MSDA_XE

QUICK START

release date: 2010-12-06

TriOS Mess- und Datentechnik GmbH
Werftweg 15
D- 26135 Oldenburg
Germany
Fon: +49 (0) 441 48598-0
Fax: +49 (0) 441 48598-20
support@trios.de
http://www.trios.de/

Content

1. Information about the software and this manual

The software MSDA_XE is a graphical software to control all types of TriOS sensors. Functions for graphical visualization and storing are integrated as well as tools for sensor settings, calibration and calculation of concentration values from UV spectra (LSA) or calculation of PAR / UV light. Sensors are identified by the software with device files and calibration settings and coefficients will be imported into the software automatically.

Spectral analysis and concentrations can be calculated during the measurement. Concentration values, spectra and timeseries can be exported in different formats.

All data will be stored in the currently used database or in separate external files. Different databases can be used with the software, which helps to organize huge data amounts of different sensors or different applications / missions.

The wizard of the software will help to install sensors and do some settings. If you use the software for the first time use this wizard.

This is not the software manual. This is a short manual to get a quick and easy start, if you don't want to use the wizard. For a better understanding this short manual contains many pictures and each sensor type (Radiometer, Fluorometer, Photometer) has a single chapter.

Beside the pictures, mouse entries or series of entries are marked in brackets. E.g.: [Desktop / Save as...] for saving the current desktop.

This quick start manual is based on the software version 8.7.000 or higher. If you use an older version it is possible, that some features are not included or are different. The newest software version is available from our website www.trios.de.

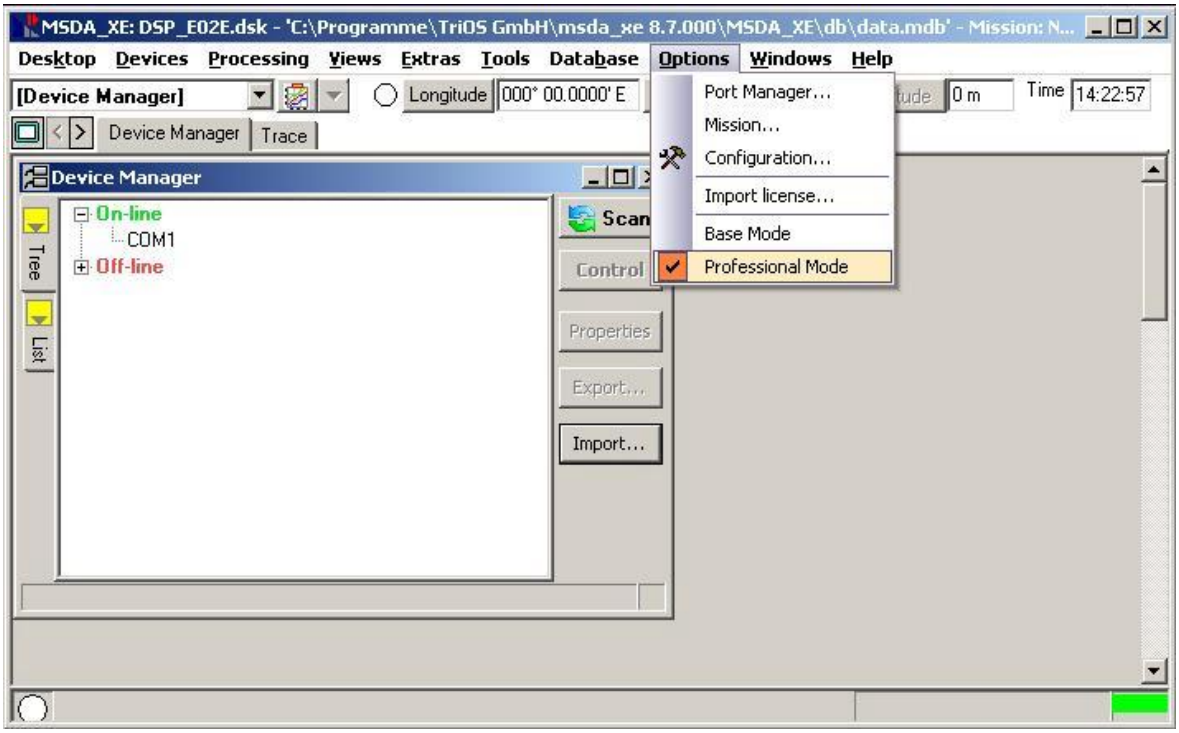
1.2 Administrator rights

For the installation of MSDA_XE, administrator rights are necessarily needed. In Windows Vista and Windows 7 you need write permission for the installation folder.

2. License strategy

MSDA_XE is freeware. As more and more functions were integrated in the software, a license strategy was build up. Licenses activate only the functions, which are needed by a certain sensor. When the software is started for the first time, no license is imported and only basic and general functions are available. After the import of device files the sensor specific functions will be activated. For example the import of a RAMSES device file will activate only the RAMSES specific functions and menus. By pressing [Options /

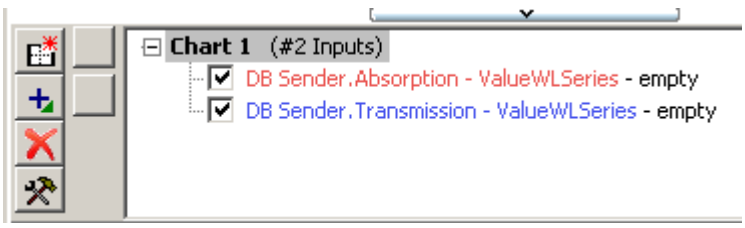
Professional mode] more functions for professionals will be activated. Some very special functions can only be activated by additional licenses, which can be requested by the TriOS support team (support@trios.de).



The frontend of the software can also be customized. Individual desktops can be saved. This helps to configure the software for each sensor type or application. Build up a desktop according to your wishes and save it by pressing [Desktop / Save as...]. The saved file has the ending *.dsk. For an easy start, desktops for each device type are preconfigured and included in the software package. They can be opened by pressing [Desktop / Open Example].

The desktop consists of different windows. Most windows like chart, LSA or data table have an input selection. The principle behind this is the sender and receiver principle – like a radiostation and a radio.

or in a chart:



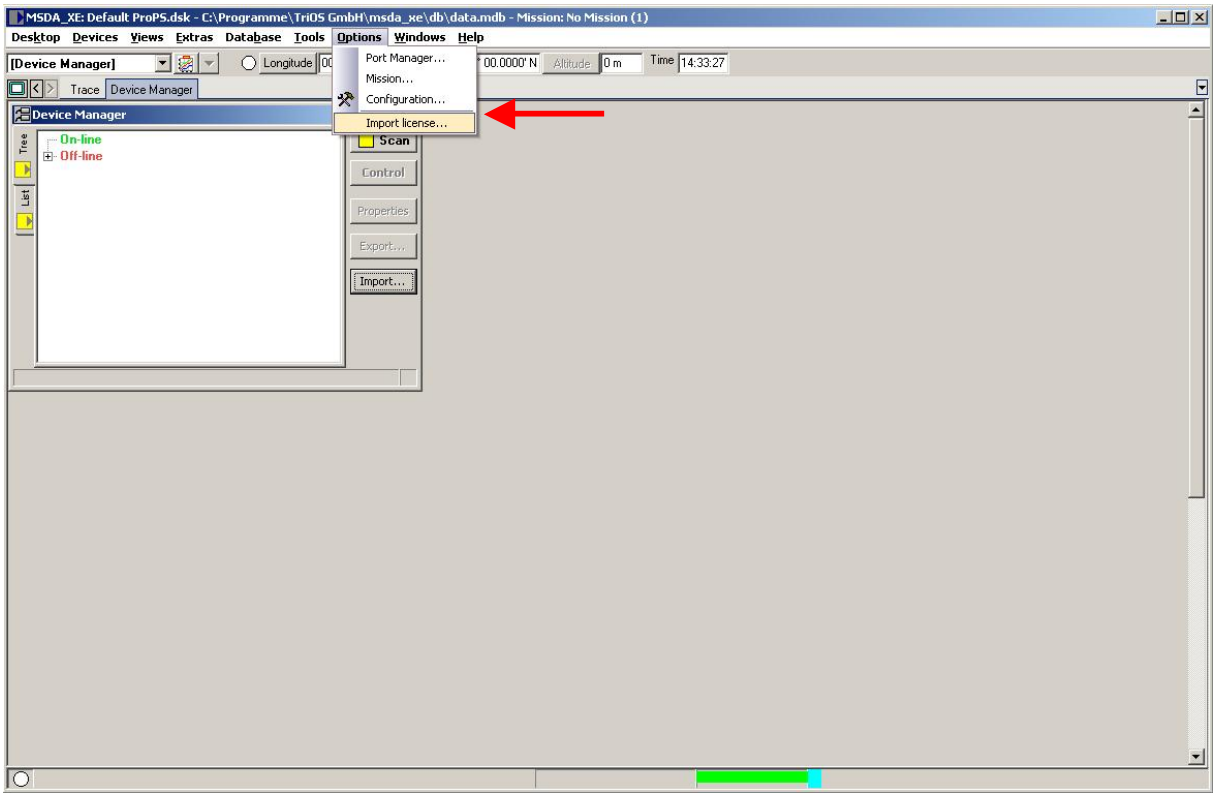
The user is able to customize the inputs. For example it is possible to run a LSA (Substance analysis) directly from a measuring ProPS as input, or with data from the DB Sender. Or the chart can show one graph from the DB Sender as input and one graph from the LSA as second input. If a process don't work correctly, please check the window inputs and links carefully as well as the activation status of the window.

Each sensor needs at least one file – the device file. Device files are the 'drivers' for the sensors. At the beginning of each sensor specific chapter the files and licenses, which have to be imported are listed.

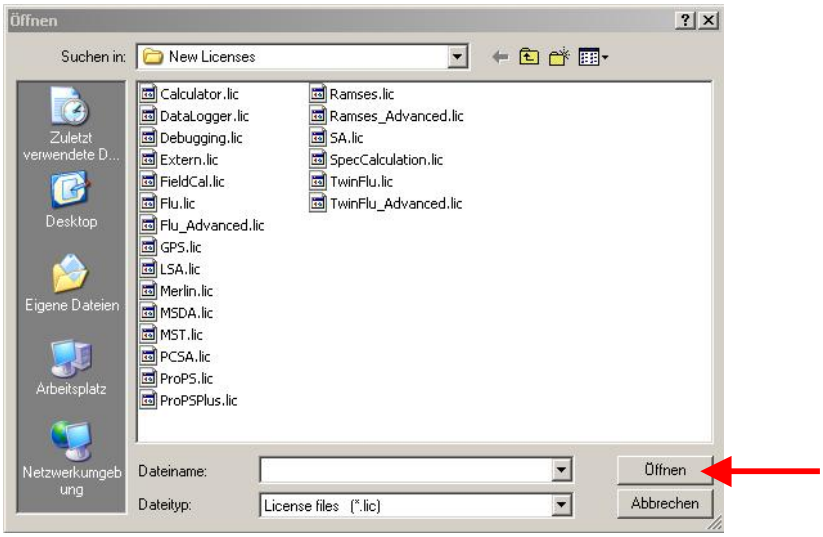
2.1 How to import license keys

The control of the licenses is now done by the software and dependent on the imported device files. Nevertheless some special functions are blocked and can only be activated with additional licenses. Additional licenses can be requested by the support team of TriOS (support@trios.de). Blocked functions are marked in grey.

To import one of the license keys press [Options / Import license...]

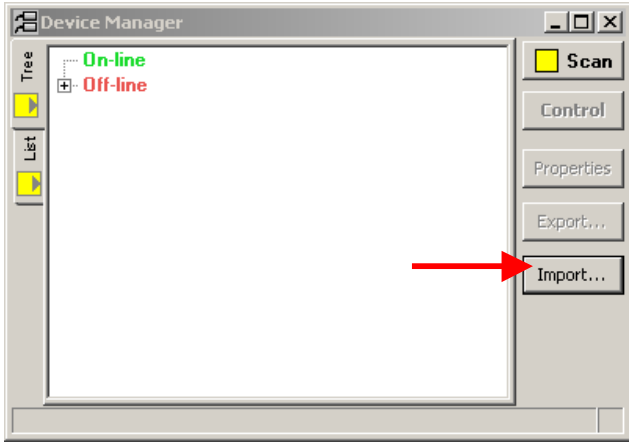


In the following dialog search for the license you need and confirm with [open].



A message will show you, which functions and parts were imported now. It is possible to import more than one license at once. To deactivate a license delete or cut the appropriate *.lic file in the installation folder of the software (…\TriOS GmbH\msda_xe\…). The license key can be imported again later on.

2.2 How to import device files



Device files are necessary for the operation of the sensor. They contain sensor specific data and calibration coefficients.

They can be imported step by step with the wizard.

Or click [Import…] in the Device Manager and search in the following dialog for the *.ini of your sensor. These files have always the same syntax. The name consists of sensortype and sensornumber. Some examples:

- SAM_82XX.ini for RAMSES radiometer
- MICROFLU_11XX.ini for microFlu fluorometer
- ENVIROFLU_28XX.ini for enviroFlu-HC fluorometer
- PROPS_D0XX.ini for a ProPS photometer
- VIPER_A0XX.ini for a VIPER photometer

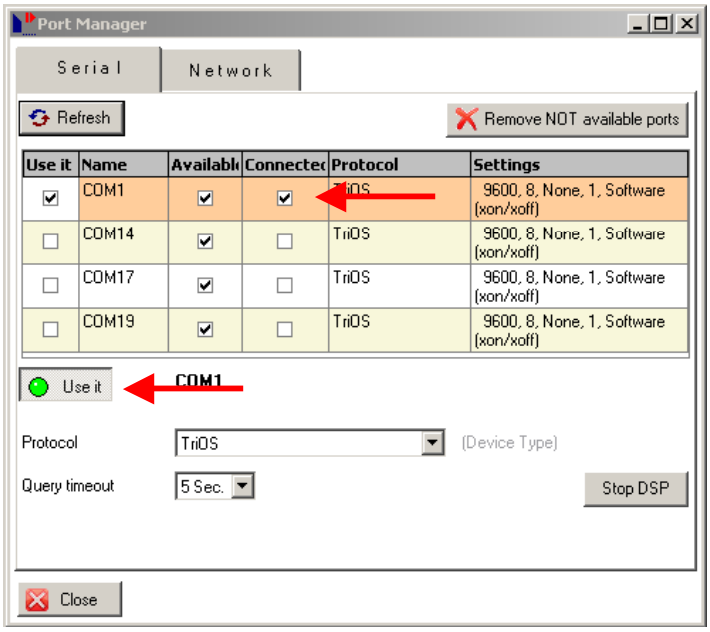
Confirm your choice by pressing [open]. The file(s) will be imported. If the powersupply is shut down, or the cable is not connected to the PC the device will be shown in the ‘offline’ section of the device manager. If the power supply is switched on, press [scan] and the sensor will change to ‘online’.

