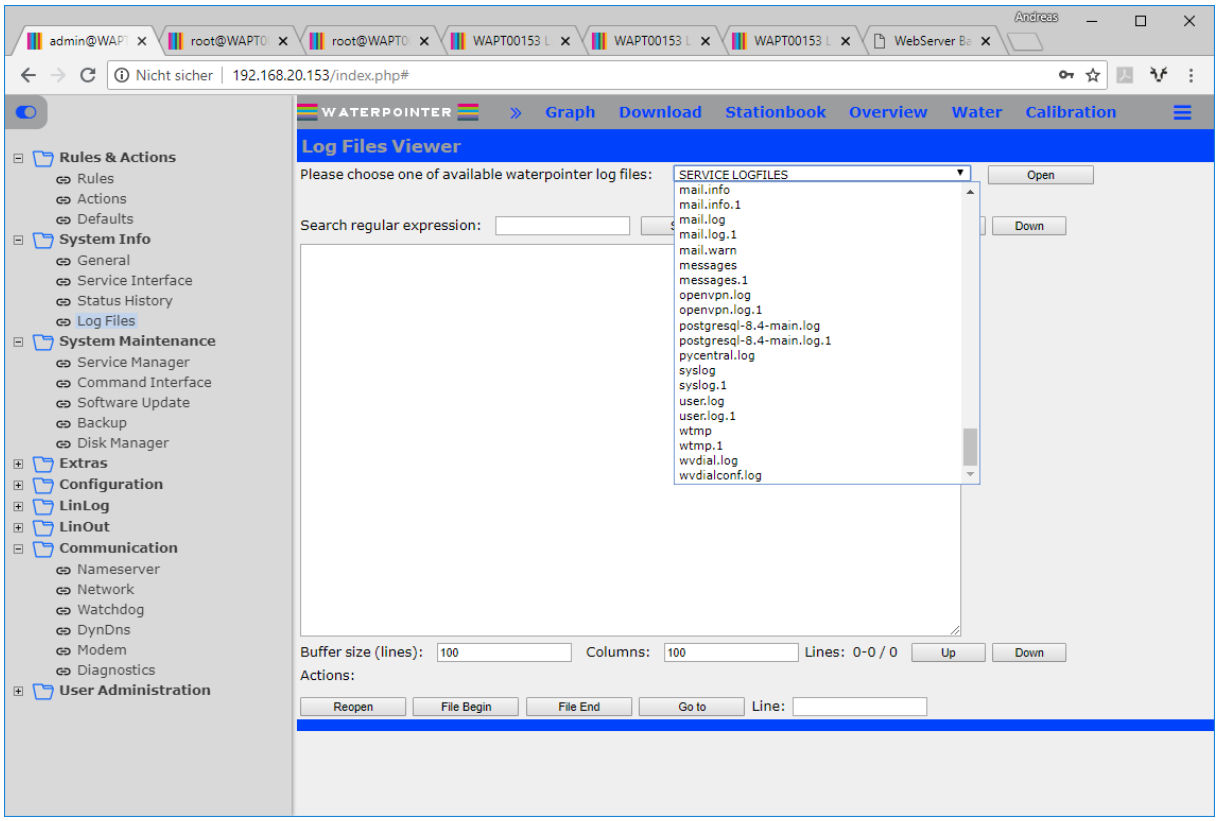


In case the provider tells you “No user and Password needed” type in just a few letters because the software controlling the modem cannot work with this parameter empty. After pressing <Save> a link to the Service Manager is displayed, follow this link and restart the WVDial – Modem dialer.

