# Summa canisters – air canister on airpointer

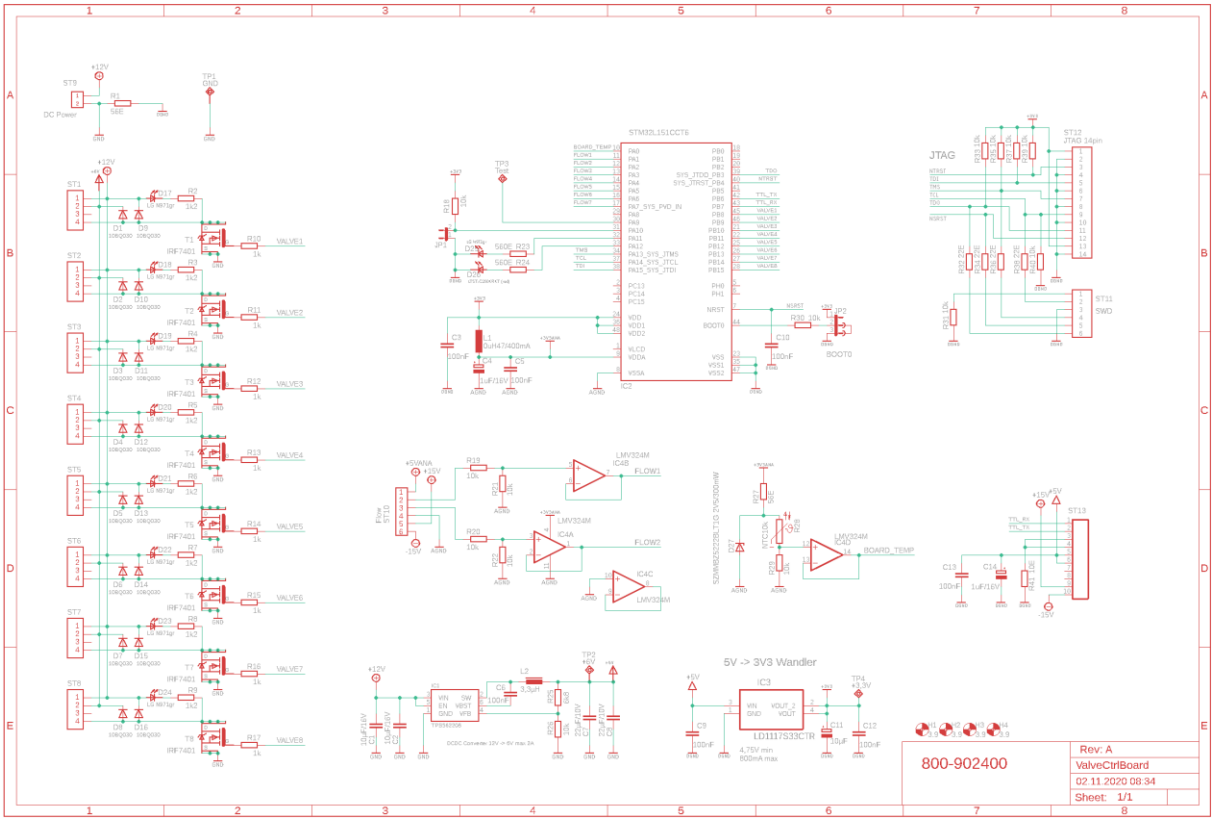
## Goal

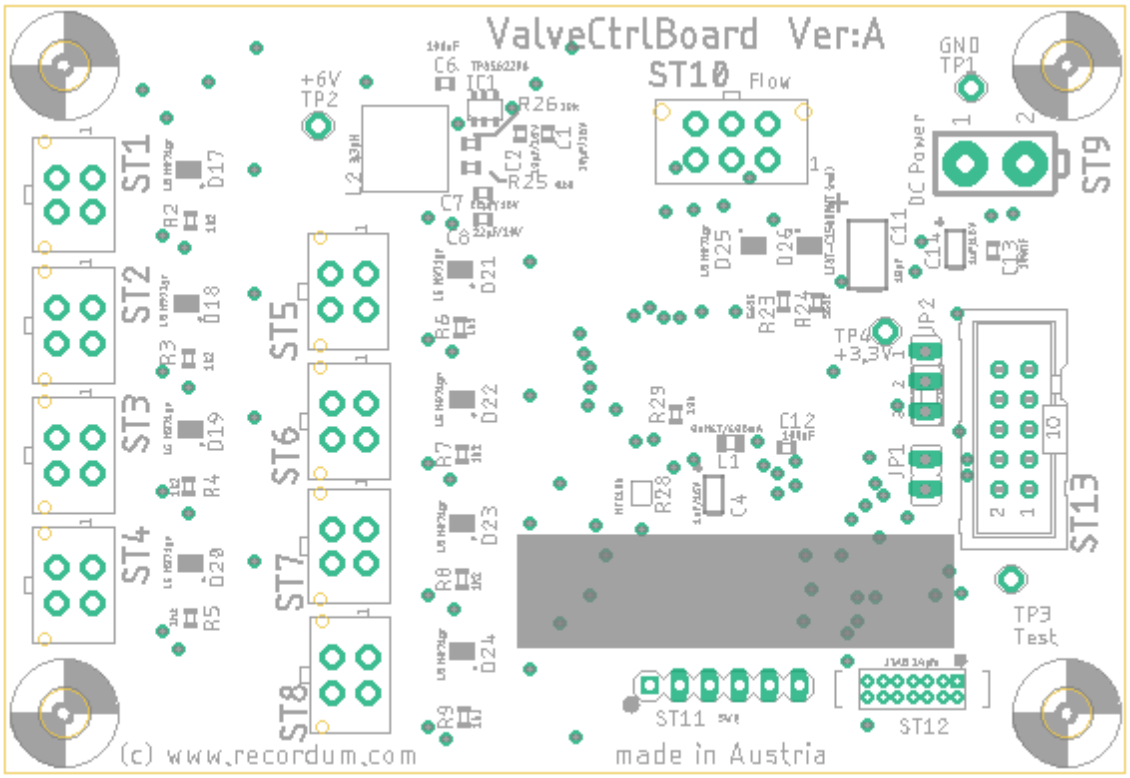
The airpointer is an excellent tool to measure the ambient air quality on the standard pollution gases. Let the airpointer control the sampling of the ambient air into summa canisters enables a lot of new possibilities in the field on air quality measurement. Using the airpointer's "rules & action" system the sampling of the air can be controlled simple by time intervals but much nicer also by certain limits of air concentrations. Each canister change is labeled by the user in the software, when the user takes away the canister after a while, he can have a file with all sampling data, including the total amount of sampled gas and sample duration.

## Hardware

A board called ValveCtrl is situated in the lower, left corner of the airpointer close to the cable entry. This board is able to control up to 8 valves. The values should be 12V standard on/off types, but also 6V valves can be used (The maximum total current of the 6V valves need to be below 2A.) The valves are connected with 4 pin Molex Microfit connectors (a set of connectors is delivered with the unit).