A good approach for installing a sensor and starting the measurement would be:

- import the files
- open the needed windows (control window, DB Sender, etc.)
- make settings if necessary
- save the settings with [Desktop / Save as...]
- physically connect the sensor and the powersupply
- start the powersupply
- [Scan] for the sensor in the device manager and activate the measurement in the sensor control window
- if necessary do the settings for the COM ports (chapter 2.3)

Most of the settings can be done, while the sensor is offline / off.

2.3 How to activate the RS232 ports



Check the hardware settings of your PC at first. Spot which port is used for sensor connection and activate it in the hardware manager. Install the drivers, if you use a serial-to-USB adapter. After the installation of the driver, a restart of Windows or MSDA_XE might be needed. A restart of Windows will cause a new numbering of the USB-ports.

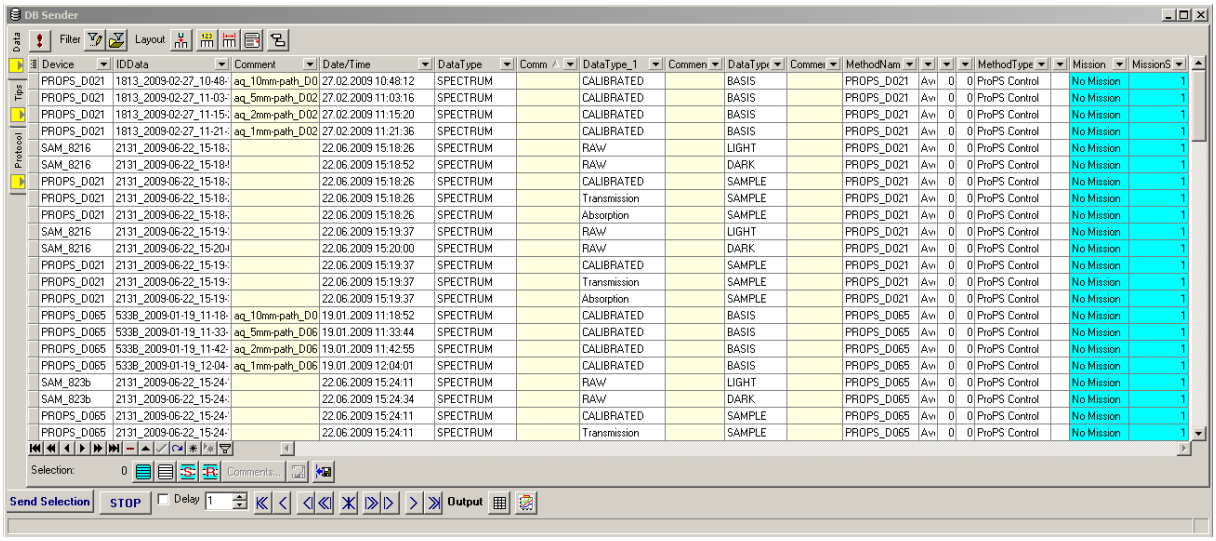
In the software press [Options / port manager…]. The port manager will be opened and show all available COM ports. Mark the channel you want to use and press [Use it] below.

For TriOS sensors the protocol of the COM port must be ‘TriOS’.

2.4 How to work with the database

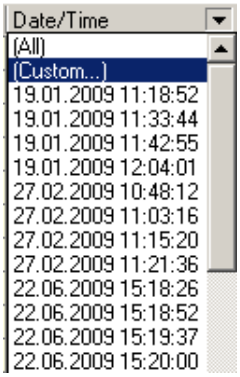
The software stores all measured data sets in the database and has several functions for organizing or exporting the data. The database can be started with [Database \ Data]. All data, also from different sensors are stored in one database. It is possible to change the database for each type of sensor of application. You will find an empty database in the

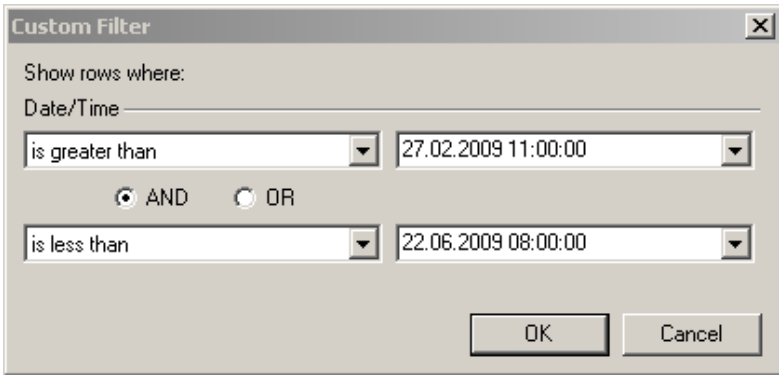
program directory, which can be copied and renamed for other measurement sessions. The settings for the used database can be done in the menu: [Database / configuration].



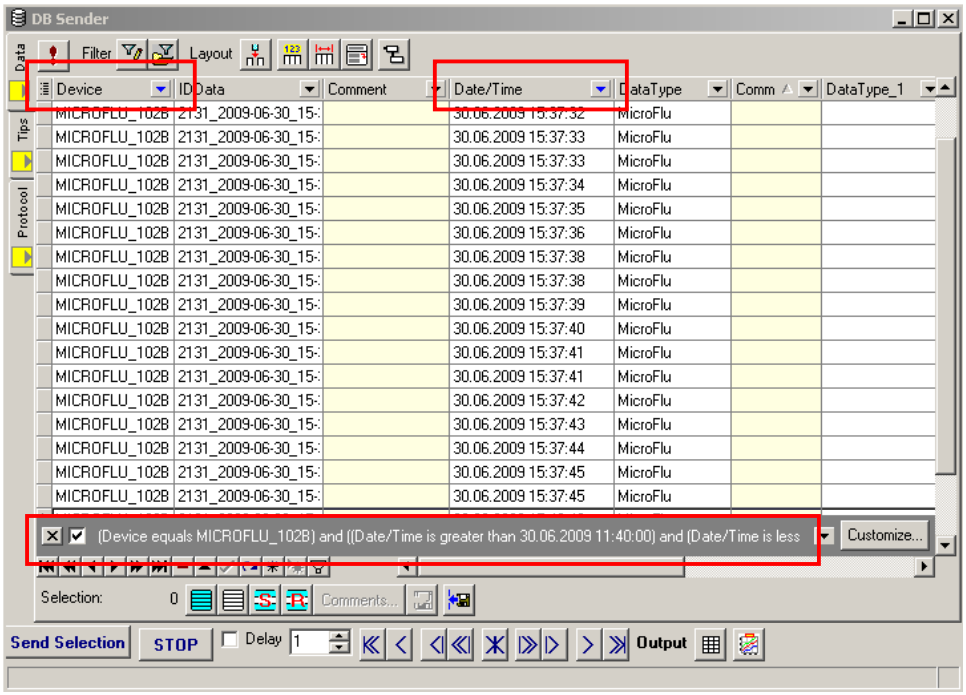
In the first row of the database the columns can be sorted by devicetype, comments, Datatype, Date/Time and so on. This allows the user to select the needed data for the export or further analysis. The data can be sorted by clicking on the columns name. For example sorting by Date/Time: Click on [Date/Time].

Clicking on the black arrows show the possible selection options. Data sets of a defined time area can be set by clicking on [Date/Time / (Custom...)].

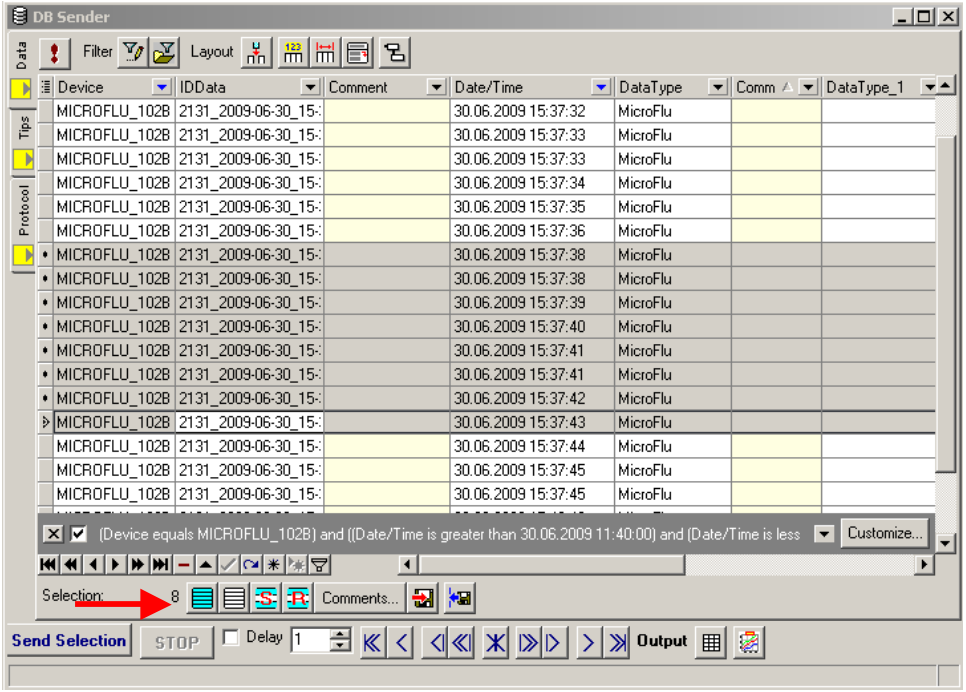




With more than one condition the selection can be specified. For instance in the following example with the data from microFlu_102B at 30.06.2009.

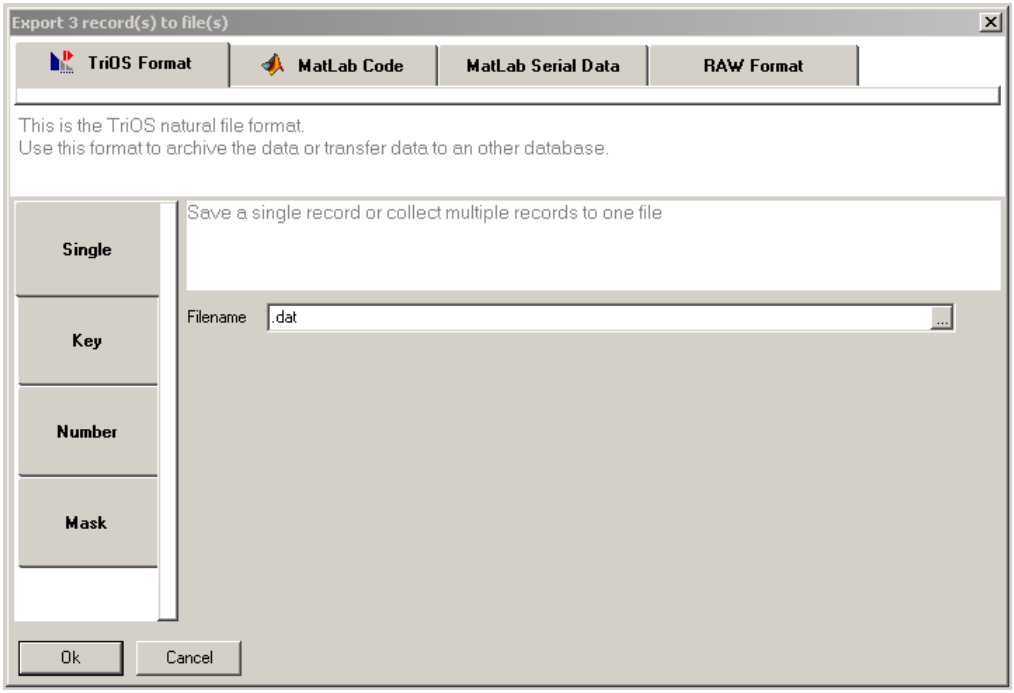


Mark the wanted datasets by hand, or select all by pressing the red marked button.



Data of the database can be exported in different file formats. At first mark the datasets you want to export and press on the export button.

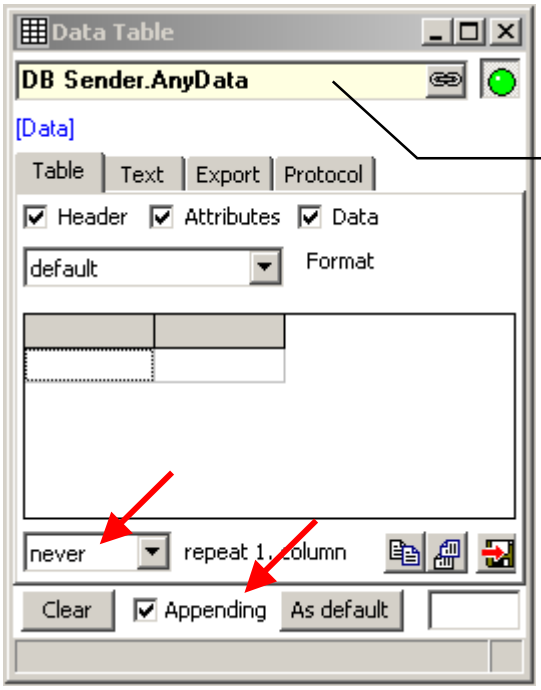
You can select, if all the data should be stored in one file, or in one file for each dataset.



For the export in a spreadsheet software, the internal data table can be used.

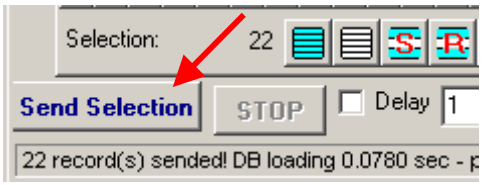
Start a table:

Make the settings for ‘repeat 1. column’ and ‘Append new’ as given below:



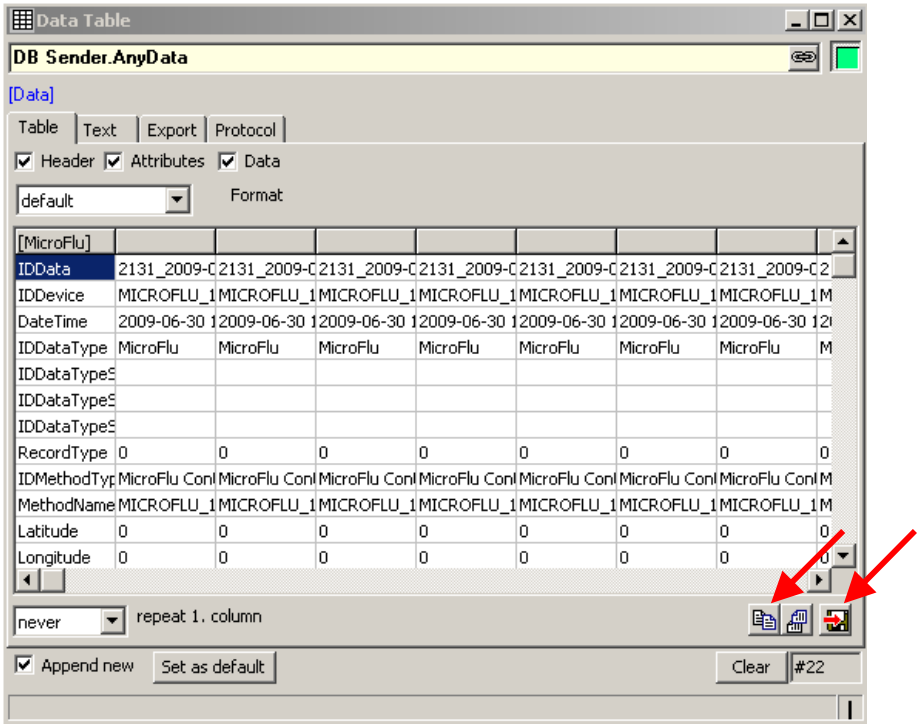
When a table is started directly from the DBSender, the link is automatically configured for the DBSender

Now select the data to be exported and click on [send selection] in the DB Sender.