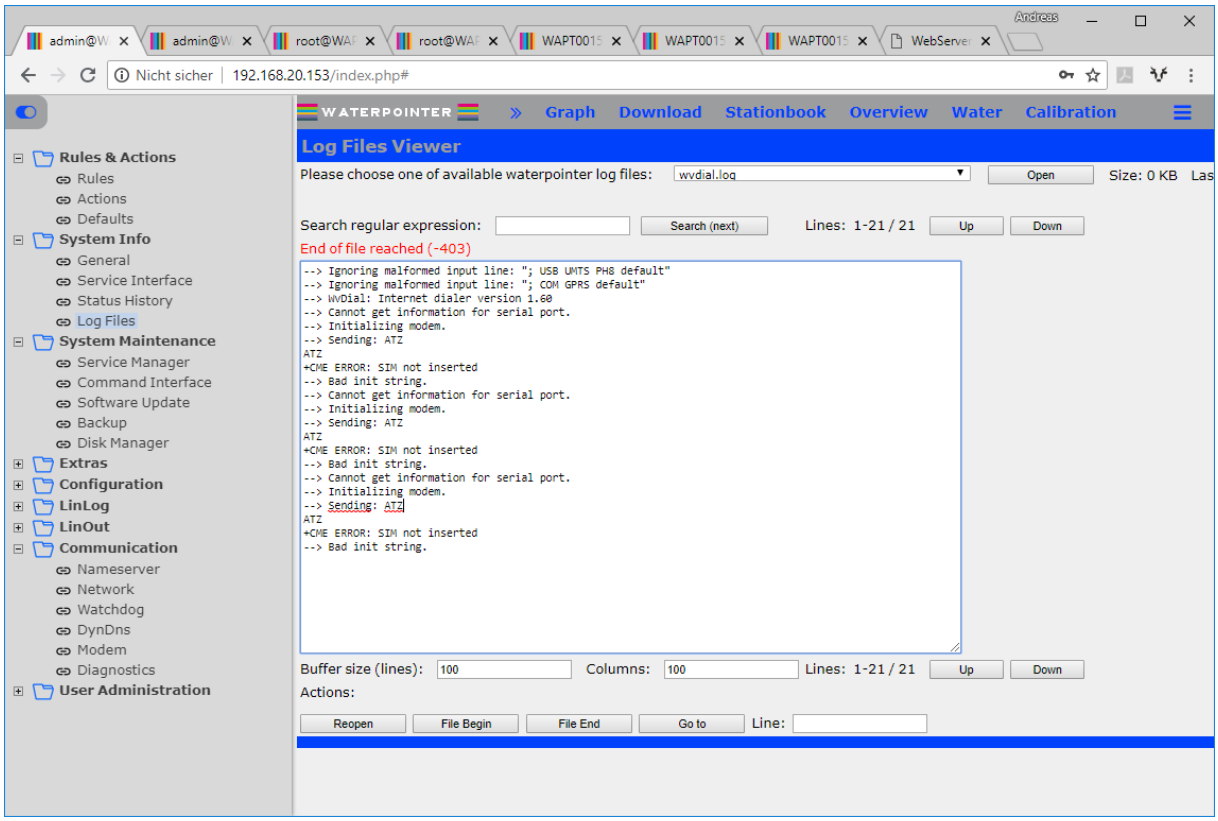


Now it is time to check if the dialer could establish a communication:

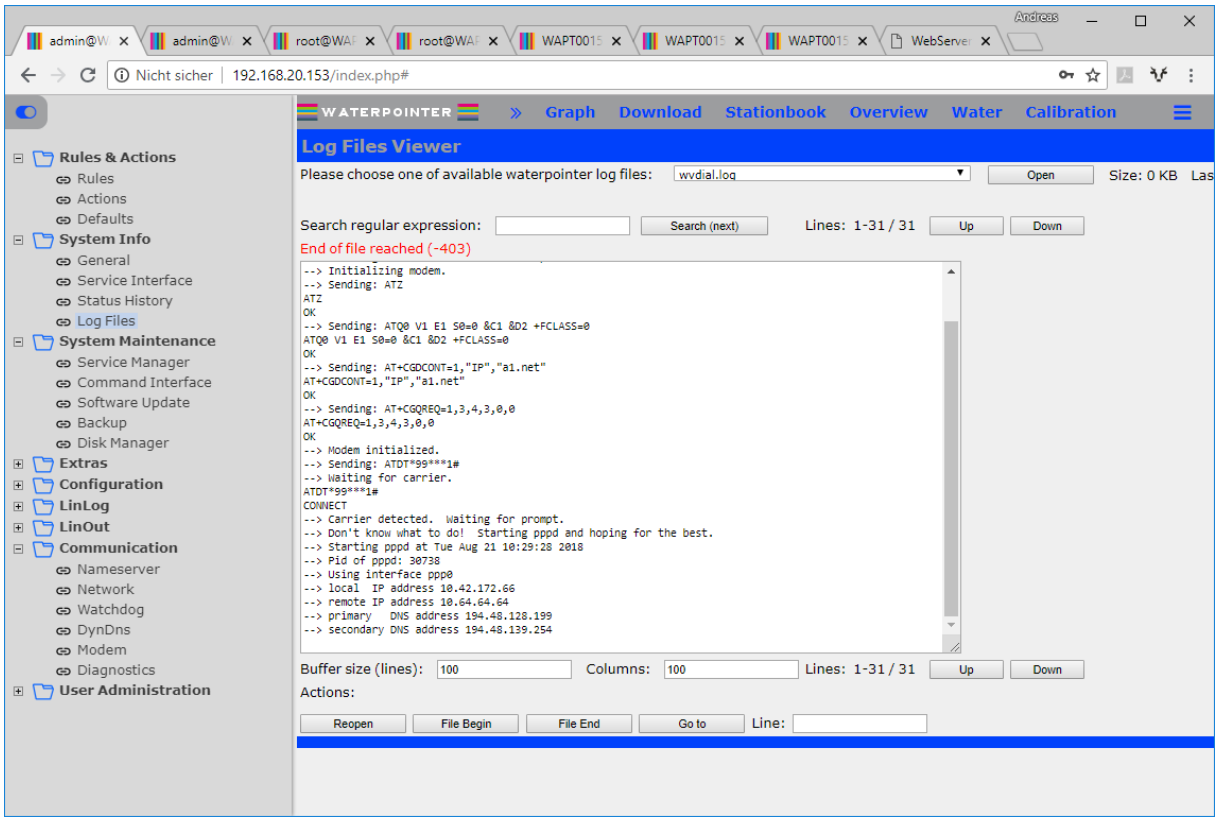
Setup->System Info->Log Files



Scroll down to wvdail.log and open the file:

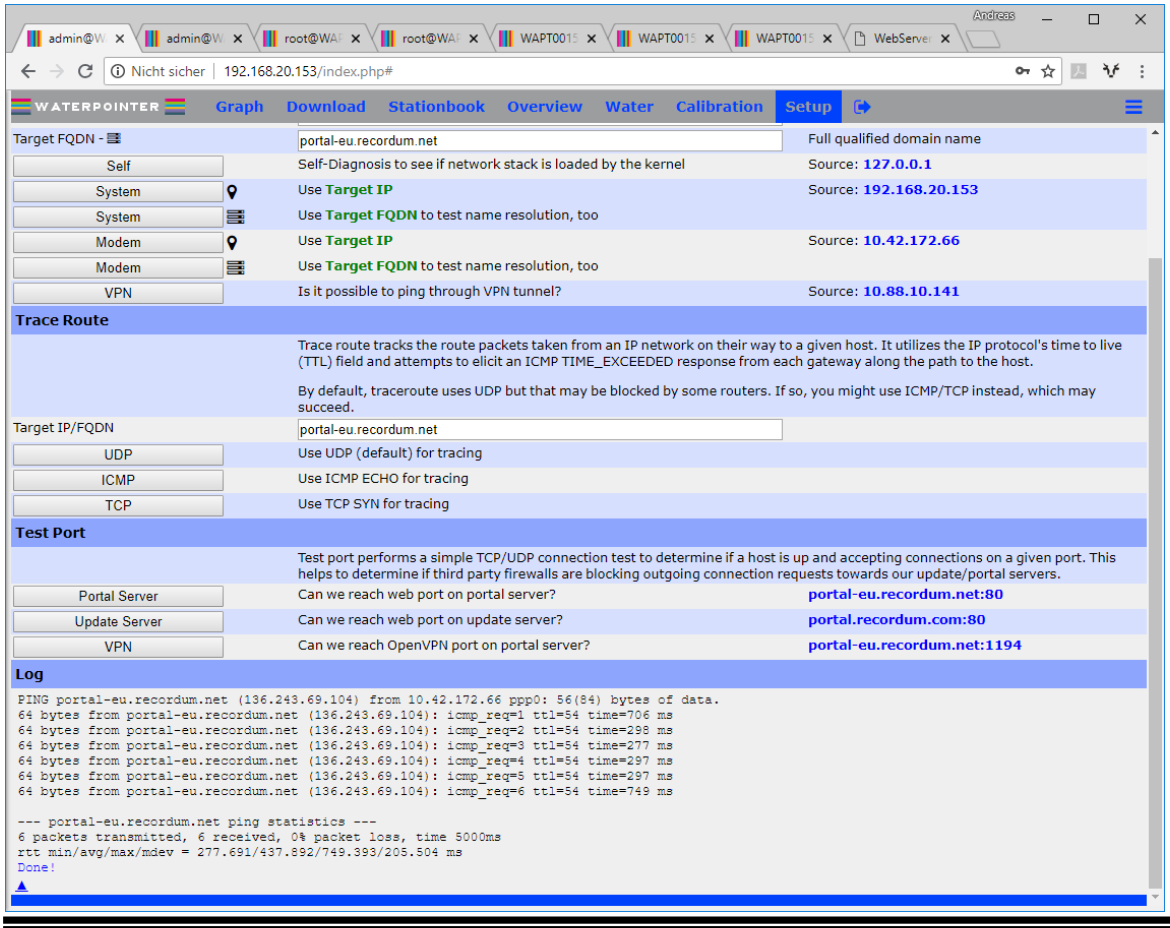


In this example the SIM is not inserted properly, this is now corrected, another restart of Wvdail was performed and WVdail.log is reopened:



Now we have CONNECT in the line and the unit got some IP Addresses, that looking good.

Last point is to check connectivity Setup->Communication->Diagnostics:



After clicking on Modem (Use Target FQDN) I received answers from the server, now I am finished here.

Hint: Often the call centers of your provider cannot help as they are trained for mobile phones only. Google is a good help, searching for your providers Name and 'Access Point Name' or APN.

10 Machine to machine communication:

If you need to integrate the WaterPointer data into your database automatically use the recordum HTTP download interface described here:

http://portal.recordum.com/shared/recordum_HTTP_Download_Interface_V2.03.pdf