Pin layout: pin_1..+12V, pin_2..+6V, pin_3..nc, pin_4..switched to ground

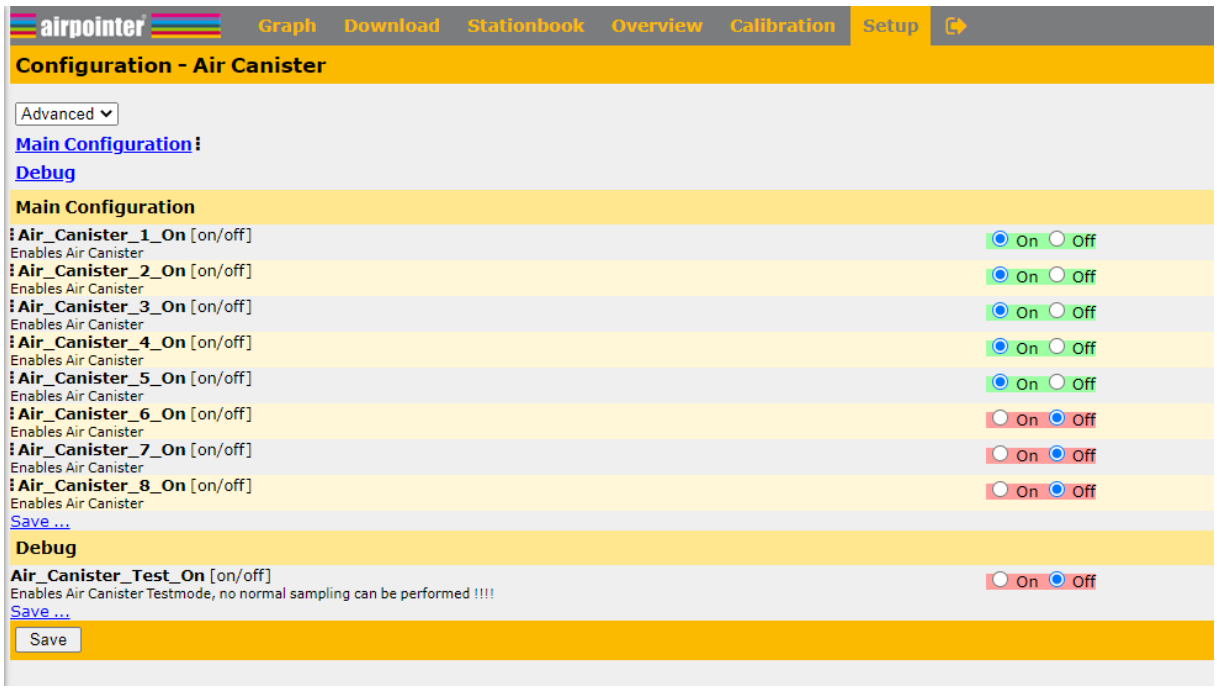





# Configuration

## Enable Air Canister sampling

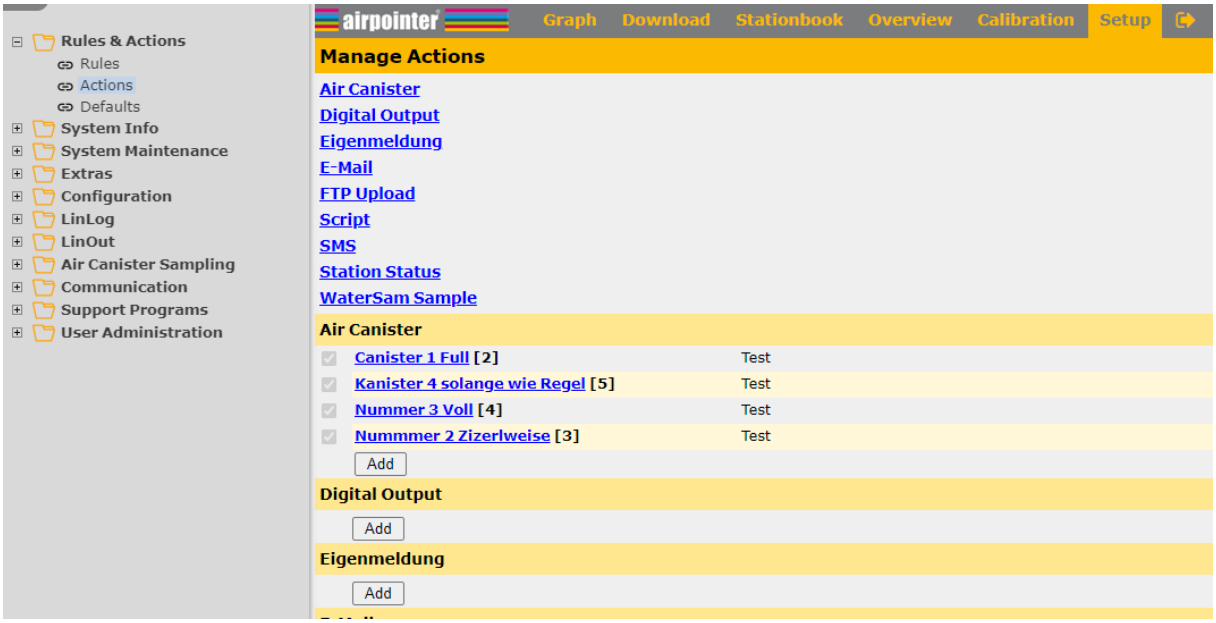
The air canister sampling is enabled in software with the parameter **Air_Canister_SamplingOn**
In Setup -> Configuration -> Options -> Main Configuration with “Advanced” on. By enabling the air canister handling a new configuration point “ Air Canister” appear.