Simultaneous pressing of the [Ctrl]-key and [Send selection] will activate a fast data processing.

Now the data can be copied or copied transponed to another software or saved as a txt-file.



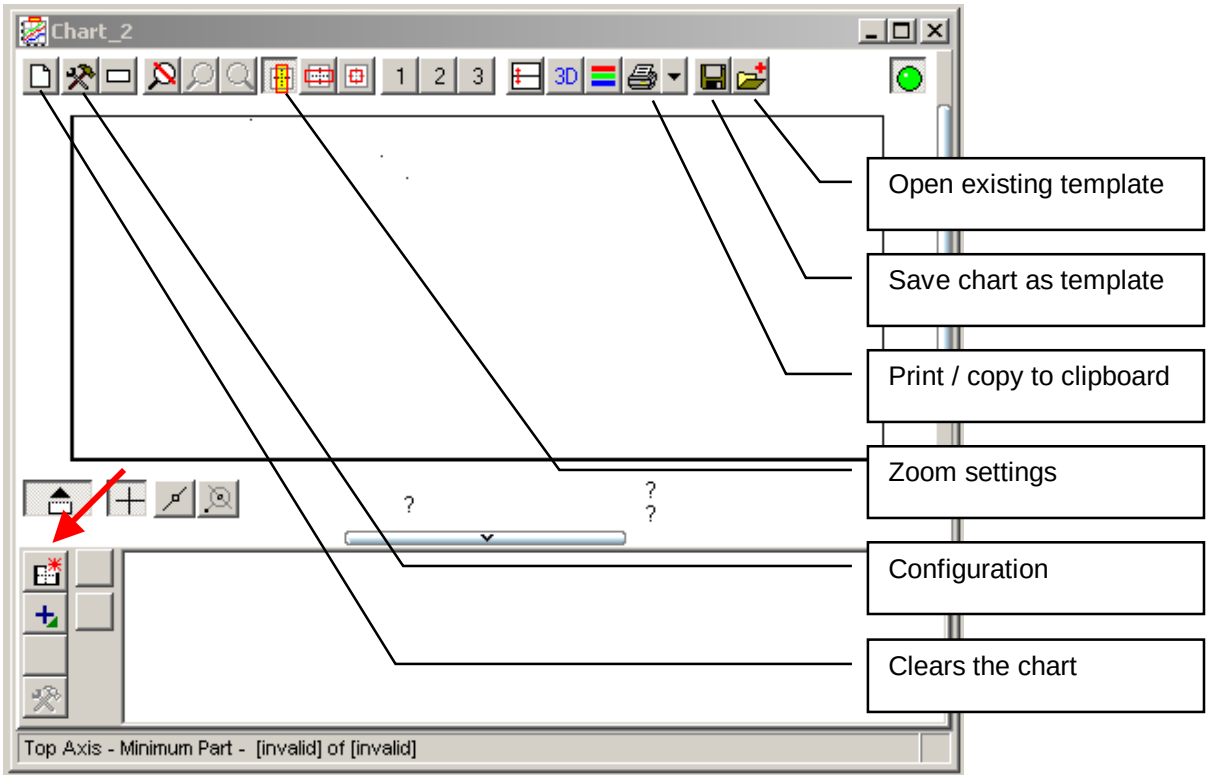
Import data into a database:

Data with the *.dat format can be imported into an existing database. Click on the import button.

Select the *.dat file to be imported and confirm with [open].

2.5 How to work with the Chart / Diagram

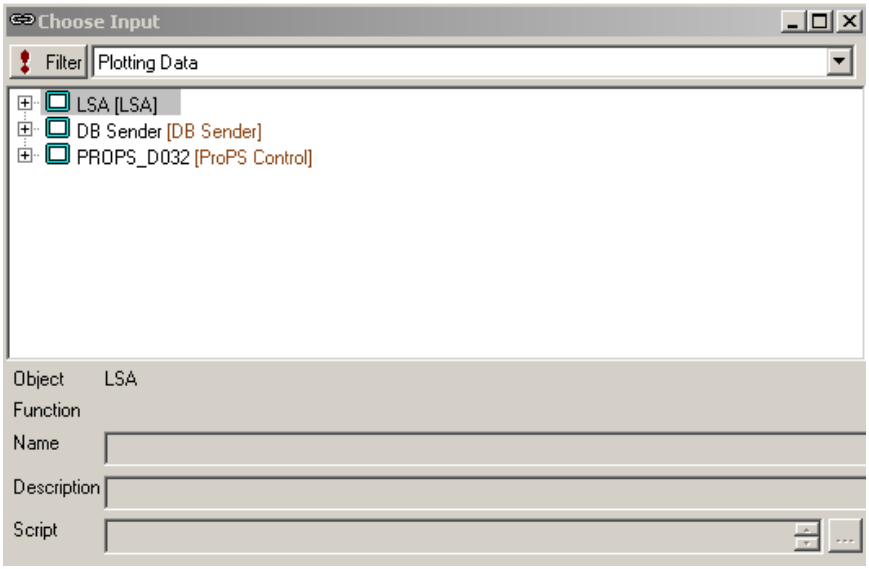
The chart is the module to visualize data in timeseries or spectra. The chart can be started with [Views / Chart].



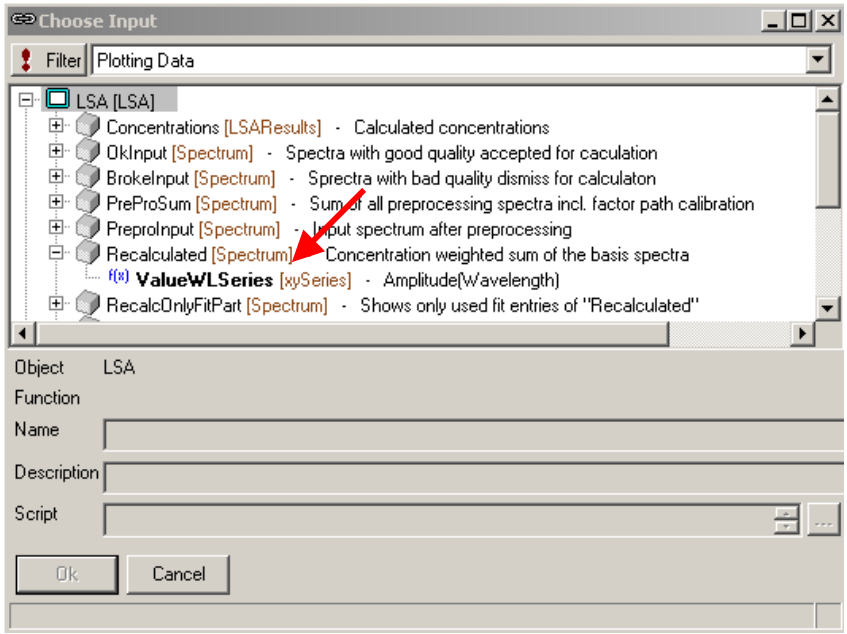
The window contains at first 1 chart. Different sub charts can be added to the window (marked with red arrow).

When the chart is not started directly from a sensor control window the chart has no input. A new input can be added with this button:

The following window will appear (depending on the used modules this window can look different):



In this case three data inputs are possible. Using other sensors will show other input sources. As an example: to view the recalculated spectrum of the LSA this input has to be selected:

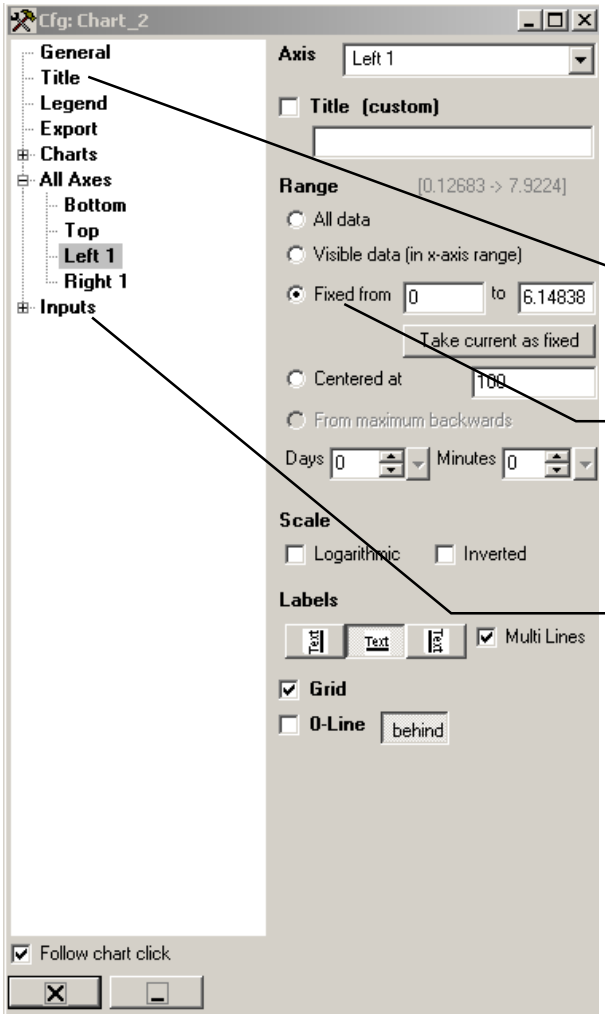


Select LSA / Recalculated and double click in ValueWLSeries to select it as an input.

More than one input will cause an overlay of different graphs.

Double clicking on the x- or y-axis of the chart will open the configuration window of the chart:

MSDA_XE
Quick start manual



Editing the diagrams title

Limitting the visible data range of the selected axis

Configuring the inputs. Setting overlays, etc…

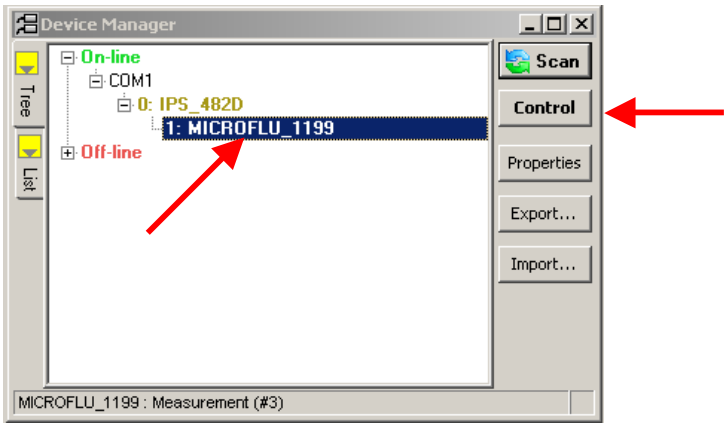
3. microFlu

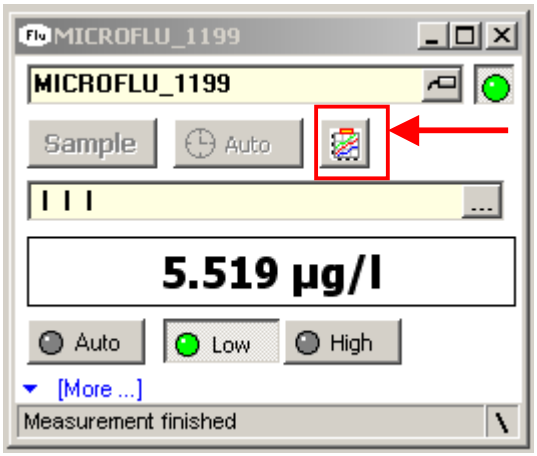
Needed files:

- device file: MICROFLU_XXXX.ini
  whereas XXXX stands for the sensor number.

The following steps can be performed, while the sensor is offline / off. Install the necessary files.

Mark the newly installed sensor and press [Control] to open the sensors control window.

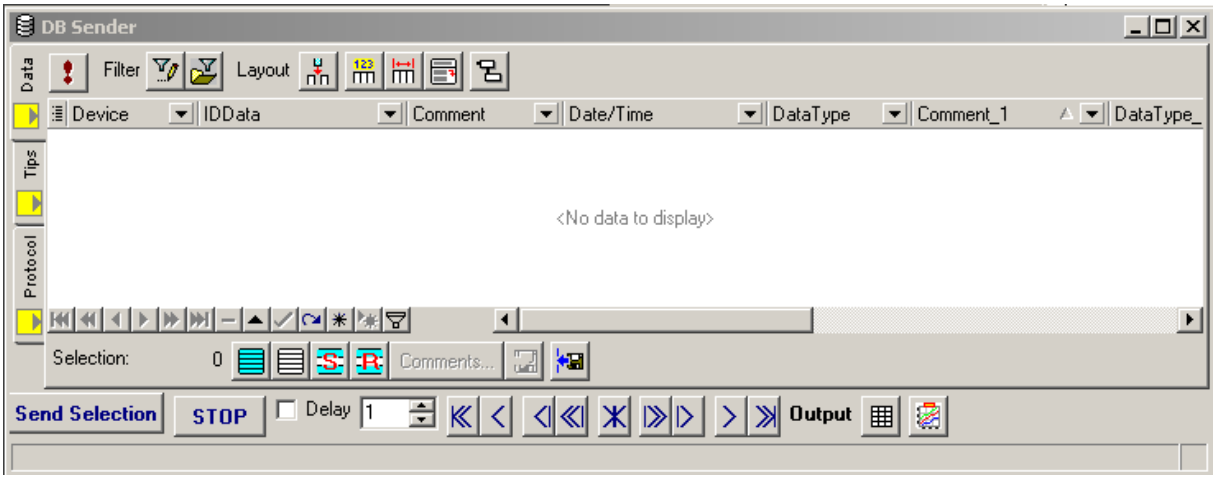




The control window for microFlu will start. Without any further settings the sensor will measure in the continuous mode, which means, the sensor sends data as fast as possible. Every dataset will be stored in the database.

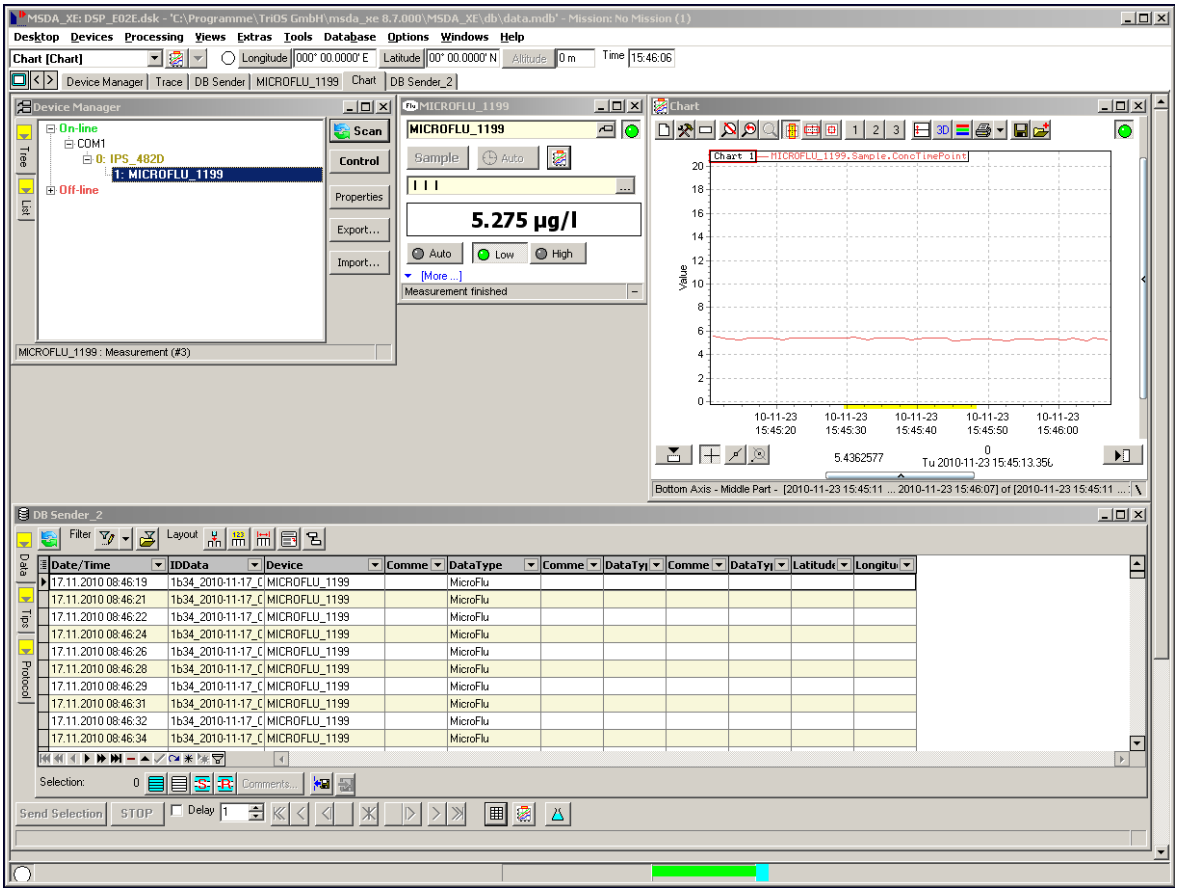
If you need a timeseries of the measurement press the little button in the upper right of the microFlu control window (in the picture above marked with a red square). A chart with the correct inputs for a timeseries will open.

Open the database by pressing [Database / Data].



Read chapter 2.4 to learn how to work with the DB Sender.

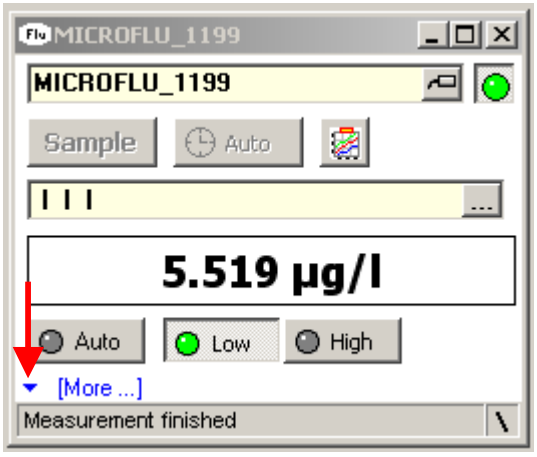
Now the desktop should look like this or similar:



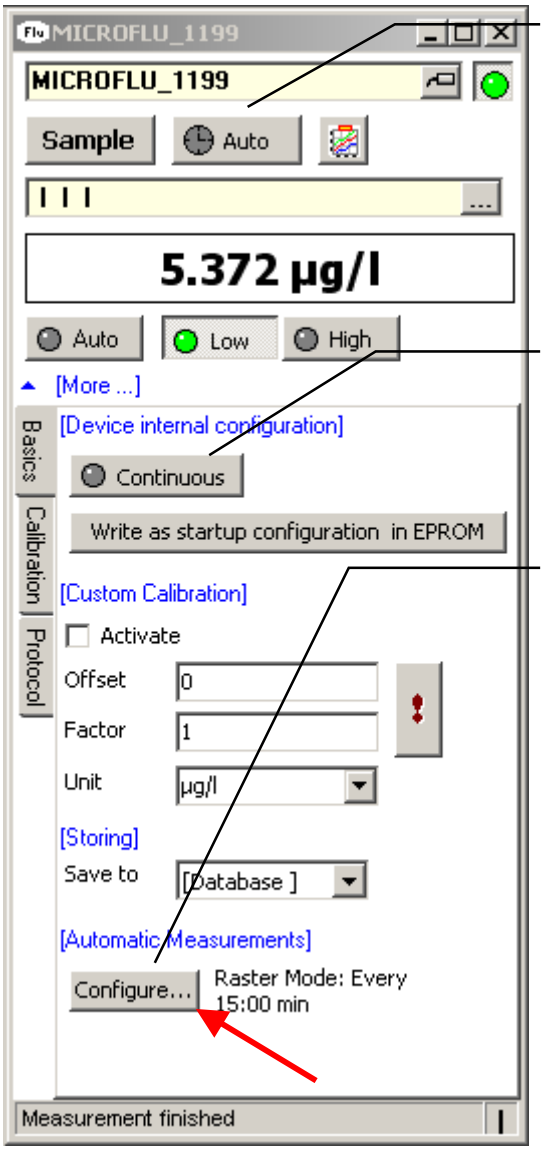
The measurement can start, if you activate the power supply and press [scan] in the device manager to search for the sensor. When the sensor is detected by the device manager the measurement will start immediately and the data will be stored in the database.

Changing the sample interval:

Press [Advanced options] in the microFlu control window:



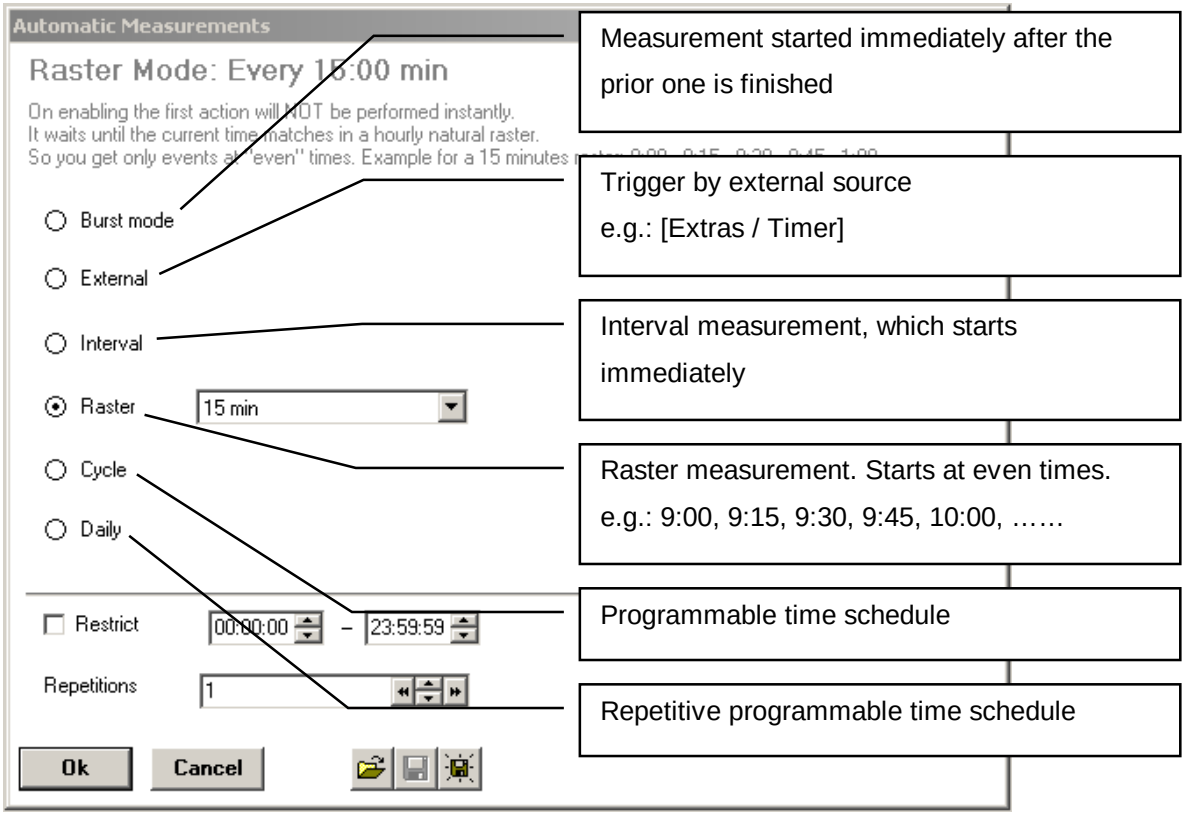
Settings for the sample interval, custom calibrations and storing can be done in the advanced options menu. Following window will appear:



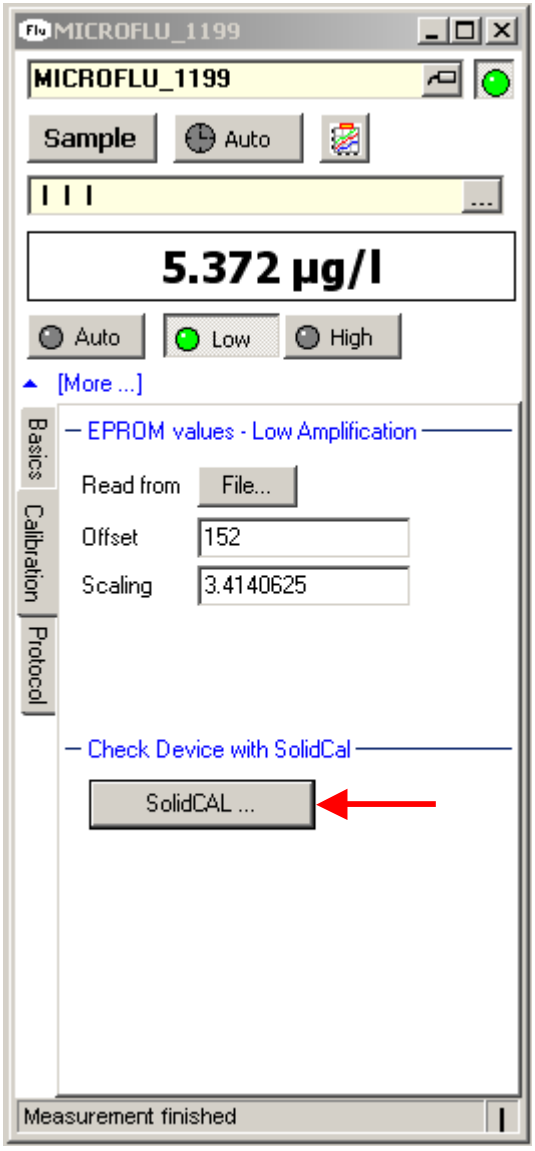
Switching raster measurement on / off. Configuration for raster or interval at [automatic measurements]

Switching continuous measurement on / off.

Settings for the sample interval. Continuous mode has to be deactivated. Switch on: [Auto] must be green.



Settings for automatic measurements can be done in the menu shown above. Interval means a measurement is triggered every 15:00 minutes. The interval starts immediately. Raster means, the measurement is triggered at “even” times. If 15 min is set at 8:55 o’clock, the first measurement will start at 9:00, the next at 9:15, 9:30 and so on. Burst mode means the measurement is triggered as fast as possible. In this case the burst mode is the same as continuous mode.



In the tab [Calibration] the device check with the SolidCAL solid secondary standard can be started.

Exporting the data:

Read chapter 2.4 how to export the data of microFlu from the chart of database.

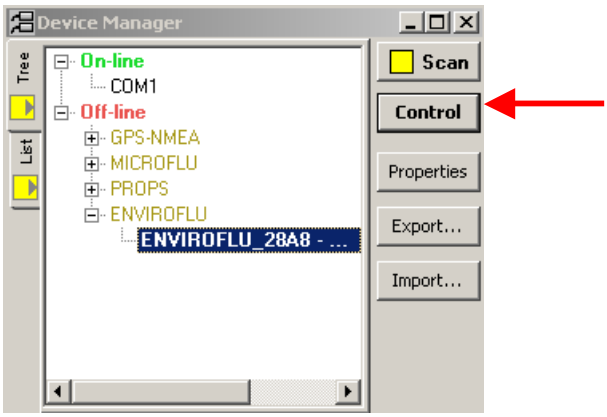
For further instructions read the microFlu or MSDA_XE manual.

4. enviroFlu-HC

Needed files:

- device file: ENVIROFLU_XXXX.ini
  whereas XXXX stands for the sensor number.

Install the necessary files and license keys. The operation of enviroFlu is nearly similar to the operation of microFlu. Mark the enviroFlu instead of the microFlu in the device manager and press [Control..]



This will start the enviroFlu control. The settings and the sensor behaviour is similar to the microFlu.

Read chapter 3 for more information of the operation of TriOS fluorometers.

Exporting the data:

Read chapter 2.4 how to export the data of enviroFlu.

For further instructions read the enviroFlu or MSDA_XE manual.