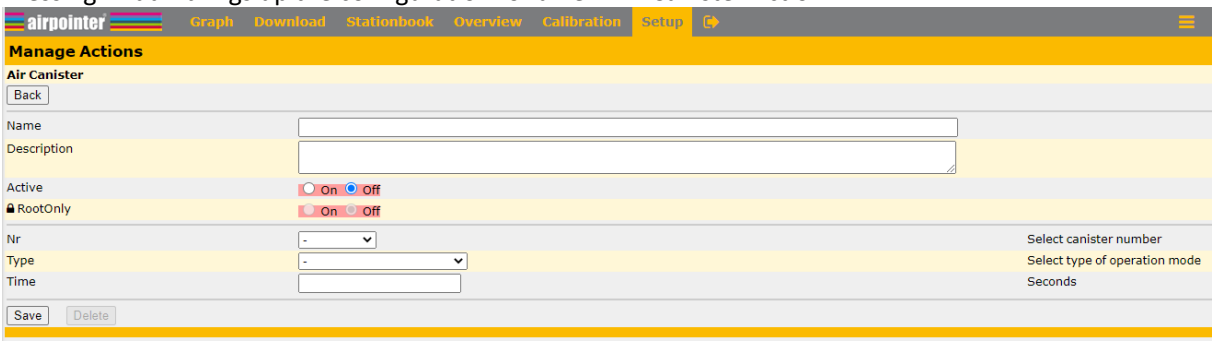
Here you can enable the valves you want to use. For testing purposes only you can enable a test mode here, we will explain a little later.

# Configuring the rules & actions

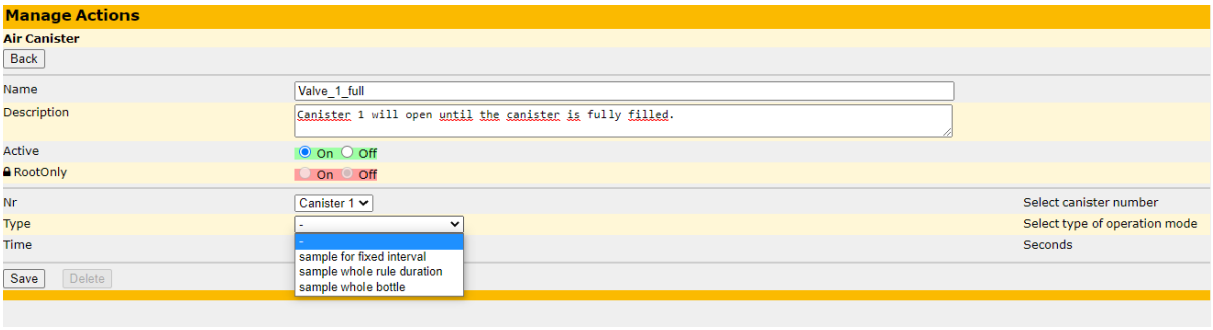
Opening Setup -> Rules & Actions -> Actions brings up a now new type of action called “Air Canister”:




Pressing <Add> brings up the configuration for a new Air Canister Action:



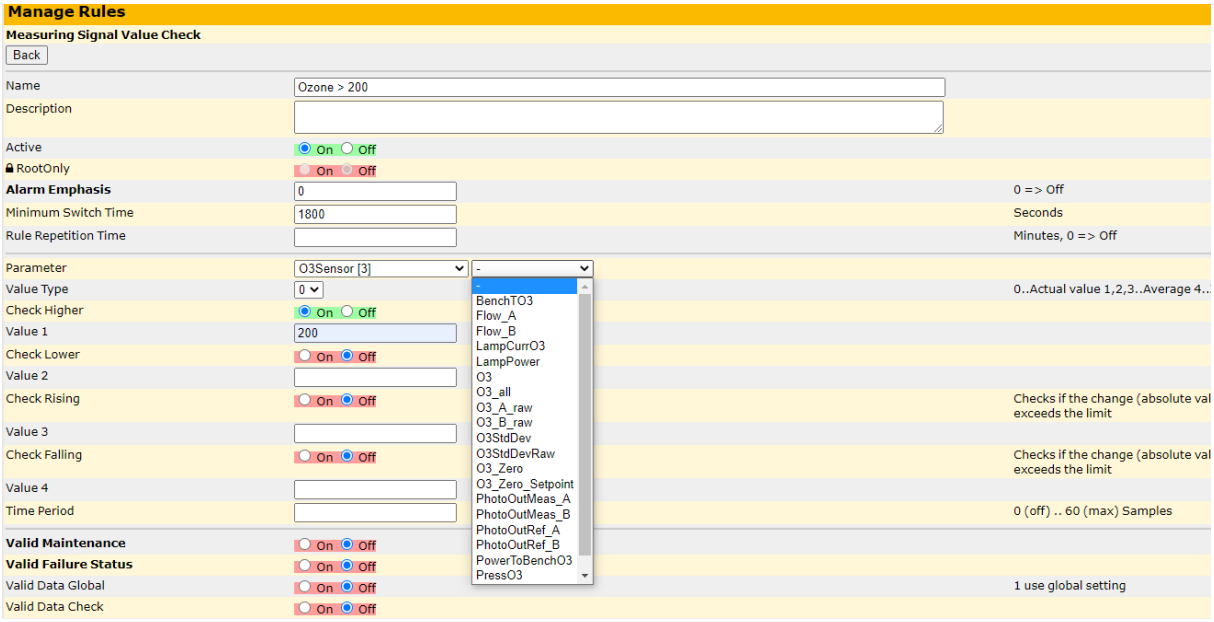

Give the rule a name like Valve_1_full, add a description if you want to help other users and set it Active. Now choose the number of valve from the pull down menu.



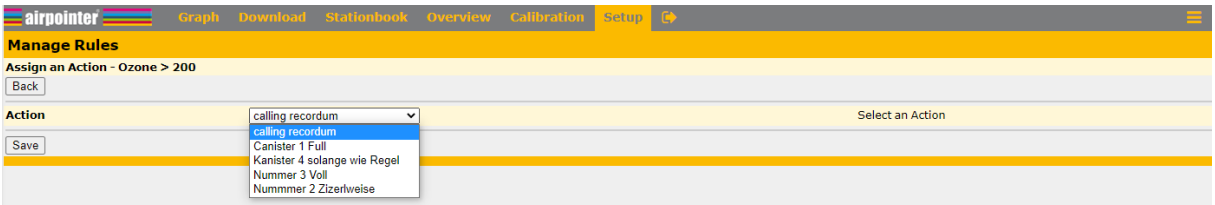

Now you can define how long the valve should be open.
**Sample for a fixed interval:** Choose this if you want that the valve is open for example 10min = 600seconds, each time the action is triggered. Type in the interval you need in “Time”.

**Sample whole rule duration:** With this setting the valve is open as long the rule triggering the action is active.
**Sample whole bottle:** When triggered the whole canister is filled up.

Valid for all settings is that as soon the software has calculated that the canister is full it will not open the valve again.
With the action defined you define the rule you want to use.
As example we want to sample when ozone is above 200ppb. You choose Setup -> Rules & Actions -> Rules -> Measuring Signal Value Check, and press <add>.
In the new Rule fill out name, description, set it active, set the limit and choose the right parameter from the list:



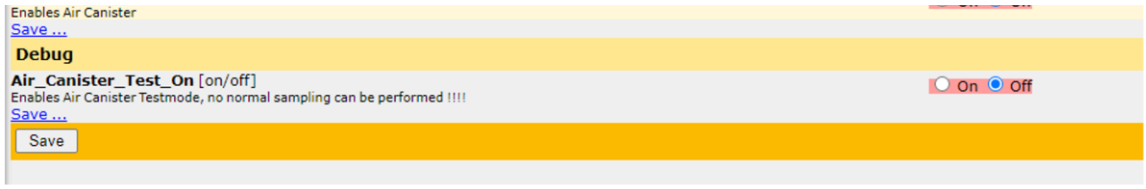

When you are fine with your setup press <save> now edit your new rule again, on Assigned Actions press <add> And assign the action you have defined before:



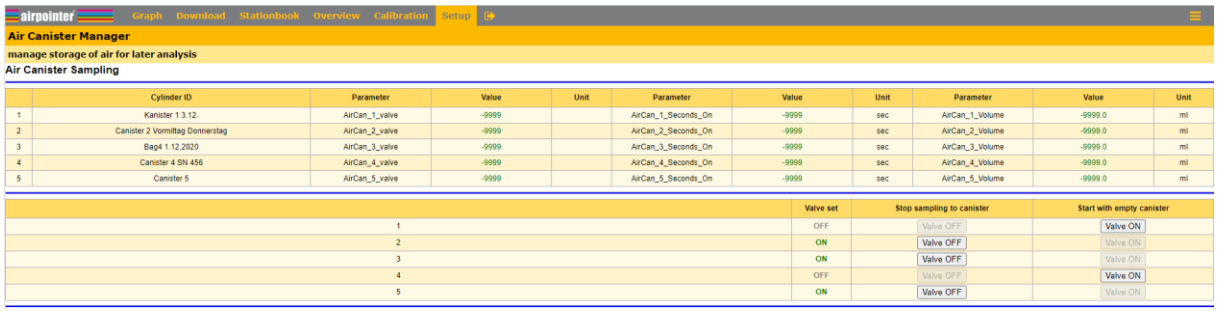

It is a good idea to have a look at all possibilities of rules & actions, there is a very good chance you find exactly what you need.

# Test possibility

If you want to test your cabling before you startup your very first sampling you can activate Air_Canister_Test_on in Setup -> Configuration -> Air Canister




Choose Setup -> Air Canister Sampling -> Air Canister Manager for this page:
(You find same page in LinSens Service Interface also)

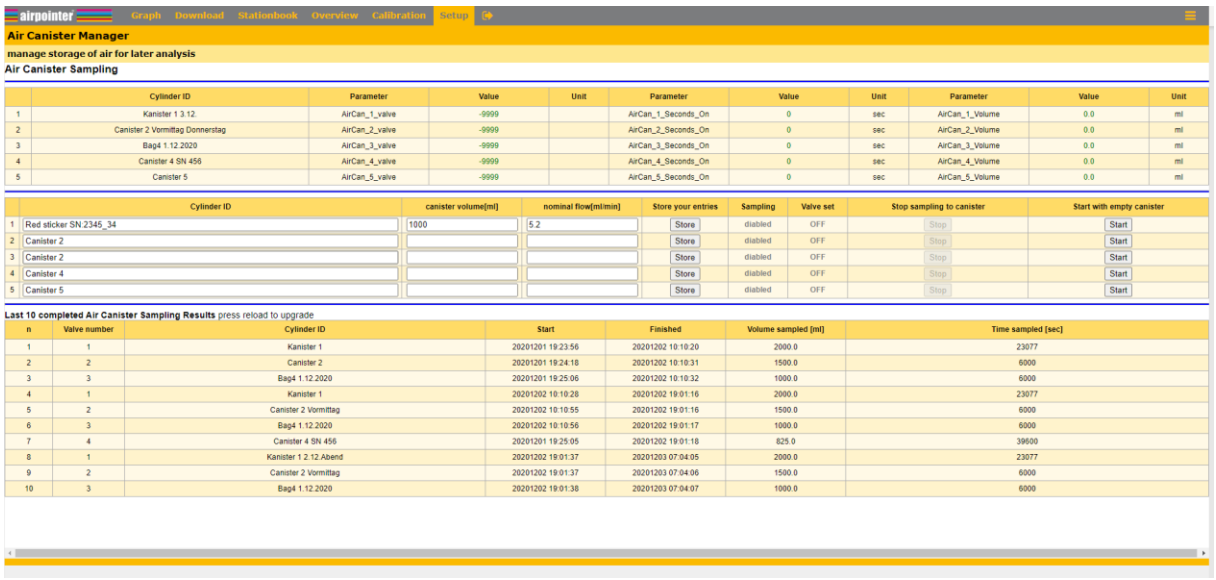



(the -9999 is shown because I had no hardware connected, I need to change this pic later on)

With the <Valve ON> <Valve OFF> buttons you can turn on and off the valve manually.
When you have finished your test turn off test mode.