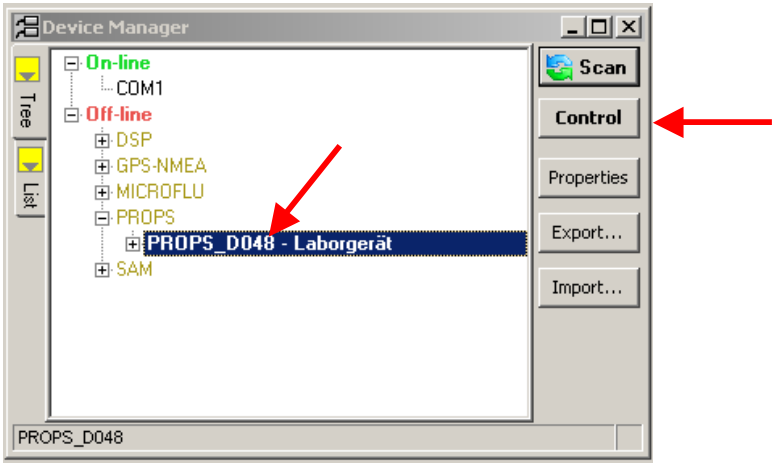
5. ProPS

Needed files:

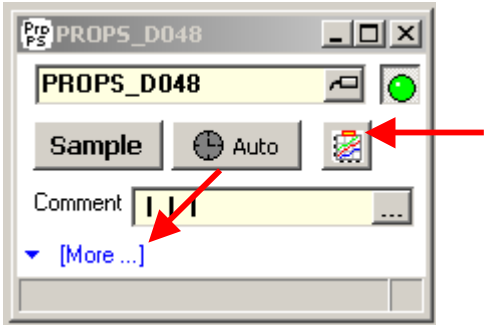
- device file: PROPS_XXXX_all.ini
  whereas XXXX stands for the sensor number
- water basis (e.g. “20081031_water basis_10-5-2-1_D065.dat”)

The following steps can be performed, while the sensor is offline / off. Import the device file for the ProPS and the license keys.

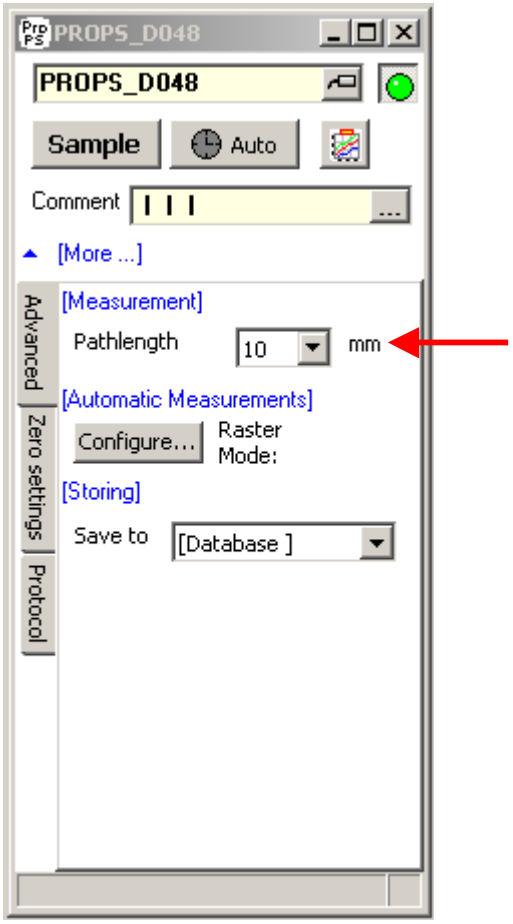
Mark the newly installed sensor (in this case D065) in the device manager and press [Control] to open the sensors control window.



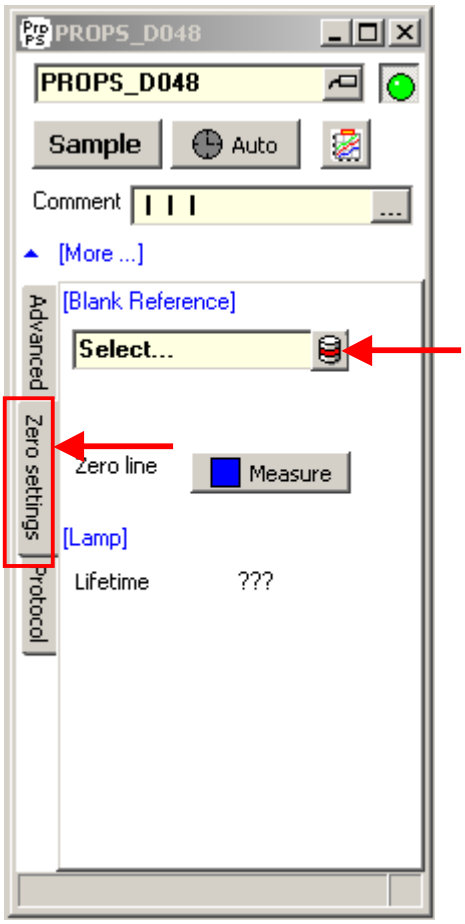
In the ProPS control window open a chart for the measured absorption spectra.



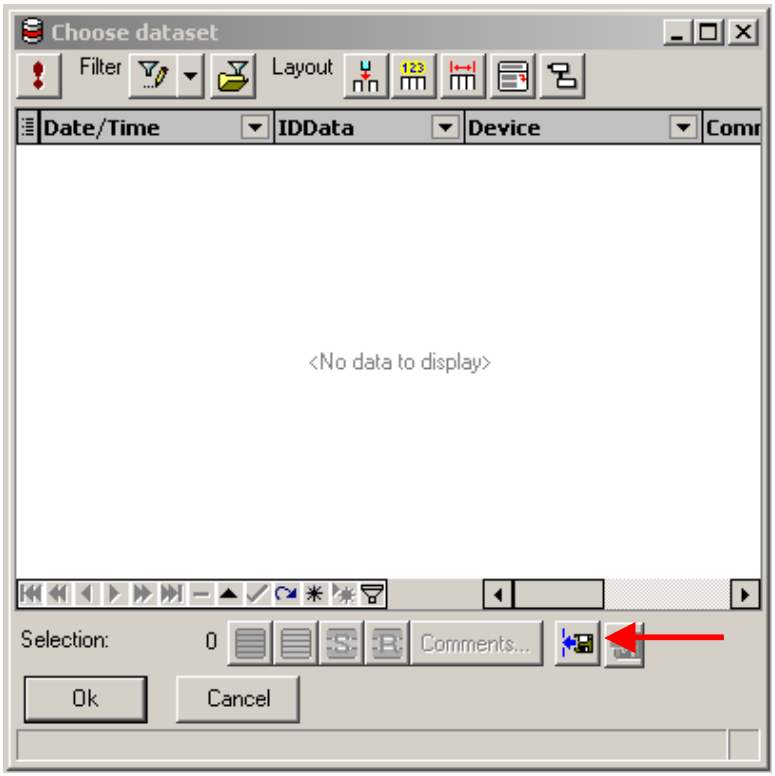
Open the [Advanced Options] by clicking on the small blue arrow at the bottom of the ProPS Control window.



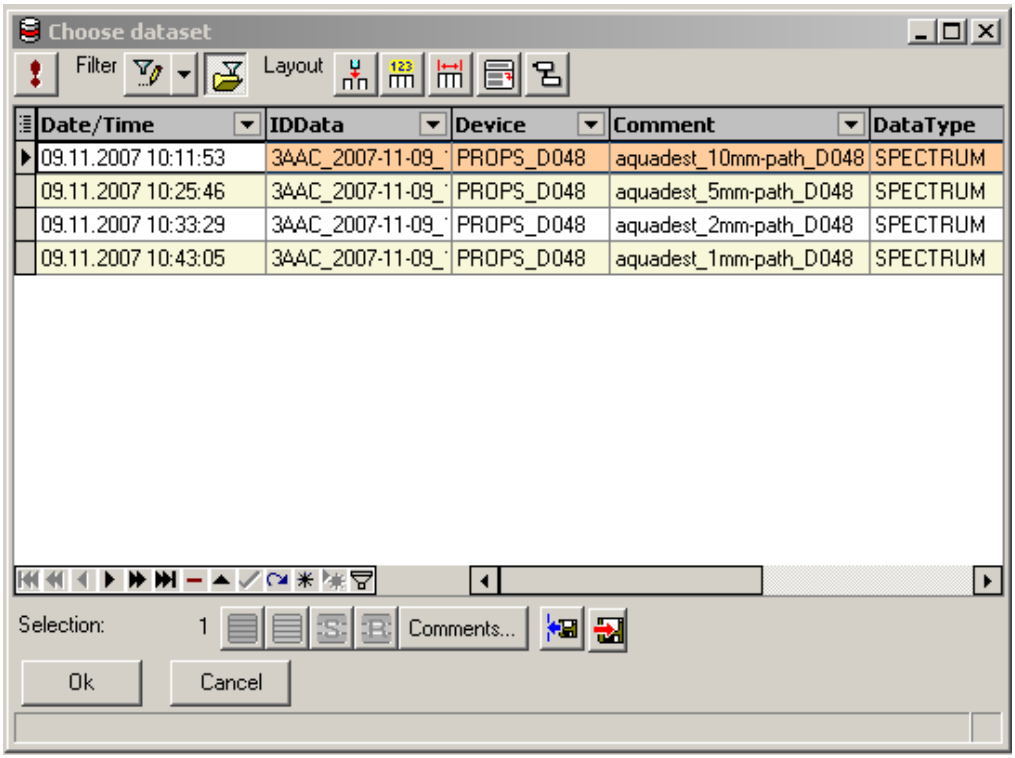
The setting of pathlength must fit with the actual physical pathlength of the sensor. Choose 1, 2, 5 or 10mm for ProPS WW or 10, 20, 40 or 60mm for ProPS CW. Read the ProPS manual carefully how to change the optical pathlength of ProPS CW / WW.



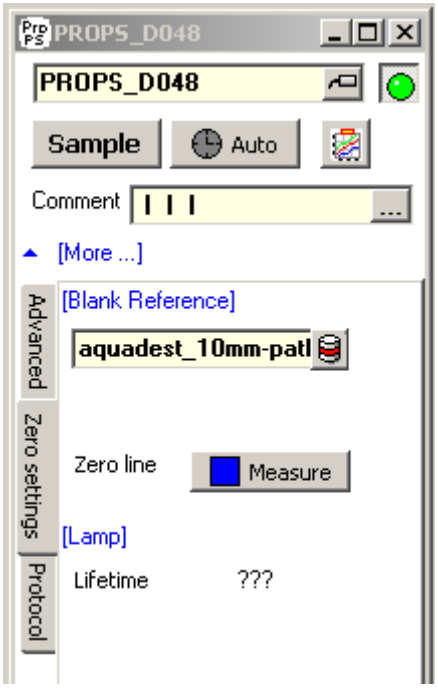
Go to the tab [Zero settings] and click on the red and white square. Following dialog will open:



Click on the import button and search in the following dialog for the fitting water basis file (e.g. “20081031_water basis_10-5-2-1_D048.dat”) and confirm your selection.

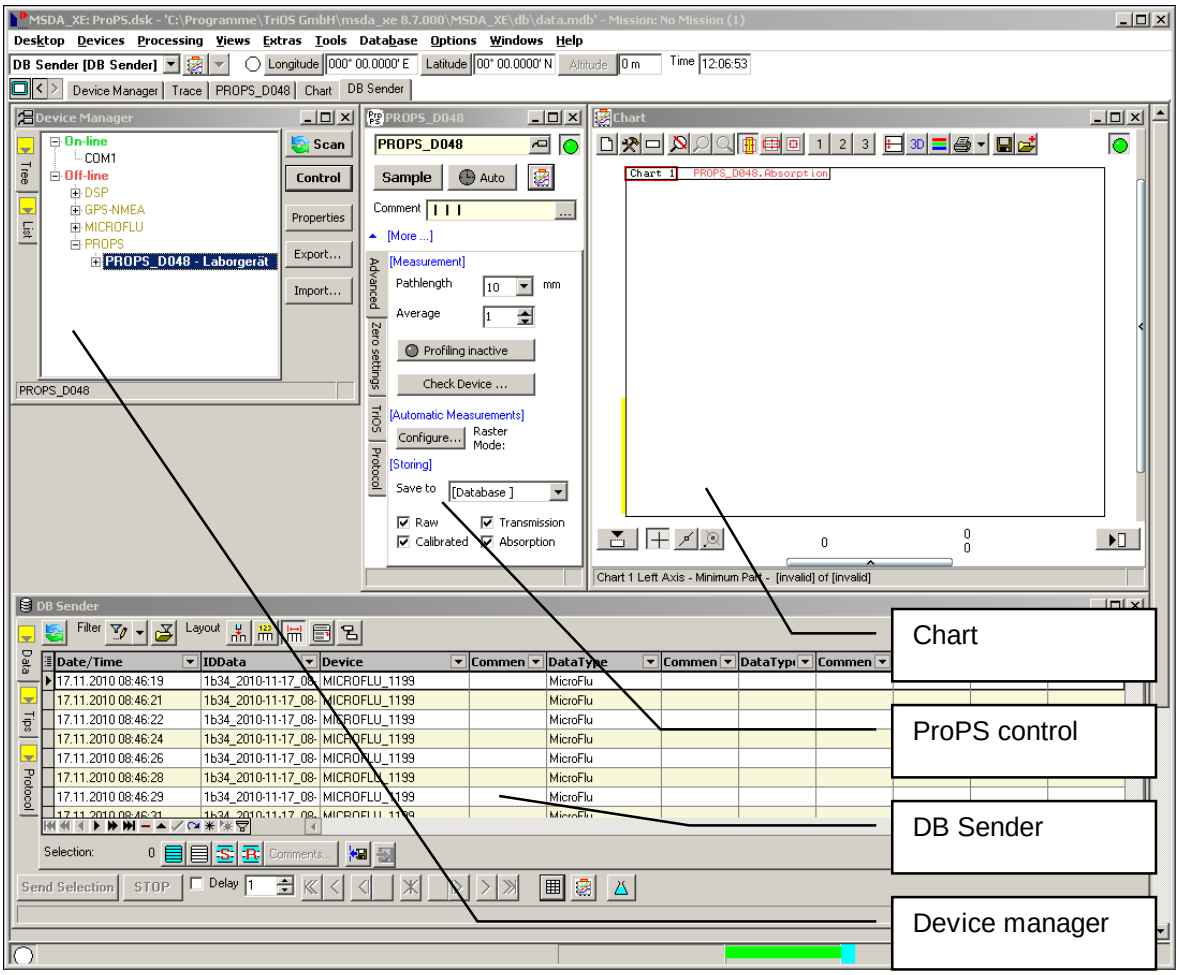


A water basis is available for each possible pathlength. The pathlength is marked in the Comment, e.g. aq_10mm-path_D048… is the waterbasis for sensor D048 with a pathlength of 10mm. Choose the fitting water basis and confirm with [Ok]. The water basis, the setting for the pathlength in mm and the actual pathlength of the sensor have to be the same!



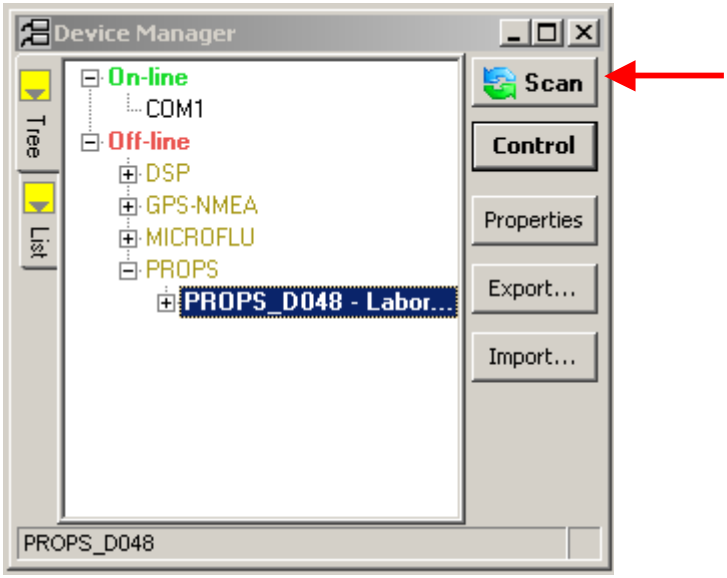
Open the database by pressing [Database / Data].

The desktop may look like this or similar:

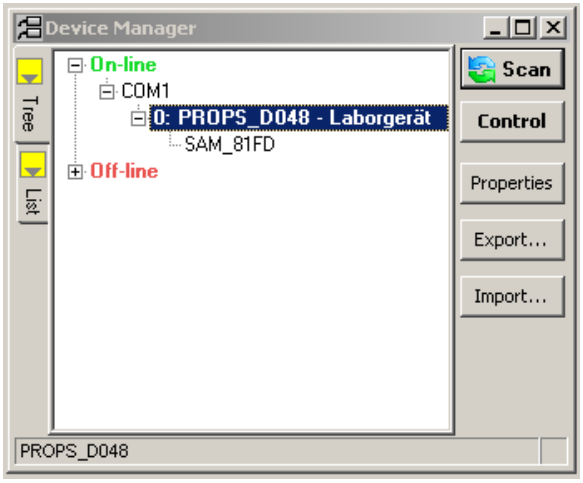


If you are satisfied with the window array and the settings, save the desktop.

Start the powersupply and press [scan] in the device manager.

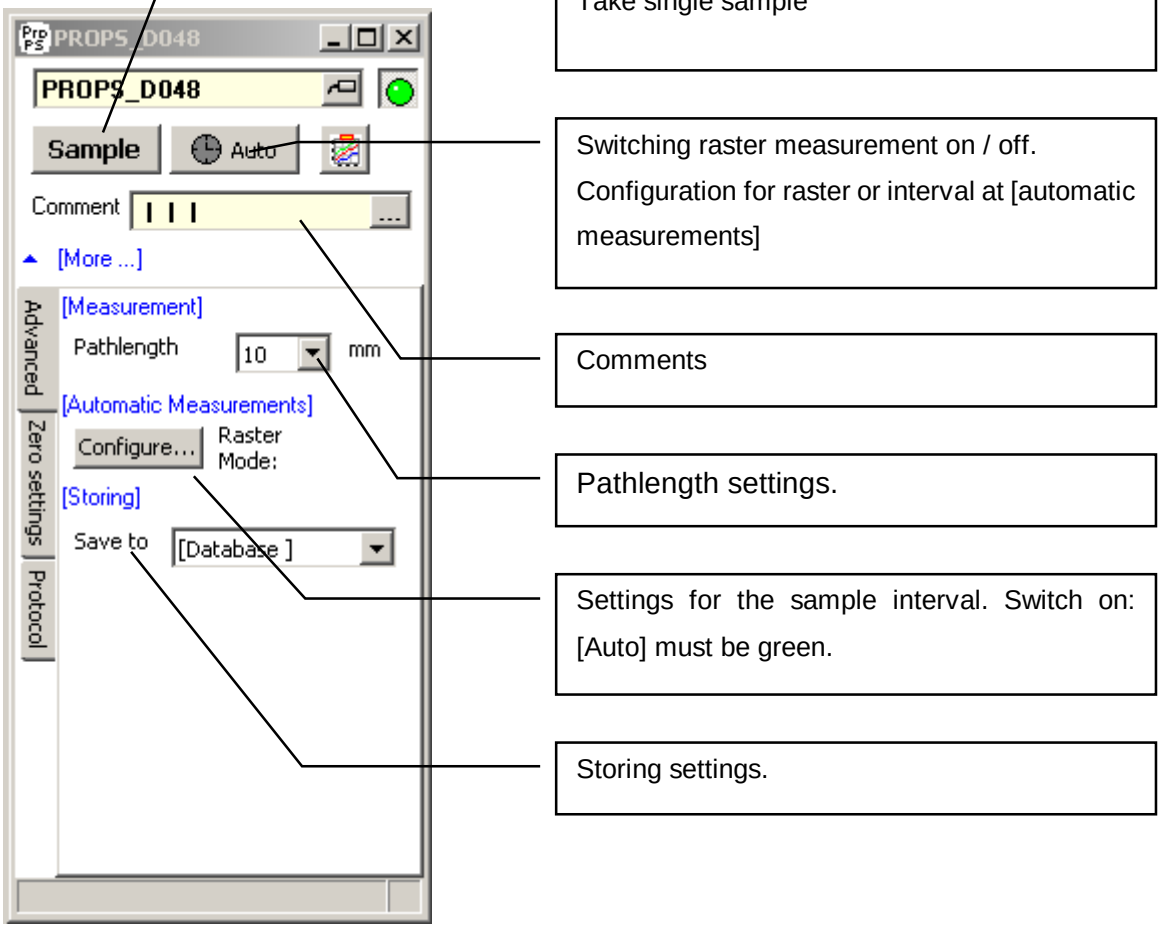


The detected device will be listed in the device manager:

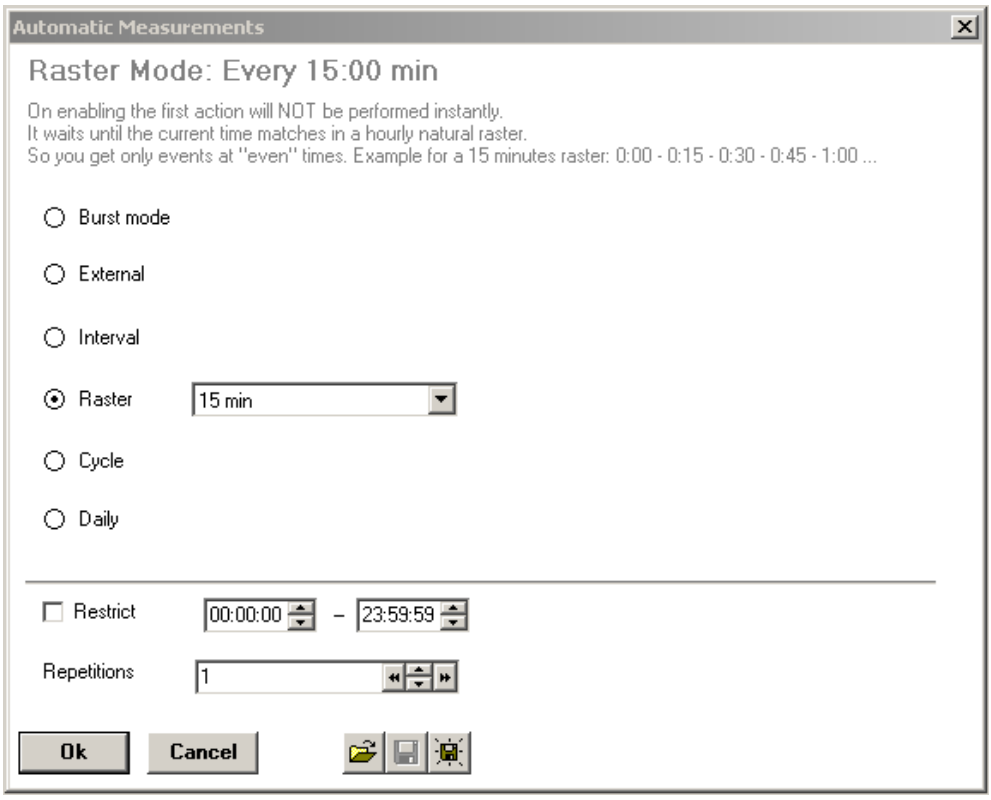


If the sensor is detected, a single measurement can be started with the ProPS control window by pressing [Sample] or a raster / interval measurement can be started with

.



Settings for the sample interval and storing can be performed in the advanced options menu. Press [Configure] to launch the configuration menu.



Interval means a measurement is triggered every 15:00 minutes. The interval starts immediately. Raster means, the measurement is triggered at “even” times. If 15 min is set at 8:55 o’clock, the first measurement will start at 9:00, the next at 9:15, 9:30 and so on. An interval or raster of 15 minutes is recommended to save lamp lifetime of ProPS.

Measured spectra can be exported for example with a table (read chapter 2.4).

Please refer to the ProPS or MSDA_XE manual for more information.

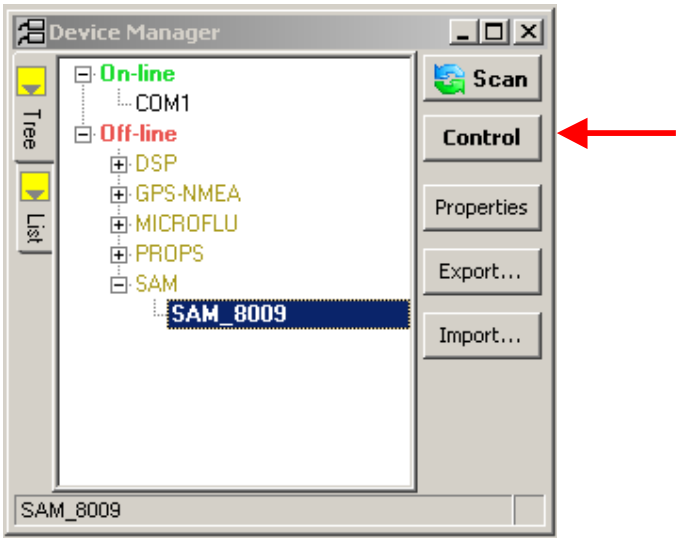
6. RAMSES

Needed files:

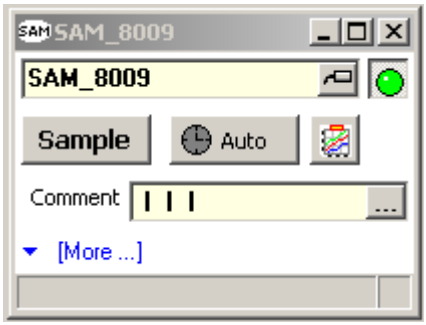
- device file: SAM_XXXX_all.ini or SAMIP_XXXX_all.ini
  whereas XXXX stands for the sensor number
- calibration files:
  - Back_SAM_XXXX.dat
  - Cal_SAM_XXXX.dat (calibration for application in air)
  - CalAQ_SAM_XXXX.dat calibration for water application)

The following steps can be performed, while the sensor is offline / off. Install the necessary files and license keys.

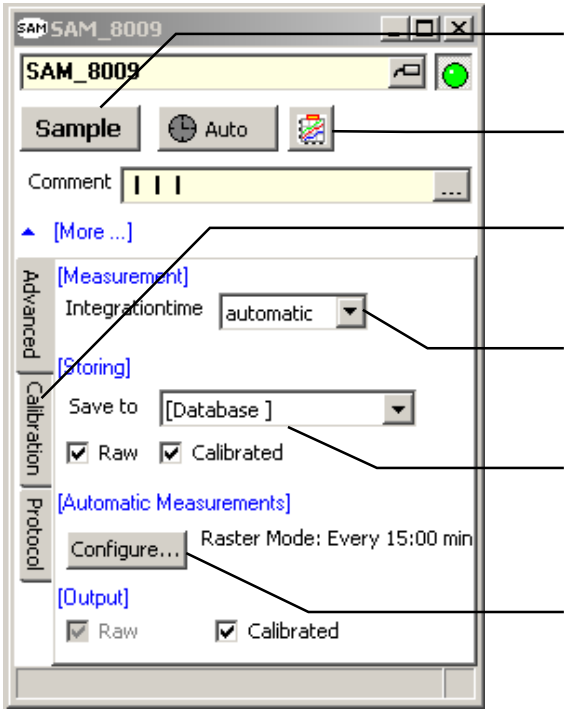
Mark the newly installed sensor in the device manager and press [Control] to open the sensors control window.



The RAMSES control window will open.



Open the [Advanced options].



Start single sample

Open chart with RAMSES control as input

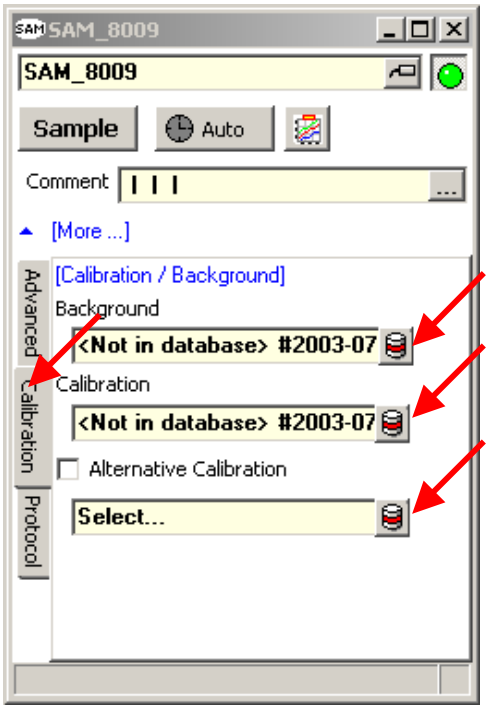
Calibration settings

Integration time. Recommended: automatic

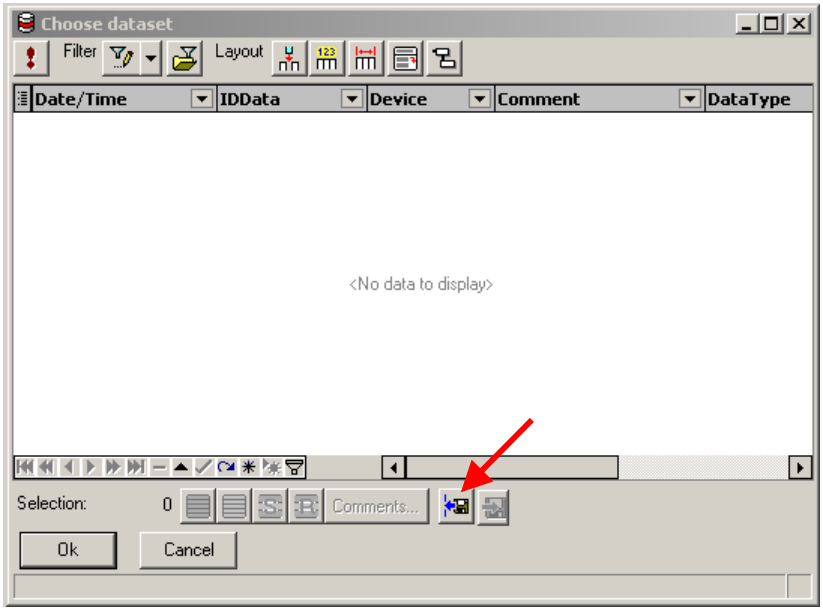
Storing settings

Settings for the sample interval
Switch on: [Auto] must be green.