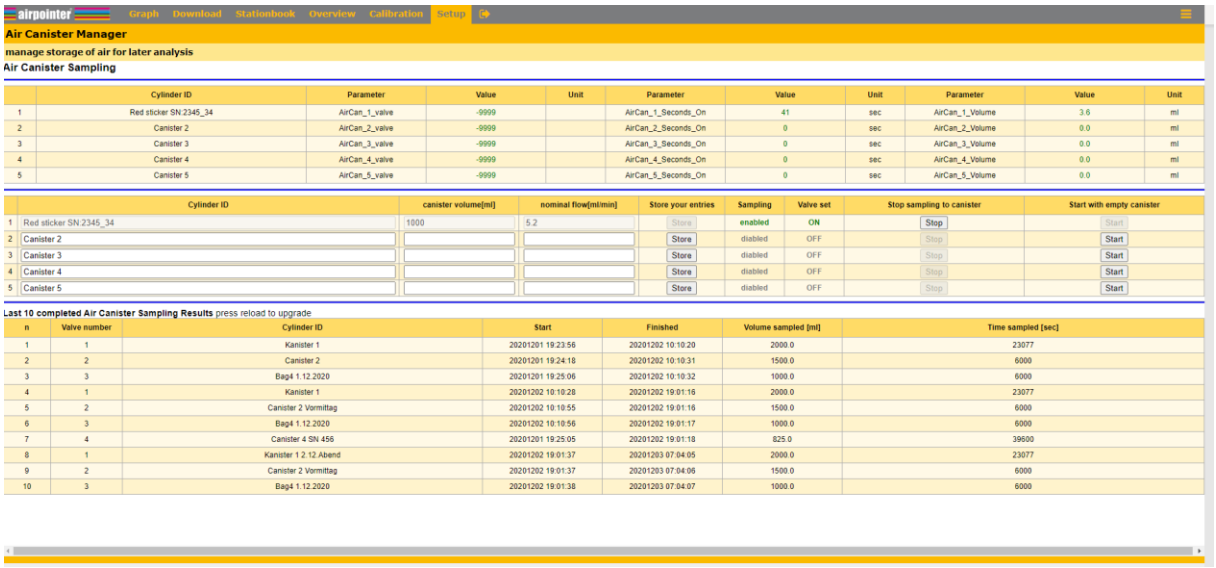
# Operation

After all the preparation the canister can be connected. You choose Setup -> Air Canister Sampling -> Air Canister Manager to get this page again.



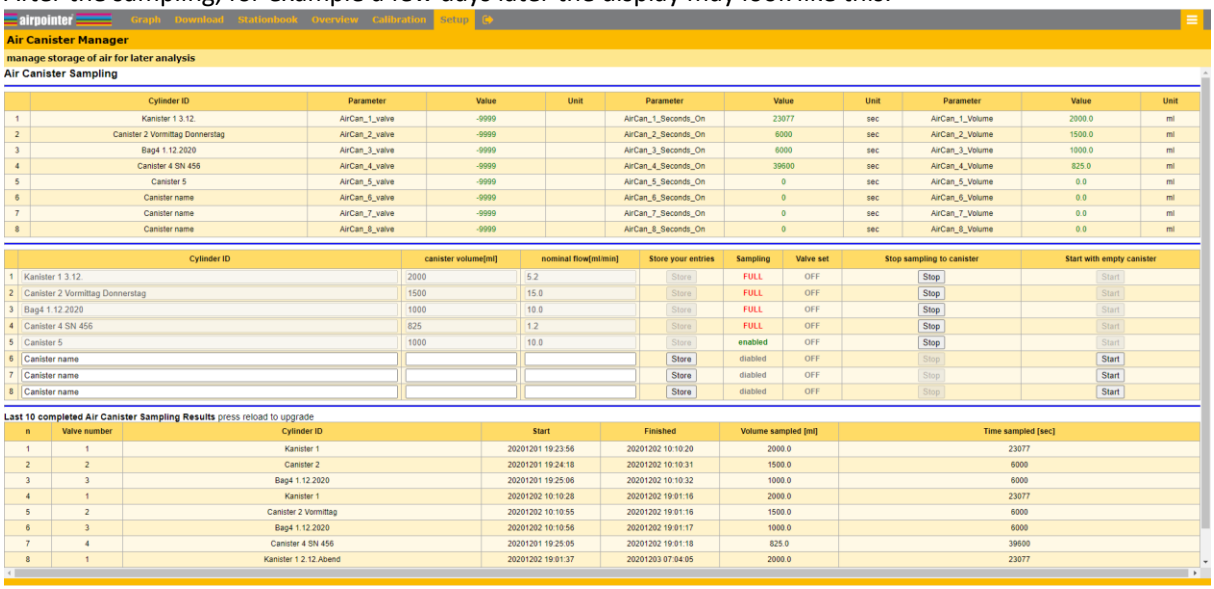

(the -9999 is shown because I had no hardware connected, I need to change this pic later on)

In the upper part you find the actual data, the part in the middle is your part to operate, the lower part is displaying the last 10 results.
What you have to do now is to fill out the cylinder ID with the serial of the canister or something else that makes sure you know what canister is in. Fill in the volume of the canister and the nominal flow and press <store> please fill out line by line and press store for each. After pressing <start> the canister is enabled for sampling. As soon the action you have defined is triggered the valve will be opened and the sample is taken.