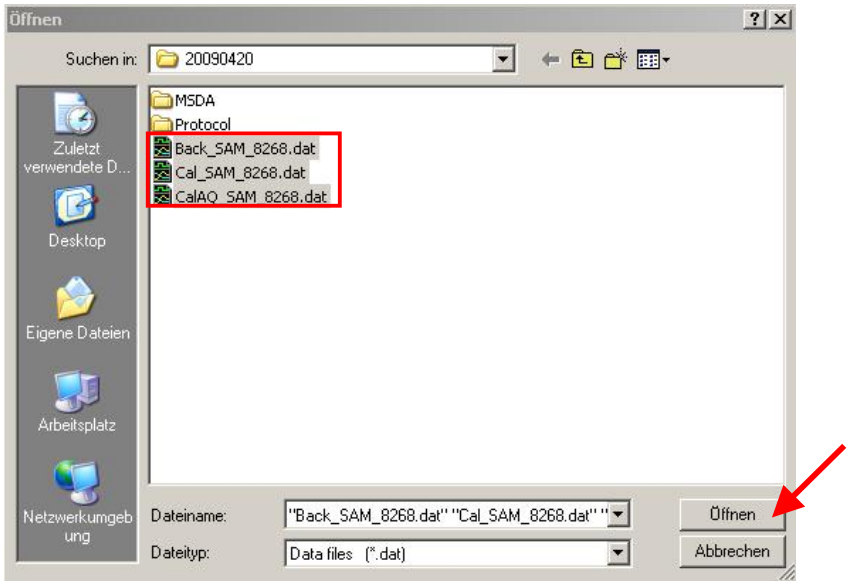
To integrate the calibration and back ground files open the tab [Calibration]

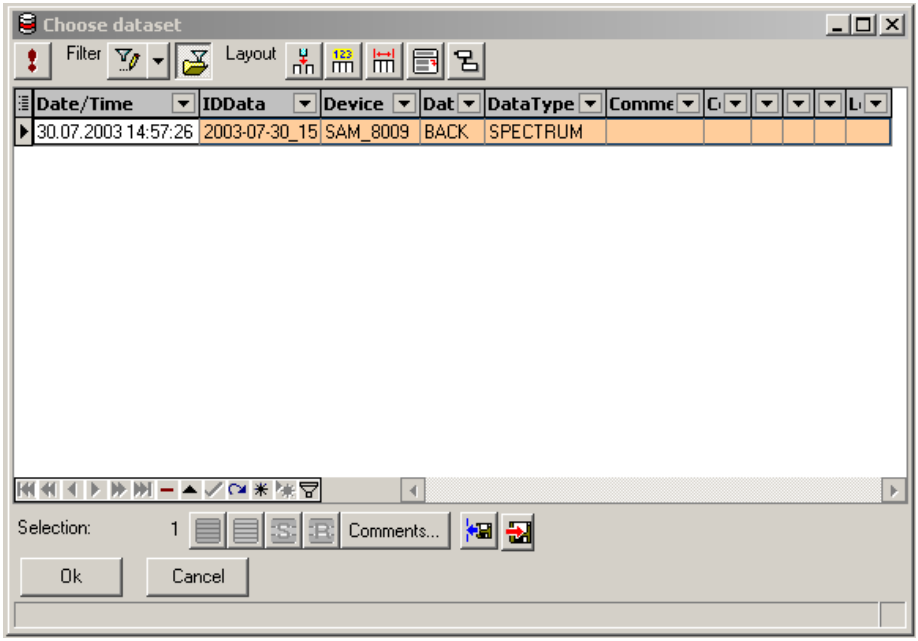


Click on the marked buttons to load the calibration or background files. Following dialog for selecting the files will appear.

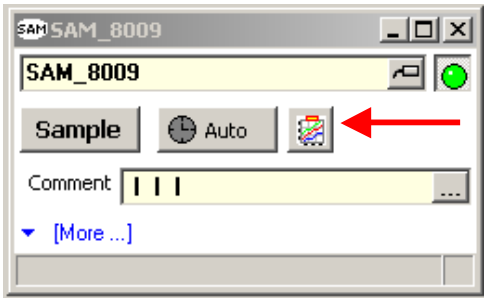


Select all three files (Back_, Cal_ and CalAQ_) and confirm with [open].

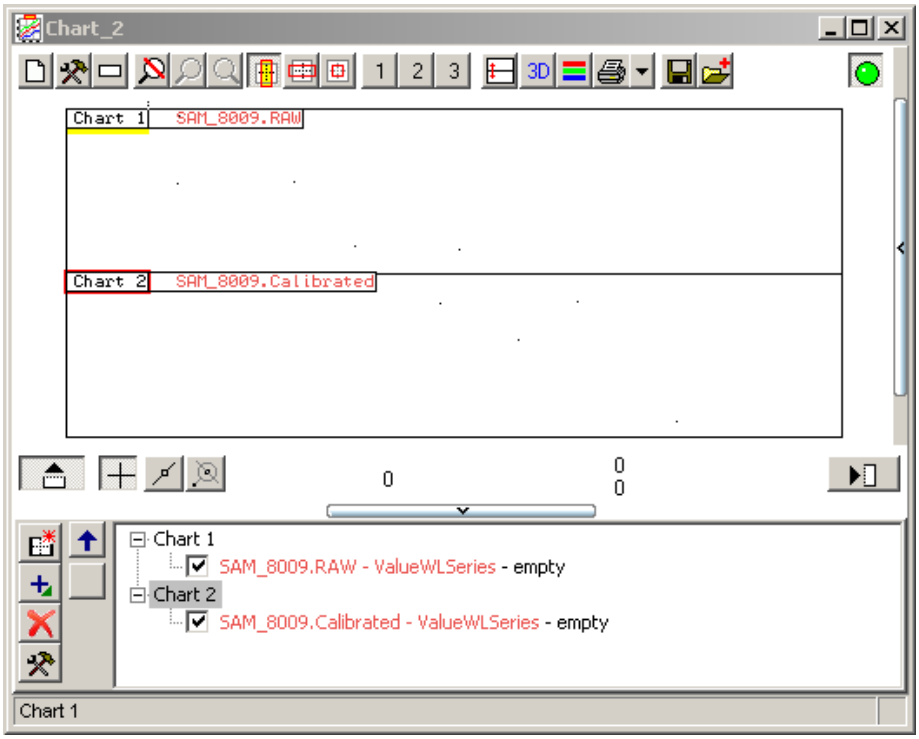




Select the file with the datatype ‘BACK’ for the background. Choose the calibration file for air or for water application depending of the usage. Choose the other one for the alternative calibration.

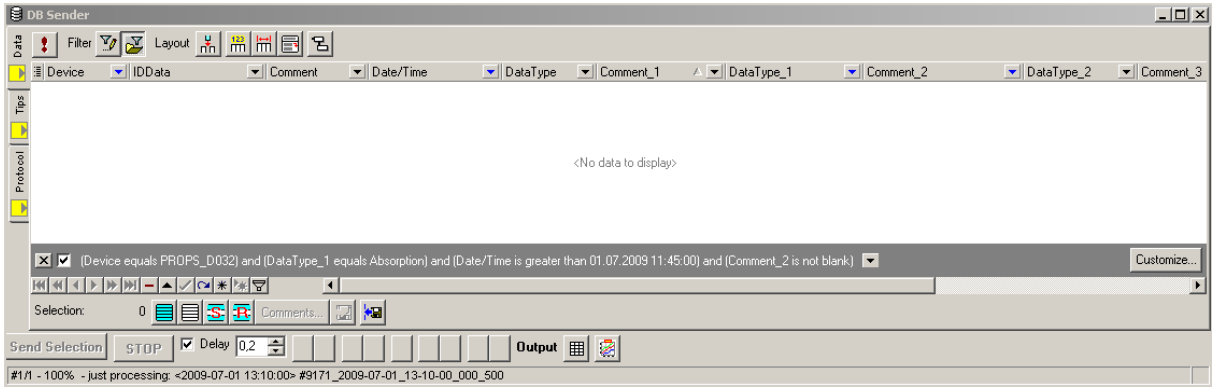


To visualize the data of the sensor press on the marked button.

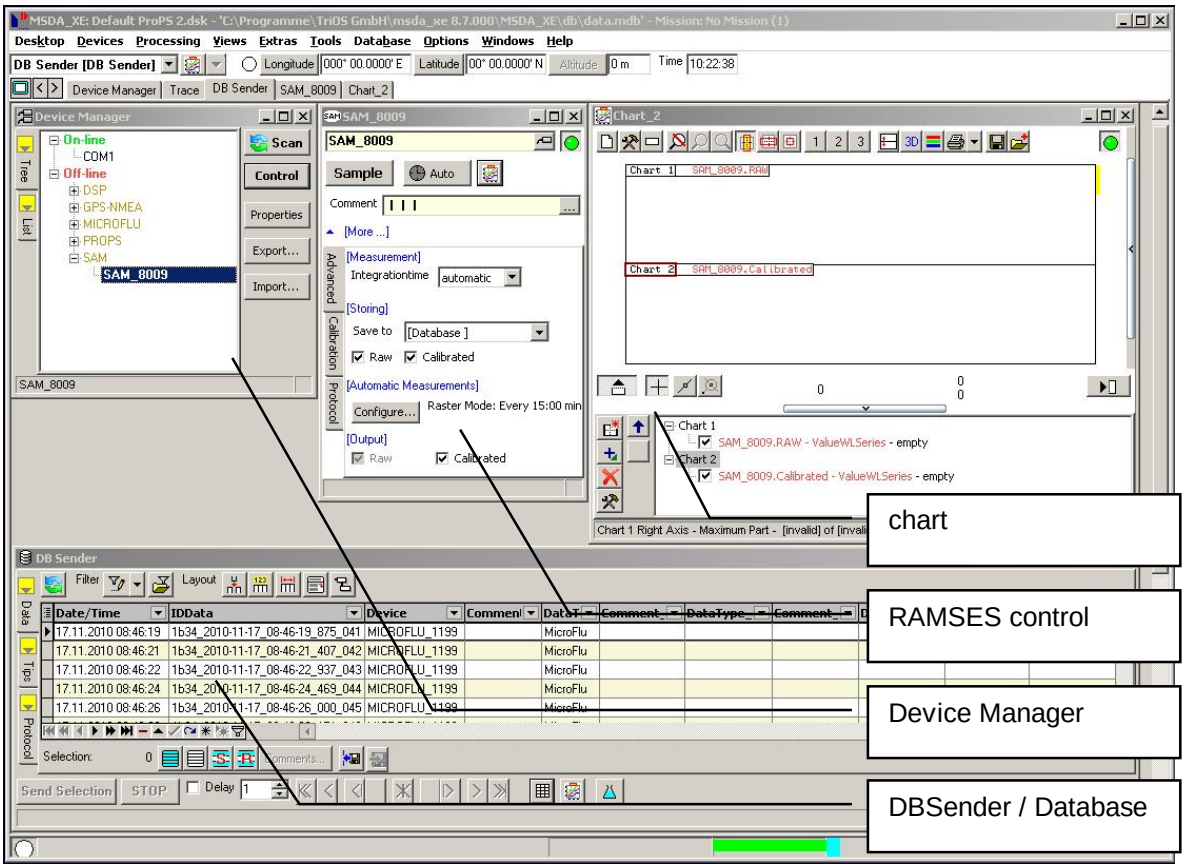


This window will appear. The input for the data is automatically set to the RAMSES control showing RAW and calibrated spectra. It is also possible to change the inputs to DB Sender, which enables the user to view data, which are stored before in the database.

Open the DB Sender by pressing [Database / Data].

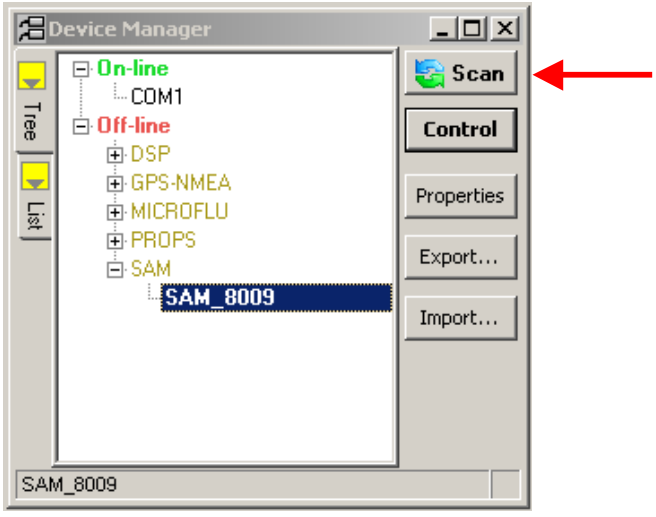


The measured spectra will be saved automatically in the database.

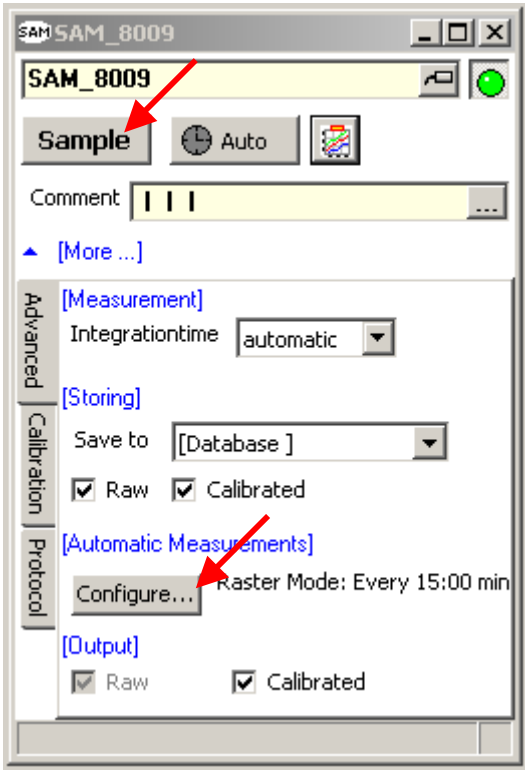


If you are satisfied with the settings and the window array save the desktop with [Desktop / Save..].

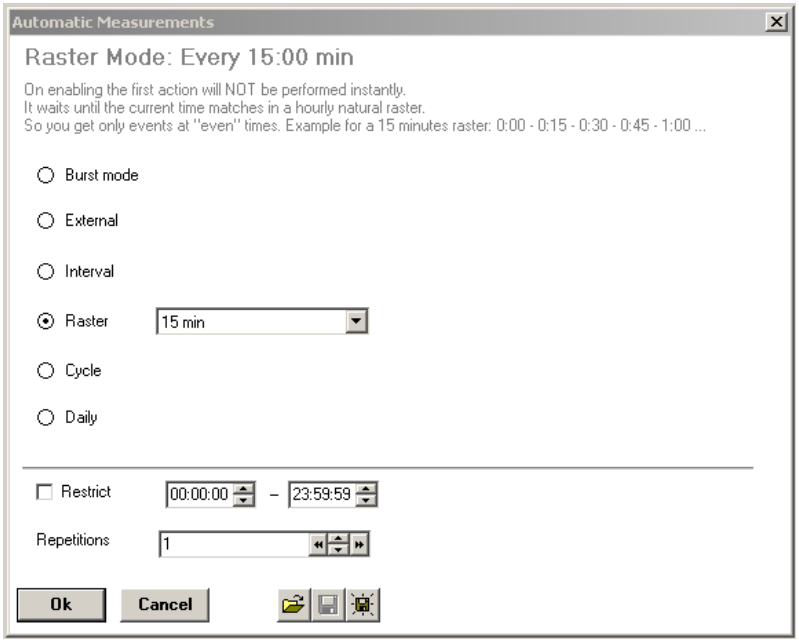
Start the power supply and press [scan] in the device manager.



When the sensor is detected a measurement can be started within the control window.



A single measurement can be started with [Sample] and an automatic measurement or an interval measurement can be configured in the submenu [Automatic Measurements / Configure].



Settings for automatic measurements can be done in the menu shown above. Interval means a measurement is triggered every 15:00 minutes. The interval starts immediately. Raster means, the measurement is triggered at “even” times. If 15 min is set at 8:55 o’clock, the first measurement will start at 9:00, the next at 9:15, 9:30 and so on. Burst

mode means a new measurement is triggered immediately, when the previous measurement is finished.

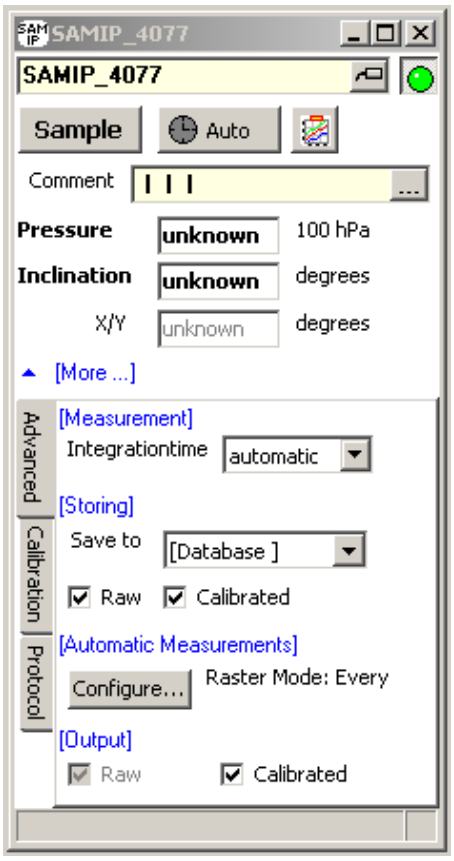
Automatic measurements can be activated by pressing 

, to switch it to green: 

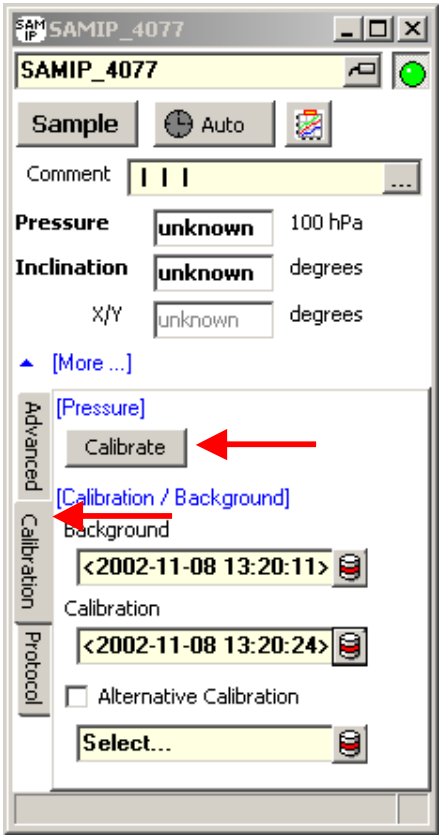
.

If you use a RAMSES with inclination and pressure sensor (SAMIP) the settings are nearly the same.

The control window of the SAMIP looks like this:



To adjust the sensor to the actual barometric pressure, the pressure sensor can be calibrated to zero in the tab [Calibration].

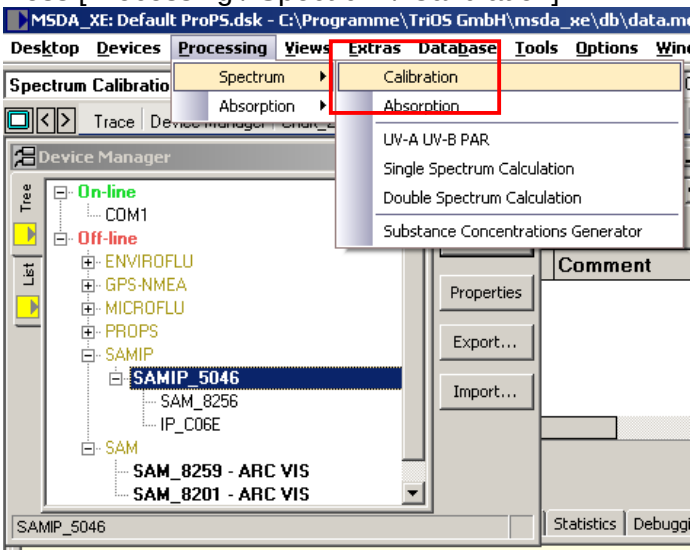


Measured spectra can be exported for example with a table (read chapter 2.4).

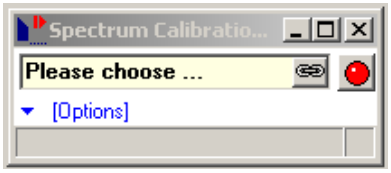
Additional settings and options for RAMSES

Setting µEinstein as default unit:

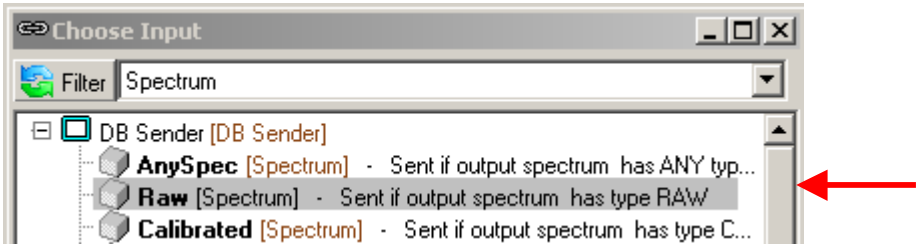
Press [Processing / Spectrum / Calibration].



Following window will appear:

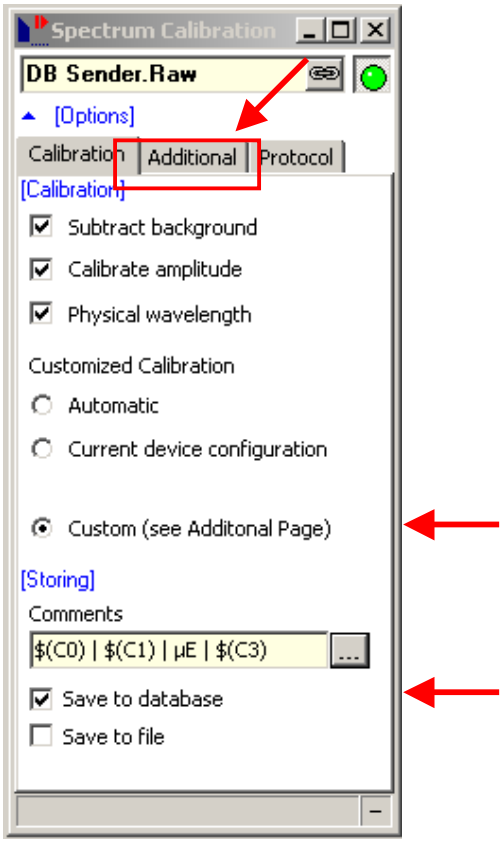


Choose the Raw spectra of your RAMSES as input…

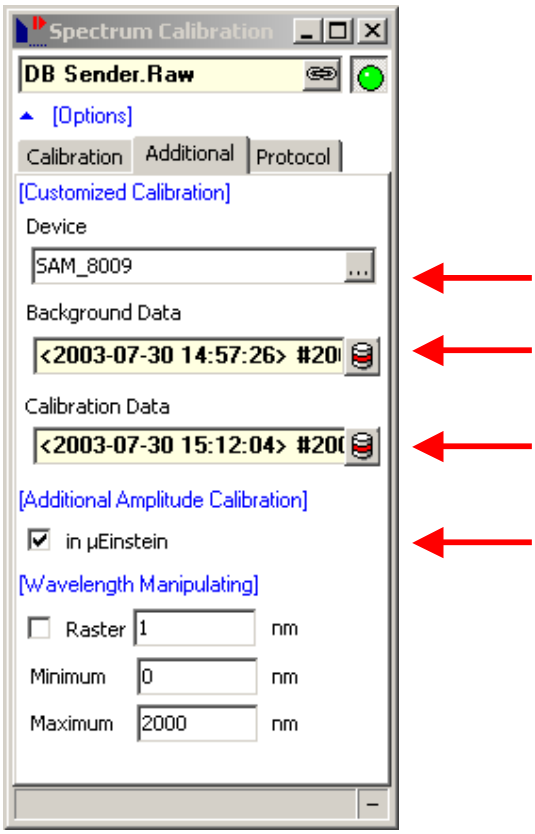


… and open the [Advanced options] of the Spectrum Calibration.

Activate [Save to database] and add a comment.



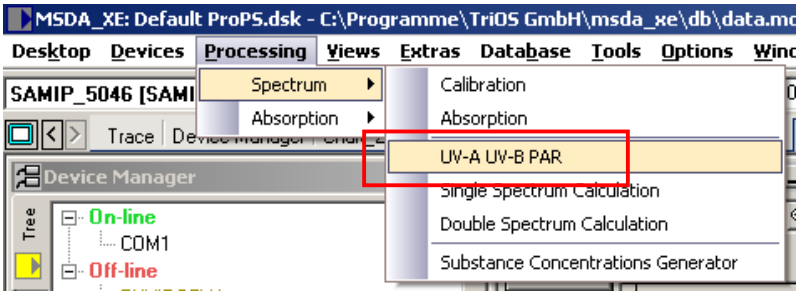
In the advanced options open the tab [Additional]:



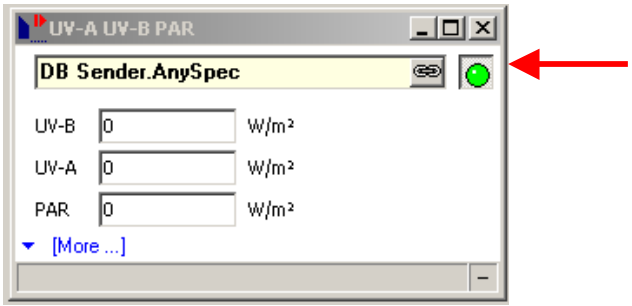
… select the devices' ini file and calibration files and activate the unit µEinstein.

Calculation UV-A, UV-B and PAR

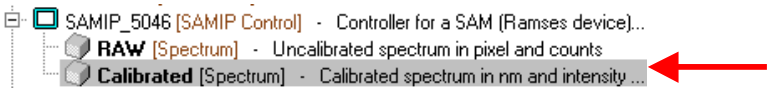
Press [Processing / Spectrum / UV-A UV-B PAR]:



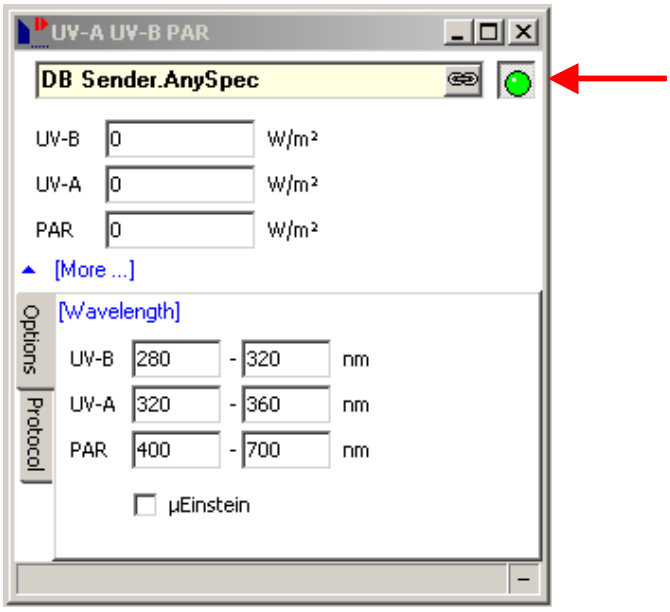
Following window will appear:



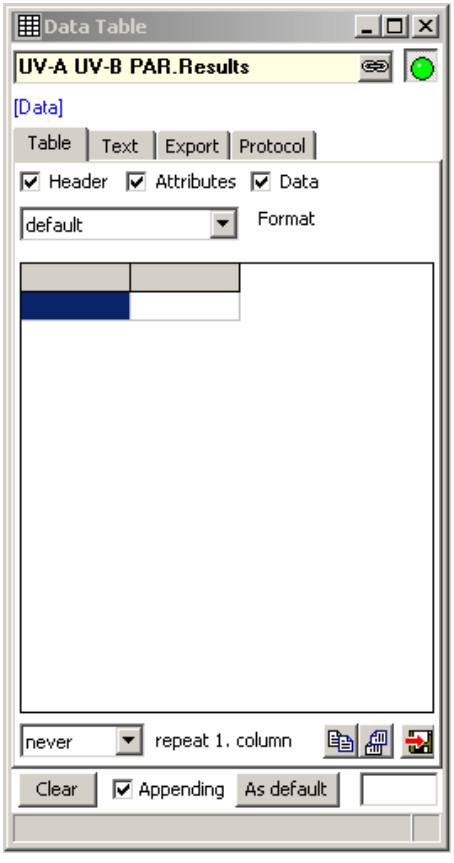
Choose the any spectra of your RAMSES as input (from the DBSender or directly from the RAMSES control)…



… and activate the window. In the [Advanced options] the wavelength ranges as well as the output unit can be configured:



The results of a batch measurement can be saved directly in a linked Data Table with the corresponding input: [UV-A UV-B PAR.Results].



7. Contact information

We are always working to improve our products and software. Please check our website for updates.

You have found an error in this document / software, or you would like to see some additional features enabled in a future version?

Feel free to contact us at: support@trios.de

Our website: www.trios.de

TriOS Mess- und Datentechnik GmbH
Werftweg 15
D- 26135 Oldenburg
Germany

fon +49 (0) 441 4 85 98 -0
fax +49 (0) 441 4 85 98 -20