(the -9999 is shown because I had no hardware connected, I need to change this pic later on)

After the sampling, for example a few days later the display may look like this:



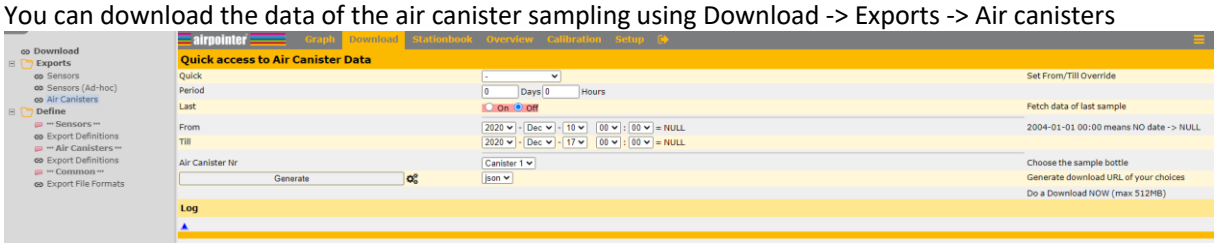

(the -9999 is shown because I had no hardware connected, I need to change this pic later on)

We have 4 full canisters in that example. You press <stop> to finish the data set, take the canister(s) with you and connect fresh ones.

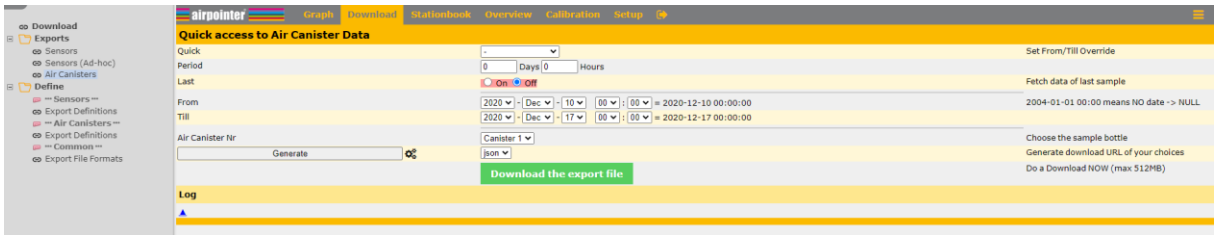
# Getting data

## Download

You can download the data of the air canister sampling using Download -> Exports -> Air canisters

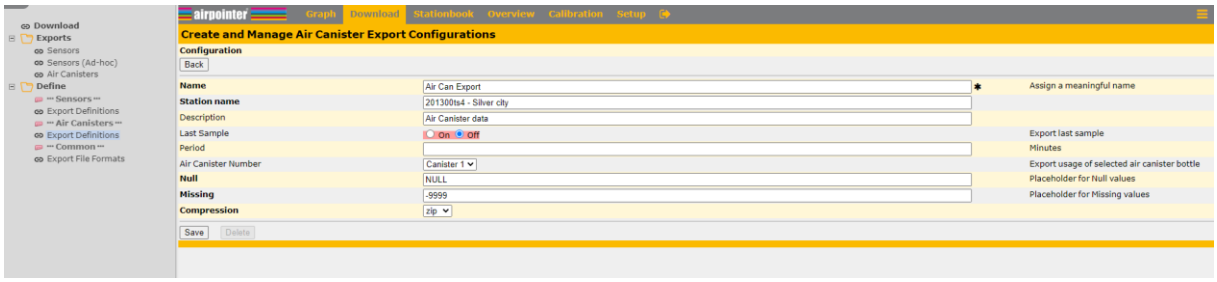



Choose “Last” or define a time period, select the canister nr and the file format and press <Generate>
After some seconds the file is prepared and ready for download.




# Prepare Export for rules & action

You can define an Export to be used in rules & actions by choosing Download -> Define -> Air Canister Export Definitions. Choose the data format you need:




Fill out the form, most important is to choose the Air Canister Number. If you set Last Sample to on you get just the data of the last sample, otherwise you can define a start and stop time later on. Save this setup.

You can use this setup now in the rule and action system.